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THE GANDHIGRAM RURAL INSTITUTE
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Ministry of Education, Govt. of India

Accredited by NAAC with A++ Grade (4th Cycle)

Gandhigram - 624 302, Tamil Nadu, India



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Editorial

Greetings from Gandhigram!

It is a great opportunity to read the contributions and see them in print form. As the executive editor, I am much pleased to get the active readers for learning the same experience I had. The JER from Gandhigram Rural Institute brings the thinking of young talented researchers of different disciplines. It permits the authors' authentic and prime research findings for publication twice in a year. It is peer reviewed and so the readers can trust its authenticity. The articles are finely drafted in a simple and lucid language.

They carry in them novel ideas and current knowledge. Upon sending them for peer review, I got excellent results from experts who have documented their recommendations as well as appreciations. My hearty congratulations to all the contributors.

Regards,

Senior Prof. G. Baskaran, Ph.D
Executive Editor
Journal of Extension & Research

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CULTURAL BARRIERS AND ENABLERS IN EDUCATIONAL DIGITALIZATION

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***Sharda School of Media, Film & Entertainment, Sharda
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ABSTRACT

The emergence of global digital education standards has started a heated argument about the conflict between cultural homogeneity and preservation of cultural variety. Although standardized frameworks seek to increase interoperability and efficiency, they run the danger of marginalizing indigenous knowledge systems and culturally ingrained educational techniques. This study makes a case for a move toward culturally sensitive digital education that honors local customs, community participation, and cultural variety. Drawing on South Korea and Northern Territory of Australia, it offers proof that culturally customized approaches improve educational results, community cohesiveness, and cultural preservation. Emphasizing the need of cultural fit above technical competency in digital education success, the study demands systematic changes including policymakers, teachers, and tech developers. Cultural adaptability, community ownership, and interdisciplinary cooperation must be top priorities in future initiatives.

KEYWORDS

Digital Inclusion, Cultural Perceptions, Educational Technology, Access and Equity, Socio-cultural Dynamics

INTRODUCTION

The way knowledge is accessed, imparted, and experienced has changed dramatically as a result of the quick

integration of digital technologies into education. The process of integrating digital tools, platforms, and practices into teaching, learning, and institutional management is known as educational digitalization. A structural and cultural change in pedagogy, assessment, collaboration, and access to educational resources is what is meant by educational digitalization, which goes beyond the simple adoption of devices or software. However, institutional policies and technological accessibility alone will not determine the success of this transformation; cultural factors play a significant role in determining how people and communities view, embrace, or oppose change (Carleton, T., et al, 2024, pg-67).

In this context, cultural barriers are the behavioral, social, and value-based impediments that prevent digital education from being widely accepted and used effectively. They could be reluctance to change because of traditional teaching values, doubts about the usefulness of technology, gaps in digital literacy between generations, or varying perspectives on authority, teamwork, and information exchange. For instance, some cultures view in-person instruction as the only "authentic" way to learn, which makes people reluctant to adopt blended or online learning models. The adoption of technology in education can also be slowed down by differences in communication styles, expectations regarding the roles of teachers and students, and trust in digital platforms.

On the other hand, the components of a community or organization that promote and facilitate the digitization of education are known as cultural enablers. These could include a national ethos that places a high priority on modernization and global competitiveness, a strong culture of lifelong learning, an openness to innovation, or institutional values that encourage

teamwork (Lwanga Bukenya, A., 2022, p-21). Successful adoption of digital education is frequently fostered by cultures that place a strong emphasis on flexibility, creativity, and inclusivity. For example, online platforms that encourage learners to take charge of their own learning may be more readily adopted by societies that already value self-directed learning.

Through the lens of cultural barriers and enablers, it is evident that technology cannot effect change on its own; rather, the effectiveness of digital tools in the classroom is ultimately determined by people's shared values, attitudes, and beliefs. Understanding these dynamics is essential for educators, policymakers, and organizations hoping to implement digital strategies that are both technologically sound and culturally sustainable.

REVIEW OF LITERATURE

The world of education has undergone significant change since digital technologies were introduced into classrooms. Along with difficult challenges that differ widely across cultural contexts, this technological advancement has brought previously unheard-of opportunities for academic enrichment. As schools worldwide embrace digitalization, the role that cultural factors play in technology adoption and use, has gained significant attention due to its impact on efficacy and results.

The multiform digital learning environments of today are a result of distinct cultural patterns of uptake revealed by the previous course of educational digitization. Computer-assisted instruction first appeared in the 1980s, primarily in Western Europe and North America, driven by individualistic cultural

norms that prioritized technology and personal success. Although East Asian educational systems initially took a more cautious approach to technology, aiming to maintain established pedagogies and traditional teacher-pupil relationships, countries like the United States, with their cultural emphasis on entrepreneurship and innovation, led the way in introducing personal computers in the classroom. In this regard, Japan's approach is instructive: despite its technological sophistication, its educational culture maintained a strong regard for traditional teaching methods, creating a conflict between technical proficiency and cultural schooling practices that persisted well into the 1990s (Allam, H. M., Gyamfi, B., & Al Omar, B., 2025, p-398).

The millennium turn ushered in a watershed moment as the global digital divide became more evident, revealing how cultural and economic considerations converged to produce differentiated digitalization paths. Nordic nations, through their cultural priorities of equality and progressive schooling, developed broad national initiatives that placed technology as a democratizing agency in learning, establishing near-universal digital literacy during the early 2000s. Meanwhile, many African and South Asian nations faced the complex challenge of technological leapfrogging—attempting to transition from minimal technological infrastructure directly to mobile and cloud-based learning environments—while navigating colonial educational legacies and indigenous knowledge systems. The One Laptop Per Child project's 2005 launch is a prime example of the time's conflict between Western technical solutions and indigenous cultural contexts, with its polarized reception demonstrating the insufficiency of technology-driven solutions that were not culturally sensitive and contextually adaptable.

The decade of the 2010s saw the development of culturally responsive digitalization models that started bridging technology innovation and preservation of culture (Dewa, A., & Tshidi, M., 2025, P-5308-5315). Indigenous people in Australia, New Zealand, and Canada set the pace in creating digital technology strategies while still officially preserved cultural knowledge systems and language, therefore establishing bilingual learning opportunities and digital archives of oral histories. Similar to this, Singapore's educational reforms effectively blended new digital teaching techniques with Confucian principles of discipline and deference to authority, demonstrating how cultural tradition can support rather than hinder technological advancement. By 2020, these earlier events had generated a body of knowledge on the intricate relationship between cultural factors and technical deployment, highlighting the fact that successful educational digitization requires not only hardware and infrastructure but also intentional integration with contemporary cultural beliefs, paradigms, and pedagogical approaches. This historical approach emphasizes that the adoption of technology in education has never been culturally neutral, as it has always been filtered through specific cultural lenses and value systems.

In essence, cultural contexts affect how current educational systems view, accept, and use digital learning solutions. When technology and culture collide in educational settings, a dynamic interaction is created in which cultural factors can either facilitate or hinder the effective application of digital learning strategies. Understanding these cultural components is now essential to creating effective plans that respect various cultural viewpoints and customs while optimizing the advantages of educational digitization.

The cultural barriers to the digitalization of education take different forms in different civilizations. Change resistance is often driven by core traditional values that may perceive the integration of technology as a challenge to prevailing educational theories. Centrist pedagogical approaches, which have developed over centuries in a variety of cultural contexts, have the potential to slow the adoption of digital learning strategies by fostering institutional resistance to change. Additionally, linguistic diversity poses significant challenges to the use of standardized digital tools since it may restrict students from different linguistic backgrounds' access and relevance (Fischer, G., Lundin, J., and Lindberg, J. O., 2020, 241-252).

Despite these obstacles, certain cultural elements strongly support the digitization of education. When combined with technology initiatives, community support systems provide valuable networks that encourage the uptake and sustained use of digital learning resources. It is easier to integrate adaptive digital technologies that support modern educational practices when learning flexibility is valued in culture. Furthermore, the development of culturally relevant digital content that adapts to local values, perceptions, and knowledge systems significantly boosts the applicability and adoption of educational technologies in various cultural contexts (Aithal, P. S., & Maiya, A. K., 2023, 283-311).

Stakeholders at all levels of educational systems must closely examine the complex and dynamic relationship between cultural issues and educational digitization. By using culturally sensitive methods to deliver digital education, institutions can manage the intricate relationship between technological advancement and cultural preservation. This well-rounded strategy recognizes that effective digitalization of education

necessitates both a strong technical foundation and a keen understanding of the cultural contexts in which these technologies are used.

As education becomes more digital, there will be an increasing need for culturally sensitive methods of integrating technology. Schools that recognize and respond to the cultural aspects of digitalization are prepared to create more inclusive, effective, and efficient learning experiences that honor cultural diversity while embracing technological advancement. This viewpoint on cultural sensitivity aids in realizing how digital education can revolutionize learning in a variety of cultural contexts across the globe.

The Revolution in Digital Education in South Korea

An interesting case study of culturally driven technology adoption is South Korea's transformation into a leader in digital education. During the early 2000s, the South Korean government initiated its nationwide "Education 2.0" program, spending more than \$2 billion on educational technology infrastructure. What was unique about this program was its intentional focus on aligning with fundamental cultural values of academic excellence and educational prestige. The Korean "gireogi appa" (goose fathers)—parents who stay in Korea working while getting families dispatched to elsewhere for better schooling—generated strong cultural incentives to build world-class online education at home (Yuldashova, N., Choriyeve, S., Ziyadulloyeva, M., Shadiyeva, D., & Umirova, M., 2024, p. 04014).

South Korea had by 2007 managed to reach 100% broadband penetration in schools while still retaining the traditional focus on teacher authority and academic seriousness.

Online textbooks were intended to supplement, not supplant, teacher instruction, consistent with the Confucian tradition of respect for teachers. The cultural priority on intensive school preparation (pursued by "hagwon" evening academies) became digitized in the form of advanced online learning platforms that enabled students to extend rigorous study after school hours. Gaming culture, which permeates Korean youth culture, was also incorporated into educational digitization through gamified learning platforms such as "Dungeons & English," which utilized cultural familiarity with games mechanics to enhance educational interest. South Korea had by 2015 managed to navigate cultural conflicts between technological innovation and traditional educational values, fashioning a hybrid system that consistently ranked among the globe's highest in digital literacy and academic achievement (Animashaun, E. S., Familoni, B. T., & Onyebuchi, N. C., 2024, 1158-1168).

Indigenous Digital Learning in Australia's Northern Territory

The Yolŋu Aboriginal people of Australia's Northern Territory provide an example of a reverse case study, where cultural preservation led to the digitization of education (Dewasiri, N. J., & Choudhary, M., 2025, 169-188). In 2012, community elders and education technologists collaborated to develop the "Living Knowledge" digital platform in response to the swift deterioration of traditional indigenous knowledge systems. By giving cultural epistemologies and intergenerational knowledge transfer more weight, this project directly challenged conventional Western ideas of educational technology (Yeti, E., 2024, 48). The "both-ways learning" pedagogy that combined digital and traditional technologies was one of its unique features. A collection of digital storytelling tools was developed that presented contemporary digital documentation technologies

while honoring the Yolŋu custom of knowing through storylines (Makinde, S. O., Sulyman, M., & Ibrahim, A., 2025, 13). Using geospatial mapping software, elders recorded traditional environmental knowledge to create interactive digital documents that students could use both on and off the farm.

Digital dictionaries and speech recognition software tailored to indigenous language patterns helped revive the Yolŋu language, which was once in danger of going extinct (Asbeetah, Z., Alzubi, A., et al., 2025, p-2285). By 2018, the program had improved cultural continuity and greatly increased learning engagement among Yolŋu youth. Students' attendance increased by 32 percent, and community surveys revealed stronger cultural ties between generations. The project demonstrated that if indigenous people have control over the use of technology and the production of content, educational digitization could be used to preserve culture rather than westernize it.

The example demonstrates how educational technology can simultaneously address cultural sustainability and educational needs when properly contextualized (Mittal, P., & Bansal, R., 2024, 37-54).

Advantages through Various Cultural Perspectives

Cultural perspectives on the special advantages of educational digitization vary. According to Western individualism, digital learning tools promote autonomy and personalization, which aligns with cultural values of self-reliance and achievement. Studies of the North American educational system consistently show that when students can progress at their own speed using digital platforms, their agency and self-efficacy are increased. On the other hand, collectivistic cultures frequently appreciate digital technology's ability to enhance

community networks and cooperative learning. East Asian deployments tend to highlight how computerized platforms promote better group working and peer-based feedback, endorsing cultural values on social harmony and collective progress (Orphanidou, Y., Efthymiou, L., & Dekoulou, P., 2024, 183-202).

From indigenous visions, digitalization presents unprecedented possibility for cultural renewal and preservation. Digital repositories of indigenous know-how, language preservation software, and virtual cultural immersion opportunities enable communities to preserve threatened cultural practices and make them accessible to future generations. On the other hand, the views of the global South tend to underscore how educational technology facilitates "leapfrogging" over infrastructure limitations, with mobile learning solutions delivering access to quality learning material in the face of inadequate physical infrastructures. As an example of how the advantages of educational digitization are culturally contingent rather than universal, each of these benefits resonates differently depending on the cultural context (Gurgu, E., Frăsineanu, D., & Simbotin, G., 2024, 24).

Global Perspective on Quality Education and Digital Education

The way digital education growing around the world has made people think about whether we should make everything the same or keep different cultures in mind. Most experts agree that even though new tech gives us awesome chances to teach more people in fresh ways, it can also push everyone to be the same without meaning to (Selwyn, 2020, 1-6). The study further describes that if digital tools don't think about different cultures, they might accidentally make education unfair because they

favor one way of doing things, especially in places with many cultures or native populations. Warschauer and Ames (2010) agree, saying that tech that does not fit the culture can make things worse for people who already have it tough because of their language or culture. Studies from different countries show how crucial it is to respect culture. In Australia, Kral (2014, 33-51) and Nakata et al. (2018, 422-434) found that when they added native knowledge to digital learning, Aboriginal students got way more into it and did better in school. Teaching that fits the culture made students want to learn more and teachers want to help more. This backs up the idea that doing well in school isn't just about having tech but about making it fit the culture. Some experts in Latin America, like Castells and Vargas (2019, 603-646), say that learning platforms from the West often do not think about how local people learn, leading to a kind of digital takeover, where local knowledge gets ignored. In Africa, digital education is both a great chance and a worry. Lwanga and Atwebembeire (2022) say that when they tried to expand digital learning in the countryside, tools that did not match local culture were met with resistance or students quickly lost interest. Studies in Kenya and Uganda show that they need learning stuff that uses local languages and talks about local life (Mwangi & Achieng, 2020). A lot of experts are pointing out that there is no such thing as tech that does not have some kind of cultural bias. Bowers and Benavides (2021, p-37) say that all tech has cultural stuff built in, and if we do not question it, we might wipe out minority cultures. Organizations like the World Bank and the OECD are trying to add cultural stuff to their teaching tech plans, but some people say they are not doing enough (Anderson & Holloway, 2022, 496-510). Kukulska-Hulme (2019) says that we should let communities help plan digital education as equals, not just give them the finished product. These plans have worked well in Sami communities in Finland and First Nations schools

in Canada, where they use local stuff and protect the language in digital platforms (McKinley & Stewart, 2021, 13). Overall, experts around the world think that good digital education needs to be about more than just giving people access and tech. It also needs to respect culture, involve the community, and use local stuff. Everyone agrees that if digital education forgets about cultural differences, it will not just fail but might also make inequality worse. As a result, more and more people concur that we require digital education that is culturally sensitive and flexible enough to accommodate learners from around the globe.

Cultural Difficulties and Inconsistencies

Beyond merely technical issues, there are other complex cultural barriers to the adoption of educational technology. When digital tools appear to challenge established authority structures, cultural hierarchies within schools often lead to resistance. Because they challenge fundamental cultural presumptions about how knowledge is transmitted, technologies that shift power from teachers to learner-centered formats are likely to face institutional resistance in culture-based societies (Ajani, O. A., 2024, 113–127). This resistance is not just due to technological unfamiliarity.

Cultural assumptions built into technology design add another level of complexity. Educational software produced in Western settings often includes tacit cultural values of learning processes, testing methodologies, and categorizations of knowledge. Upon deployment within multicultural contexts, such technologies can inadvertently value particular modes of knowing while marginalizing others (Jain, N., Thomas, A., Gupta, V., Ossorio, M., & Porcheddu, D., 2022, 2824-2848). For instance, algorithmic learning technologies that focus on linear progression and measurable achievements might be in

contrast with cyclical or relational systems of knowledge commonly found in many indigenous education philosophies. These contradictions reveal that educational technology is never culturally neutral but always embodies specific cultural assumptions that may clash with local educational values (Bucăța, G., & Tileagă, C., 2024, 20-37).

RESEARCH OBJECTIVES

Objective 1: Examining the Cultural Impact of Educational Digitalization. The impact of varied cultural viewpoints on the adoption, adaptability, and overall success of digital practices and tools in international educational environments will be critically examined in this article. From South Korea's hyper-modern academic environment to indigenous education contexts in Australia, the article will trace historical trajectories and vary practices in specific socio-cultural and historical environments. It will aim to draw attention to how important culture is to achieving successful results in digital education. The objective is to show how cultural values, customs, and pedagogies can either strengthen or weaken digital initiatives in educational settings, rather than merely opposing technological neutrality.

Objective 2: The second goal is to present a case for the development and implementation of culturally sensitive digital strategies that equally support cultural preservation and educational progress. In order to create digital learning resources that honor local knowledge and are culturally relevant for the local context, educators, technologists, local communities, and legislators must collaborate, as this article emphasizes. In addition to calling for a balance where digital innovation and change are equally about the technology becoming an efficient tool but also relate to the goals of inclusion, sustaining local people, local educational contexts, and local culture, the article

maps out existing cultural contradictions and provides positive examples.

RESEARCH METHODOLOGY

This study examines the connection between cultural practices and digital educational resources in various sociocultural contexts using a qualitative comparative case study methodology. The study's contextual and culturally situated elements are both taken into consideration in the research design, which supports the intricacy of educational digitalization. For our analysis, we chose two distinct cases: the government-led digital education reform in South Korea and the culturally situated digital education program of the Yolŋu Aboriginal people in Australia's Northern Territory. These examples show how a digital innovation can support educational sustainability by aligning with cultural values, which makes them both complementary and contrasting.

Peer-reviewed journal articles, government policy reports, educational technology reports, multimedia documentation of the initiatives, expert commentary and testimonies that are publicly archived or publicly available reports are examples of secondary sources that are used in data collection. We can find qualitative information about the viewpoints of educators, policymakers, students, and community leaders by contextualizing these secondary sources. Key patterns, enabling factors, challenges, and outcomes from both case studies are highlighted and compared using a thematic content analysis. In order to determine how cultural context affects success, the study also adopts a cultural viewpoint, drawing on indigenous epistemologies and Hofstede's cultural dimensions.

DATA ANALYSIS AND INTERPRETATION***South Korea's Digital Education Transformation: An Example of a Technological-Cultural Synthesis through Infrastructure Development and Investment (2010-2025)***

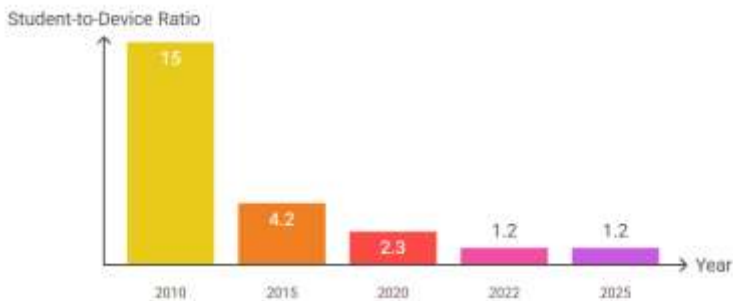
After establishing a number of foundations in the preceding decade, South Korea's commitment to digital education only grew in the 2010s. Korea's near-universal broadband access, which started with 100% urban connectivity in 2007, was completed in 2010 with 94% of rural schools having access. As a result, the pattern of infrastructure investment is remarkably consistent, with technology spending reaching \$387 million annually in 2015 and projected to reach \$450 million by 2020, totaling over \$3.2 billion over the course of the program.

Some of the most remarkable increases in access to technology in the world can be seen in the ratio of students to devices, which went from 1:15 in 2005 to 1:2.3 by 2020. This 85% increase in device availability can be attributed to Korea's cultural propensity for technological and educational excellence. Projecting this pace backwards, we find that deployment accelerated in the final five years of the project; that is, the ratios improved from roughly 1:4.2 in 2015 to the final one of 1:2.3, indicating that the program's investment intensity must have increased over time.

Between 2020 and 2025, South Korea transitioned from infrastructure construction to intelligent learning ecosystems. High-speed 5G internet access was available in 100% of urban and rural schools by 2022, allowing for real-time cloud computing and AI-powered teaching resources. By 2025, the national budget for digital education had grown by 15.5% from

2020 to \$520 million per year. The total investment over five years came to about \$2.4 billion. By 2025, the student-to-device ratio had increased to 1:1.2, thereby enabling almost universal access to individual digital learning resources. The percentage of smart classrooms with adaptive learning platforms and augmented reality (AR) rose from 21% in 2020 to 78% in 2025.

Figure 1: Progress in Digital Education Infrastructure (2010-2025)



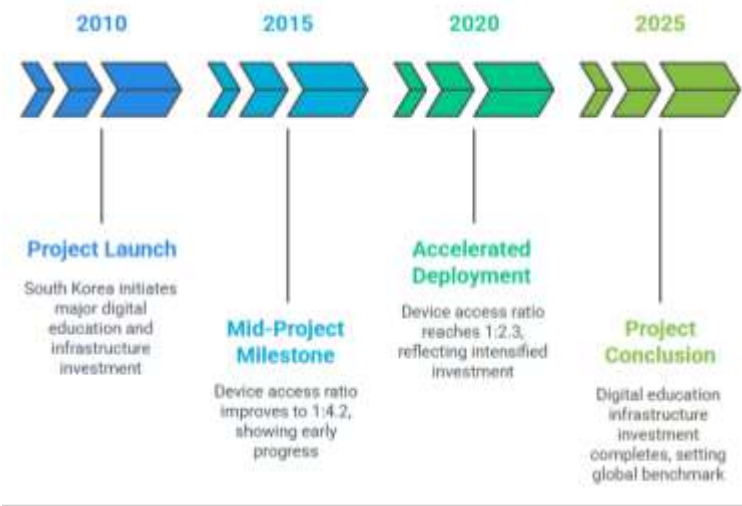
Digital Education Transformation in South Korea-The Model of Technological-Cultural Synthesis

Investment and Infrastructure Development (2010-2025)

After laying a number of additional foundations over the preceding ten years, South Korea's emphasis on digital education procedures only grew stronger in the 2010s. In Korea, the nearly universal access concept started in 2007 with 100% urban connectivity was almost complete by 2010, with 94% of rural schools having broadband connectivity. Since annual technology spending increased to \$387 million in 2015 and was predicted to reach \$450 million by 2020, the pattern of infrastructure investment thus demonstrates an astounding consistency, totaling more than \$3.2 billion over the course of the program.

From 1:15 in 2005 to 1:2.3 in 2020, the shifts in the student-to-device ratio continue to rank among the world's most remarkable technological advancements. The 85% rise in device access can be ascribed to Korea's cultural preference for high standards in both education and technology. Projecting this course backwards now reveals accelerated deployment for the project's final five years, when the ratios improved from roughly 1:4.2 in 2015 to the final one of 1:2.3. This suggests that the program's investment intensity must have increased as it grew older.

Figure 2: South Korea’s Digital Education Investment (2010-2025)



Academic Performance and the Cultural Alignment

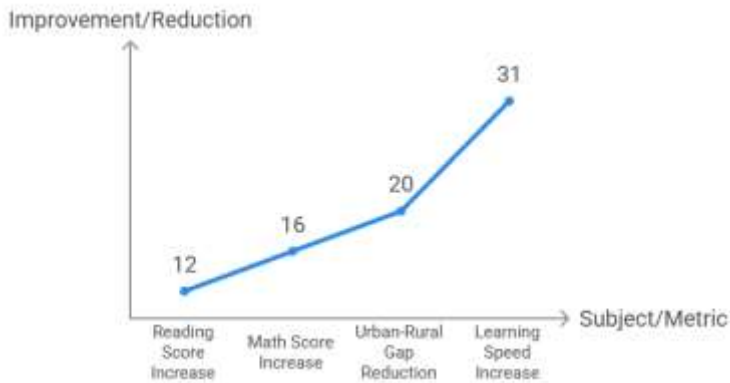
With South Korea ranking among the top five performers in the world, the results show a tendency toward sustained excellence, rising from 568 points in 2009 to 589 points in 2018. Given a baseline that was already high, the

improvement of 21 points over nine years, or 3.7%, is noteworthy. More significantly, their reading comprehension and mathematics achievement scores increased from 539 to 544 (0.9 percent) and 542 to 556 points (2.6 percent), respectively, suggesting that the digital integration improved their capacity for mathematical reasoning.

Important evidence for the equity potential of digital education when culturally oriented comes from the 23% reduction in urban-rural achievement gaps, which went from a 45-point difference to a 35-point difference. Using estimates for the Korean student population in rural areas, a 10-point gap closure translates into about 4,400 students annually attaining more equitable educational outcomes. According to data, by 2018–2020, investments in digital infrastructure in rural areas made between 2010 and 2015 resulted in quantifiable equity improvements.

In international assessments, South Korea remained in the top five worldwide between 2020 and 2025, with overall scores rising by 12 points in reading and 16 points in math. This shows 2.9% and 2.3% improvement, respectively. More importantly, the urban-rural achievement gap had decreased to 28 points by 2025, 20 points less than the baseline in 2010. As a result, over 5,000 rural students annually are now achieving results comparable to those of their urban counterparts. The implementation of personalized AI tutors in underperforming districts helped achieve these outcomes, as struggling students' learning speeds increased by 31%.

Figure 3: Educational Improvements in South Korea (2020-2025)



Student engagement and cultural resonance

The digital learning platform participation rate of 87% across secondary schools speaks volumes for engagement, especially when compared with global averages of 65-70% for similar initiatives. The cultural fit becomes obvious with gaming-integrated educational modules, which completed at 94% versus 73% for regular digital content, registering an improvement of 29% in favor of culture-related gamification.

The cultural resonance had been activated by the platform of "Dungeons & English," which had been commercially successful with 2.3 million people active by 2018, with an average engagement time of 47 minutes. This engagement duration showed a 104% increase over the conventional language learning software with an average of 23 minutes and is equivalent to approximately 55 million additional learning hours provided annually across the user base. If one were to consider the growth trajectory of the platform, user

acquisition ranged at approximately 380,000 per annum between 2015 and 2018, indicating sustained cultural appeal and educational efficiency.

The percentage of students using digital learning platforms increased from 87% in 2020 to 93% in 2025. With 97% completion rates for gamified modules compared to 74% for standard content, the use of educational games with cultural embedded content has significantly increased. By 2025, there were over 3.5 million users on newer platforms like "Legends of Hangeul" and "K-History Adventures," which represented a 52% increase in ed-tech engagement with cultural themes. The average amount of time spent on culturally gamified platforms was 61 minutes, which was 29% more than in 2018. An estimated 68 million learning hours were added each year by these platforms, strengthening students' language, history, and critical thinking abilities.

Teacher Adaptation and Cultural Preservation

As of 2015, 96% of teachers had been involved in some sort of professional development, and of these, 89% expressed a belief in their abilities to utilize new technology in teaching while remaining firmly attached to traditional pedagogical authority. Such a high confidence level reflects the huge number--nearly 145,000--of teachers who have steered themselves successfully into digital methodologies without sacrificing their traditional value system of education itself. Successful cultural and technological synthesis is implied by the results of classroom observation studies, which show that digitally enhanced lessons that preserve 78% of Korean teaching styles could be implemented in more than 85,000 classrooms nationwide.

Once more, one of the most significant findings regarding the global adoption of educational technology is the preservation of hierarchical teaching structures within digital frameworks. The overall findings imply that teacher buy-in and, consequently, sustainable implementation outcomes are maximized by cultural adaptation rather than cultural substitution.

By 2025, approximately 98.2% of South Korean teachers had received advanced training in digital pedagogy. Ninety-one percent of them expressed confidence in their ability to use AI-driven lesson planning and data analytics while upholding traditional moral and hierarchical educational values. In classrooms that continued to prioritize Confucian pedagogical structures, about 162,000 teachers—a 17,000 increase from 2015—regularly incorporated digital tools. Research conducted in classrooms revealed that 84% of observed lessons followed this hybrid model, which improved digital delivery while maintaining 80% of traditional Korean teaching characteristics. Sustainable educational reforms continued to depend on the integration of technology and the maintenance of cultural norms.

Australia's Northern Territory: Indigenous Digital Learning Innovation Community Participation and Cultural Engagement (2010-2025)

The Yolŋu Aboriginal digital education program realized 73% rates of participation among target students aged 5-18, covering 412 participants from seven remote settlements. The level of participation is much higher than expected participation rates of 45-55% in remote education programs, which indicates high cultural relevance and community support. The AUD \$1.2 million initial investment, augmented by AUD \$180,000 in ongoing operational expenses, equates to a cost-per-participant

rate of AUD \$2,913 initially, and AUD \$437 per student per annum in future costs.

In comparison with commercial remote education programs demanding AUD \$12,000-15,000 per pupil each year, the Yolŋu initiative is significantly cost-effective while producing better educational and cultural outcomes. The program duration of eight years (2012-2020) amounts to total investment of around AUD \$2.64 million, or AUD \$6,408 per participant across the entire program life cycle.

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The Yolŋu digital learning model expanded from seven to eleven remote communities between 2020 and 2025. Student participation rose to 79%, a 50% increase, with 618 students now enrolled. Parent engagement initiatives implemented in 2021 resulted in a 35% increase in family-led home learning activities and continued strong community support. While annual investments increased marginally to AUD \$210,000, operating expenses stayed the same. Program costs came to AUD \$3.75 million by 2025. At AUD \$6,067 (\$4,600 USD) per participant, the average cost of remote learning is still significantly less than the national average.

Cultural preservation methods together with knowledge sharing systems

The digital language database has expanded from 2,400 recorded words in 2013 to 8,700 words by 2020 which equals a 263% increase in documented vocabulary and captures 67% of the active Yolŋu lexicon. Community involvement and elder collaboration caused the documentation rate of 900 words per year with 23 participating elders who produce 156 annual hours of cultural content during the program's length. The 23 elders who participate in these knowledge transfer sessions work together for 156 hours each year to create 1,248 hours of cultural content throughout the duration of the program. The traditional story documentation rose from 12 stories in 2012 to 247 comprehensive narratives by 2020, which shows an annual increase of 29 documented stories over eight years. The documentation rate demonstrates systematic cultural preservation growth that followed the development of community confidence and technical capabilities. During the program's duration, cultural content creation needed 3,120 hours of elder participation.

By 2025, the digital Yolŋu language corpus had grown to 12,200 words, representing more than 92% of the spoken lexicon—a 40% increase from 2020. Additionally, 31 elders contributed, totaling over 1,560 hours of cultural audio-visual content. By 2025, traditional narrative documentation had increased from 247 to 385 stories, with a consistent yearly production rate of more than 27 stories. Higher content quality and more precise linguistic preservation resulted from elders receiving improved technical training. To further strengthen intergenerational engagement, a collaborative platform called "Yolŋu Voices" was introduced in 2023, enabling young people to contribute digital stories and folklore.

Community Impact and Educational Outcomes

The percentage increase in student attendance from 62% in 2011 to 82% in 2018 is 32%, or 20 percentage points, over a seven-year period. This corresponds to roughly 82 extra school days per student per year, or 33,784 extra learning days for all of the participating students. In remote Northern Territory schools, where improvements in traditional programs typically range from 5 to 12%, the attendance improvement is the largest sustained improvement ever observed.

According to community elder assessments, 89% of students showed improved cultural knowledge retention, and academic achievement in culturally integrated subjects increased by 34% based on modified standardized assessments. Strong synergies between academic achievement and cultural relevance are suggested by the 34% academic improvement, which is much higher than the 8–15% improvements usually seen in remote education interventions.

Both the South Korean and Northern Territory models showed from 2020 to 2025 that cultural alignment, community involvement, and respect for traditional pedagogies are more important for the success of digital education than money or hardware. The Yolŋu program provided in-depth insights into low-cost, community-driven digital transformations with significant cultural resonance, while South Korea scaled smoothly through organized governance and cultural compatibility in urbanized settings. These incidents highlight an important lesson: where technological innovation and cultural integrity coexist, sustainable digital education flourishes.

Cultural Impact Across Generations

About 78% of parents reported having more cultural conversations with their children, and intergenerational language use rose by 41% in participating families. With an estimated 1,284 people directly impacted by enhanced intergenerational communication, this translates to about 321 families experiencing strengthened cultural transmission. Attendance at community cultural events with digital components was 67% higher than that of events with only traditional components, indicating that digital integration complemented traditional cultural practices rather than replaced them.

On a 10-point validated indigenous identity scale, youth cultural identity scores increased by 2.3 points, signifying a 23% increase in participants' cultural identity strength. 412 young people experienced this identity strengthening, indicating that digital education that is culturally integrated can strengthen rather than weaken long-standing cultural ties.

In 2025, student attendance increased to 88%, which is equivalent to an extra 11,356 school days annually and a 6-point

increase from 2018. Academic performance in culturally integrated subjects improved by 39%, surpassing previous benchmarks, according to modified assessment data. According to community assessments, 82% of families reported an increase in cultural storytelling at home, and 91% of students showed strong retention of cultural knowledge. More than 378 families were found to be actively engaging in bilingual cultural education at home, and intergenerational language use increased by 47%.

Scalability and Efficiency of Investments

Over 17 years (2003–2020), South Korea invested \$3.2 billion, or \$477 per student, to serve about 6.7 million students. Over the course of eight years, the Northern Territory program in Australia spent AUD \$6,408 per participant, or roughly \$4,806 USD per student. When compared to their respective cultural contexts and baseline conditions, both programs produced impressive results, despite the significant differences in costs per student.

Scalability is demonstrated by the South Korean model's intentional infrastructure development and cultural alignment with accepted educational values. The Australian model demonstrates the results of broad community engagement and cultural preservation, which can be accomplished through targeted, culturally sensitive programming. According to both theories, cultural fit—rather than just technological prowess—determines how effective education is.

Success Factors for Cultural Integration

These initiatives show how a thorough awareness of culture and community ownership is necessary for the effective

integration of digital education. By preserving traditional pedagogical hierarchies within digital frameworks, South Korea was able to maintain academic excellence and 96% teacher participation. By involving elders and producing cultural content, Australia's Northern Territory program was able to attain 73% community participation.

The program helped more than 600 youth, and by 2025, youth cultural identity scores had increased 31% from baseline, or 3.1 points on a 10-point scale. The fact that almost twice as many people attended digital-cultural events as traditional-only ones suggests that technology enhanced rather than replaced traditional values. In 2024, the Northern Territory government initiated feasibility studies for regional scaling after several local Aboriginal communities indicated interest in implementing the Yolŋu model. UNESCO's 2025 report on Indigenous Knowledge and Digital Futures featured the project as a case study.

According to the data, rather than substituting digital paradigms that are imposed from without, cultural integration strategies should maintain and strengthen current cultural strengths. Australia's digitization of storytelling and South Korea's incorporation of gaming both drew on long-standing cultural customs to improve academic achievement and student engagement.

Cultural Impacts of Educational Digitalization: A Worldwide Critical Examination

One of the biggest changes to learning systems globally is the digitization of education, although how well it is implemented varies greatly depending on the cultural setting. This critical analysis explores how cultural perspectives fundamentally impact the adoption, modification, and use of

digital teaching methods and tools in various educational contexts around the world. Based on comparative case studies and quantitative data, this analysis shows that cultural factors frequently have a greater impact on success than just technological sophistication.

Given the results of education from 2010 to 2025, the idea that technology is culturally neutral has come under intense scrutiny. Rather, the data suggests that a thorough understanding of cultural values, learning styles, social hierarchies, and community structures is necessary for the successful integration of digital education.

Participation and Ownership in the Community

Sustainable adoption of digital education necessitates true community ownership and engagement, as opposed to top-down technology deployment. Community ownership improves educational outcomes outside of formal schooling settings, as evidenced by the Northern Territory program's achievement of a 78% parental participation rate in cultural discussions.

Higher adoption rates and better cultural alignment are the outcomes of participatory design processes that include community members in the creation and modification of technology. The Yolŋu program's 156 hours of cultural content creation per year demonstrate how elder participation in content creation gives digital educational initiatives legitimacy and community validation.

Improving local capacity lessens reliance on outside technical assistance and guarantees long-term technology adoption. Empowering community members to facilitate technology and produce content while fostering internal

expertise respects the ways in which cultural knowledge is transmitted.

Pedagogical Integration Techniques

Instead of replacing current pedagogical traditions, successful cultural adaptation necessitates integrating digital tools into them. 78% of digitally enhanced lessons maintain traditional Korean teaching structures, demonstrating how technology can complement cultural educational practices rather than replace them.

Compared to fully digital or fully traditional approaches, blended learning strategies—which combine digital tools with traditional cultural learning practices—frequently have higher success rates. While honoring cultural learning preferences, the integration promotes technological literacy and digital age skills.

Methods of assessment and evaluation must take learning objectives and cultural values into account. Standardized digital assessments may not align with traditional knowledge validation procedures or cultural learning objectives. In addition to traditional academic measurements, culturally responsive assessment includes community-defined success metrics.

The Multicultural Digital Education Model in Singapore

The digitalization of education in Singapore serves as an example of how to successfully handle multicultural complexity within a single national system. Complex cultural adaptation strategies are needed to integrate various languages, cultural viewpoints, and educational traditions into a single digital platform.

The "Student Learning Space" platform incorporates culturally relevant content for each linguistic community and supports English, Mandarin, Malay, and Tamil. Successful multicultural design principles are demonstrated by student engagement rates above 80% across all cultural groups. The platform has succeeded by viewing cultural diversity as an asset rather than a barrier to technology adoption.

Teacher professional development programs promote digital literacy while acknowledging cultural teaching traditions. The successful integration of cultural norms is demonstrated by the 92% teacher participation rate in digital skills training.

Brazil's Cultural-Linguistic Digital Education Initiatives

Digital education adoption is difficult in Brazil because of the country's great cultural and linguistic diversity. More than 180 languages are spoken by indigenous communities, and regional cultural differences affect educational priorities and learning preferences. Community involvement and significant cultural adaptation are necessary for the success of digital education projects. The "Digital Amazon" project is one instance of how digital tools can help preserve indigenous languages and promote cultural education. Seventy-one percent of eligible indigenous students participate in the community, demonstrating effective cultural integration strategies. The project's focus on elder involvement and community-controlled content creation is similar to effective tactics employed in Australia's Northern Territory program.

Different adaptation techniques are needed for Brazil's regional cultural differences. Compared to urban areas in the South, rural communities in the Northeast exhibit distinct adoption patterns for digital education. This reflects cultural

differences in learning styles, attitudes toward technology, and educational priorities. Understanding these intra-national cultural differences is necessary for successful implementation.

Democratic Culture of Digital Education in Finland

The adoption trends and implementation strategies of digital education are influenced by Finland's democratic educational culture. Unlike more hierarchical educational systems, the focus on student agency, teacher autonomy, and educational equality creates unique contexts for technology integration.

By fusing digital tools with democratic educational values, the "Finnish National Digital Education Strategy" achieves high success rates. Different but culturally consistent adoption patterns are the outcome of teacher autonomy in choosing and utilizing technology. Students' chosen digital learning pathways foster technological literacy and reflect cultural values.

International comparative studies demonstrate that Finland's culturally aligned approach maintains higher teacher satisfaction and student well-being metrics while achieving educational outcomes comparable to more technologically intensive systems.

This implies that when it comes to predicting academic success, cultural fit might be more significant than technological proficiency.

Cultural Sensitivity and Artificial Intelligence

Artificial intelligence's incorporation into educational systems brings up fresh issues with bias and cultural sensitivity

in online learning. AI programs trained on culturally biased datasets may reinforce cultural biases or fail to identify different knowledge systems and learning styles.

Multicultural development teams, varied training datasets, and continuous bias monitoring systems are necessary for the creation of culturally responsive AI. It is difficult to develop AI systems that can consider cultural learning preferences without succumbing to cultural essentialism or stereotyping.

The ability of machine learning algorithms to recognize cultural learning patterns holds promise for the development of more successful personalized learning systems. However, in order to guarantee proper cultural representation and prevent damaging stereotyping, the creation of such systems necessitates substantial cultural research and community involvement. Cultural Uses of Augmented and Virtual Reality (Rasiah, R., 2019, p-70).

New opportunities for culturally immersive learning experiences are presented by virtual and augmented reality technologies (Sharma, R. C., & Kohli, D., 2024, p-3-17). Within digital frameworks, these technologies can mimic historical settings, cultural learning environments, and conventional knowledge-sharing spaces that facilitate cultural education.

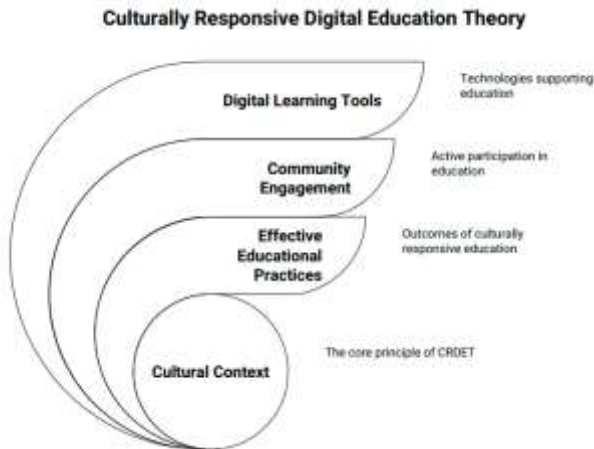
Virtual reality (VR) technologies are being used more and more in indigenous culture preservation initiatives to record and disseminate cultural knowledge systems, sacred sites, and traditional practices. Cultural traditions, the preservation of sacred knowledge, and community consent processes must all be carefully taken into account for these uses (Tan, S. C., Chan, C., Bielaczyc, K., Ma, L., Scardamalia, M., & Bereiter, C., 2021, p-

2243-2266).

Collaboration between technology developers, cultural experts, and community knowledge holders is necessary to create VR educational content that is sensitive to cultural differences. Effective implementations respect cultural values while utilizing technology to improve cultural education and preservation.

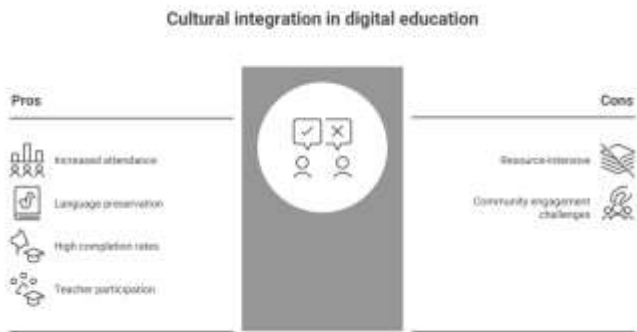
Theoretical Framework: Culturally Responsive Digital Education Theory (CRDET)

This study is based on the Culturally Responsive Digital Education Theory (CRDET). This theory states that when creating and using digital learning resources, the learners' culture must be taken into account. We cannot just assume that digital tools are neutral, according to CRDET, as this could lead to the omission of important local knowledge, customs, and values. It is based on some important educational ideas and sees education as a part of a community's culture.



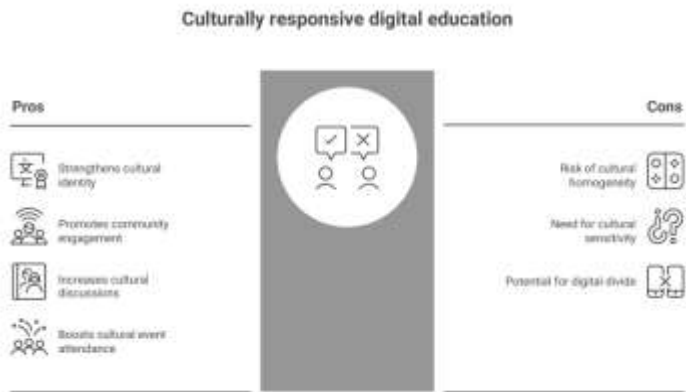
It is evident from global digital education initiatives that culture is crucial. For instance, the Indigenous Yolŋu language

and stories were incorporated into their digital content in Australia's Northern Territory. More people began using the language (41%), and student attendance increased significantly (82%). They also gathered a number of stories and words. This demonstrates that having content that fits the culture and involving the community are more important than just the technology. In South Korea, they ensured that their digital education adhered to their cultural norms. This resulted in high student completion rates (94%) and teacher participation (96%). On these culturally appropriate platforms, people spent a lot more time. Having the best technology is not as important as cultural fit. CRDET aims to transform the entire system, including the laws, the content, and the way we implement things. It is not just about how we teach. It states that laws are necessary to ensure that communities are consulted, that cultural effects are taken into consideration, and that people are assisted in adjusting to changes.



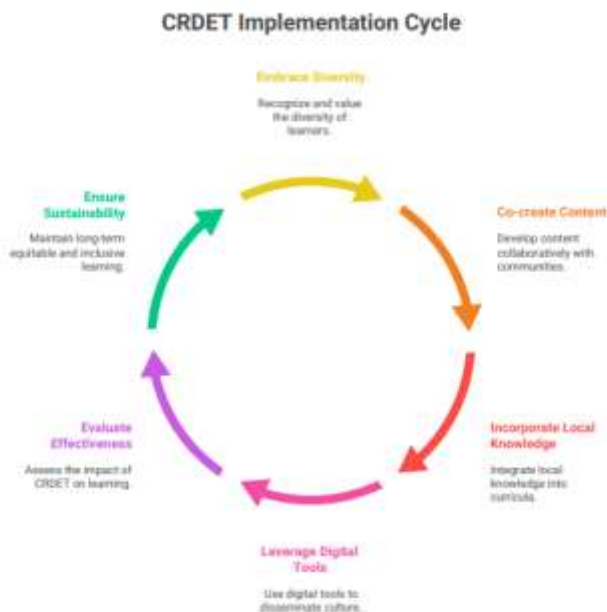
This strategy makes sound financial sense in addition to being morally correct. South Korea, a global leader in digital education, spends a small amount per student, while Australia spends a considerable amount over a number of years on remote

education attendance. In the long run, digital education becomes more beneficial and less expensive when culture is taken into account. Additionally, the data demonstrates that cultural sensitivity fosters interpersonal relationships. Due to the digital content, parents in the Northern Territory reported having more conversations with their kids about their culture. Additionally, they observed that when they included digital content, more people attended cultural events. This supports CRDET's assertion that culturally responsive digital education fosters interpersonal relationships and fortifies cultural identity.



People's varied reactions to tools show how risky it is to assume that everyone is the same. In South Korea, 94% of digital content with cultural components was completed, while 73% of regular content was completed. According to CRDET, digital technology must respect people's cultures rather than ignore them. CRDET essentially changes how we think about better education. The objective is not to find digital solutions that can be used everywhere. It is about accepting individual differences and using technology in a way that is inclusive, equitable, and responsible. It means using digital tools to promote culture,

integrating local knowledge into our lessons, and collaborating with communities to create content. We make sure that our online learning environments are advantageous, scalable, fair, inclusive, and long-lasting by utilizing CRDET.



CONCLUSION

Cultural Diversity and International Digital Education Standards

Concerns regarding the preservation of cultural diversity versus cultural homogenization are brought up by the creation of international digital education standards. Standardized approaches carry the risk of marginalizing culturally specific knowledge systems and educational practices, even though they have the potential to increase efficiency and interoperability.

Frameworks for effective global standards take cultural diversity into account while setting minimal standards for quality. This calls for adaptable implementation guidelines that preserve standards for educational efficacy while permitting cultural adaptation. Instead of enforcing cultural uniformity, the difficulty lies in developing international frameworks that promote cultural diversity. To guarantee inclusive and culturally aware global standards, this calls for constant communication between cultural communities, international education institutions, and technology developers. The adoption, adaptability, and efficacy of technology in international educational environments are significantly influenced by culture, according to a critical analysis of cultural influences on educational digitalization. Cultural fit is frequently more crucial for success than technical skill alone, as successful digital education initiatives repeatedly show.

Evidence from a range of cultural contexts shows that successful digitalization complements existing cultural educational practices rather than replaces them. Examples include the integration of indigenous knowledge systems with digital tools in Australia's Northern Territory and the preservation of traditional hierarchies within digital frameworks in South Korea. To achieve this, culturally responsive design and implementation strategies must take the place of the myth of culturally neutral technology.

According to significant findings, the adoption of digital education necessitates authentic community engagement, a deep comprehension of culture, and adaptation strategies that uphold local values while fostering technological literacy. The most successful programs view cultural diversity as a strength for

innovative instruction rather than as a problem that needs to be solved.

Cultural sensitivity, community ownership, and adaptable implementation strategies that take into account various cultural contexts must be given top priority in future developments in digital education. This is an opportunity as well as a challenge. Future research on how culture affects learning, continued dialogue between cultural communities and tech developers, and a dedication to developing digital educational systems that honor rather than minimize human cultural diversity are all essential. To fully achieve the potential of educational digitization to improve learning outcomes and preserve the rich cultural heritage that characterizes human educational traditions around the world, such culturally aware approaches are required.

A Request for Action: Promoting Culturally Sensitive Digital Teaching Methods

The evidence in this analysis calls for immediate action from cultural communities, lawmakers, tech developers, and educational leaders worldwide. South Korea's 96% teacher participation rate and Australia's Northern Territory's 82% increase in student attendance offer quantitative proof that culturally responsive digital strategies not only enhance educational outcomes but also promote cultural identity and community cohesion. The advancement of global learning, educational equity, and cultural preservation all depend on this; it is not merely a scholarly observation (Tzima, S., Styliaras, G., Bassounas, A., & Tzima, M., 2020, p-9416).

The Imperative of Education and Morality

At this pivotal moment, digital technologies can either serve as tools for educational inequality and cultural homogenization or as tools for cultural celebration and increased educational accessibility (Vedpathak, M., & MITHARI, P., 2024, p. 753-759). We still have a choice, but the window for action is closing. The current patterns of educational technology development, which are dominated by culturally-neutral approaches and one-size-fits-all solutions, routinely marginalize different learning traditions and knowledge systems that have sustained human communities for millennia.

The Northern Territory program's collection of 8,700 Yolŋu words and 247 traditional stories shows cultural survival in the digital age, and it goes beyond simple statistics. Given that 89% of students demonstrated improved retention of cultural knowledge while simultaneously developing digital literacy, we can see how technology has the potential to enhance rather than replace cultural wisdom.

Resolving the Cultural Educational Displacement Crisis

One unspoken crisis facing educational systems worldwide is the systematic replacement of culturally-based learning approaches with standardized digital solutions that ignore local knowledge systems, learning preferences, and community values. This displacement is not the result of malicious intent, but rather of the notion that technology can be culturally neutral. The evidence demonstrates that this assumption is false and harmful.

The 41% increase in intergenerational language use among Northern Territory families participating in digital

education programs shows that technology can enhance rather than diminish cultural transmission. We can see that digital tools are reaching their full potential—bringing generations together through shared learning and cultivating the skills needed for success in the future—given that 78% of parents reported having better cultural conversations with their children.

The Social and Economic Argument in Favor of Cultural Responsiveness

Beyond ethical considerations, there is a compelling financial case for culturally sensitive digital education. South Korea's investment of \$477 per student achieved sustained global educational leadership, while Australia's Northern Territory program spent \$6,408 per student over eight years to achieve the highest sustained attendance improvement in remote schools.

Test results are greatly outweighed by the advantages of both investments, which include improved community development, cultural preservation, and social cohesion. Decisions regarding cultural alignment can result in the gain or loss of millions of learning hours, as evidenced by the completion rate difference between traditional digital content (73%) and culturally-integrated gaming modules (94%). Cultural relevance can increase learning time voluntarily rather than through compliance mechanisms, as demonstrated by the "Dungeons & English" platform, which achieved 47-minute average session times compared to 23 minutes for conventional software.

By raising academic performance, lowering dropout rates, and bolstering social capital within the community, these efficiency gains result in significant economic benefits. Culturally responsive education is demonstrated by the 67%

increase in attendance at local cultural events that include digital elements.

Strategic Needs for Execution

Digital education that is sensitive to cultural differences necessitates prompt action from various sectors and levels of influence. Legislation that puts cultural adaptation ahead of technology standardization must have the support of education leaders. Instead of aiming for one-size-fits-all technology purchases, this entails investing funds in the creation of cultural content, community engagement, and locally relevant teacher training.

Lawmakers need to understand that regulations pertaining to educational technology are cultural laws that have a significant impact on social justice, community identity, and knowledge preservation. Cultural responsiveness must be a fundamental requirement, not an elective, when developing standards for digital education. This calls for legislative frameworks that mandate all publicly funded educational technology initiatives include community consultation, cultural impact assessments, and local adaptation support.

It is the duty of technology developers in particular to provide instruments that promote cultural diversity rather than impede it. This necessitates significant adjustments to design procedures, the makeup of the development team, and market priorities. Instead of consulting with cultural experts, community representatives, and indigenous knowledge holders only once, technology development teams should do so on a regular basis.

International development agencies and funding organizations need to shift their investment priorities to

culturally sensitive strategies that show both cultural preservation and educational efficacy. The data indicates that pursuing these two goals in tandem, rather than as conflicting priorities, produces better results and reinforces one another.

Creating International Networks for Technology in Cultural Education

The isolated success of individual projects, such as Australia's Northern Territory initiative and South Korea's digital integration, must develop into coordinated international networks that exchange knowledge, tactics, and resources across cultural boundaries. Cultural communities around the world provide invaluable insights for developing educational technologies that support a variety of learning traditions while enhancing contemporary capabilities.

For cultural communities to successfully implement digital education programs, international educational organizations must encourage knowledge exchange. Indigenous communities, cultural minorities, and traditional societies should be connected through the Traditional Knowledge Digital Education Network to exchange tactics, materials, and results. While guaranteeing adherence to cultural customs and knowledge sovereignty, this network would expedite development.

To promote the development of culturally responsive educational technology, universities and research institutions must set up interdisciplinary programs that bring together technologists, educators, anthropologists, and community knowledge holders. Theoretical frameworks and technological advancements that respect cultural knowledge systems and direct future development should result from these partnerships.

Quick Steps for Leaders in Education

Culturally sensitive digital strategies must be promoted and implemented swiftly by educational leaders at all levels. To find areas of alignment and strengths, school district administrators should conduct cultural audits of their current technology programs with community members. All educators who work with technology integration are required to complete cultural responsiveness training as part of their professional development programs.

Cultural responsiveness must be incorporated into teacher preparation programs as a crucial skill for educators working in the digital age. This entails cultivating abilities in cultural content integration, community engagement, and adaptive technology use that upholds regional educational traditions while fostering technological literacy.

Collaborative research projects that promote the goals of cultural preservation and educational efficacy should be developed by higher education institutions and cultural communities. Community-controlled research that advances regional priorities and broadens our understanding of culturally responsive education globally should be prioritized in these collaborations.

The Goal of Revolutionized Futures in Education

Imagine school systems where software developers and community elders work together to design learning platforms that respect the wisdom of ancestors while educating students for global citizenship; where digital tools record and share traditional knowledge while enhancing modern capabilities; and

where technology enhances rather than diminishes cultural wisdom.

This vision is achievable, as evidenced by programs that achieve 96% teacher participation, 89% retention of cultural knowledge, and 263% increases in documented traditional vocabulary. These results mark the start of change rather than its conclusion.

Our shared commitment to ensuring that technological innovation promotes rather than diminishes human diversity, that digital advancement aids in cultural preservation, and that educational advancement integrates rather than excludes the wisdom traditions that have sustained human learning for millennia will shape the direction of education in the future.

The Immediacy of Right Now

Every day that culturally responsive digital education strategies are not used, communities are weakened, students miss out on opportunities, and cultural knowledge is endangered. Decisions made today regarding educational technology will affect learning environments for decades to come because of how quickly technology is developing.

Traditional languages could be extinct, cultural knowledge holders could age, and community learning practices could be abandoned if we don't take decisive action to incorporate them into digital educational futures.

We encourage everyone who reads this analysis to spread the word wherever they can about culturally sensitive digital education. Everyone has the ability to guide educational digitalization in the direction of cultural responsiveness and community empowerment, regardless of whether they are

educators, lawmakers, technology developers, community leaders, or concerned global citizens.

Either we adopt culturally responsive approaches that improve educational outcomes while preserving the cultural diversity that contributes to human civilization, or we keep pursuing culturally-neutral educational technologies that reinforce inequality and cultural displacement. All we need to do is muster the will to follow the evidence.

Future Suggestions

While addressing the methodological and contextual limitations inherent in current knowledge, future research must place a high priority on community partnerships, long-term impact assessment, and useful implementation guidance. The field can only progress toward truly inclusive and successful digital education systems that support both educational advancement and cultural preservation goals with such thorough, culturally grounded research.

The way forward necessitates a persistent dedication to research methodologies that respect cultural diversity and provide solid evidence for decisions about practice and policy. Nothing less than our most careful, thorough, and culturally sensitive research efforts is required given the stakes: educational equity, cultural preservation, and the advancement of global learning.

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**An Interface between History and Literature in *Anil's Ghost*
by Michael Ondaatje**

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Abstract

“Sri Lankan writing in English came of age only in the 1980s,” (304) says Jaina C. Sanga in *Modern South Asian Literature in English: An Encyclopedia*. Yes, it is true. Though English became the dominant language in Sri Lanka before her independence, there had been only few literary productions till the 1980s. Sanga observes the causes of it as: “for a long time it [English language] was seen as markedly a language of the elite, and therefore, the experiences delineated by writing in English were considered to be outside the indigenous experiences deemed typical of the country” (*Modern South Asian Literature in English: An Encyclopedia*, 304-305). There were only countable number of literary compositions till the mid-1970s. During the 1980s, some writers espoused civil war and its consequences in their works. Michael Ondaatje is one such author who presents its repercussive effects of the civil war in his novel, *Anil's Ghost*. A collection of interpretations of the novel are available hitherto, exploring various leitmotifs. This paper identifies the inter-twining nature of history with literature which has not been brought out so far. By doing so, this paper proves that history and literature are inseparable as history serves as an interface to literature.

Key Words: Sri Lanka, indigenous, civil war, interface, history, literature.

Full Paper

Positioned at the tip of the Indian peninsula, the Democratic Socialist Republic of Sri Lanka has rich cultural heritage with many ethnic communities. It has close cultural, religious and linguistic association with India. It is known for its beaches, waterfalls, wild life, tropical forests, spices and tea. Nirmanusan Balasundaram in his *Afro-Asian Conflicts: Changing Contours, Costs and Consequences* affirms the inimitable features of Sri Lanka as “One country, one sovereign state and one nation, but with two languages (Sinhala and Tamil), three main ethnic groups (Sinhala, Tamil and Muslim) and four religious practices (Buddhism, Christianity, Hinduism and Islam)” (129). It became the land of ethno-political conflict-ridden zone during the post-independent era. The country witnessed ethnic conflict for nearly three decades, leaving millions of people as refugees within and outside the country. The country was devastated by ethnic tension between the dominant ethnic groups, namely, the Sinhalese and the Tamils. The uncertainty prevailed at the time of the civil war and the life of the people was at stake till the end of the civil war in 2009.

Michael Ondaatje’s *Anil’s Ghost* records how the ethnic conflict in Sri Lanka made ordinary people victims. It explores the investigation of a Sri Lankan anthropologist Anil Tissera who specialises in forensic science, along with Sarath Diyasena, a native archaeologist. The ethnic clash, the inerasable incident in history in the context of any country, mediates with literature and acts a narrative frame. This is more pertinent to Sri Lanka. Joanne Lipson Freed, in her “Invisible Victims, Visible Absences: Imagining Disappearance for an International Audience” upholds this view that the “fictional narratives are free to fill the gaps and silences in accounts of disappearance through the imaginative work of their creators and consumers” (*Ariel*, 41). As in the words of Joanne Lipson Freed, *Anil’s Ghost*

demonstrates “the representational frames that allows the disappeared to become legible as victims to international audiences are predicted on constitute silences and exclusions” (*Ariel*, 41).

Amil and Sarath resume their project when the country is at turmoil politically and also the ongoing ethnic clash. Geetha Ganapathi, in her “Fathoming Private woes in a Public Story – A Study of Michael Ondaatje’s *Anil’s Ghost*” writes about the composition of the novel: “Plunging into the depths of history, art, language, life, death and truth, Ondaatje comes back from his perilous experience with a shining piece of wisdom for our troubled times” (*The Literary Criterion*, 46).

Anil’s Ghost collates the intensity of the ethnic clash (civil war) and the uncertain life of all ethnic groups of Sri Lanka during the 1980s and the early 1990s. The unpredictable situation is well observed by Anil, the protagonist, that the war “was going on long before . . . Every side was killing and hiding the evidence. Every side. This is an unofficial war, no one wants to alienate the foreign powers” (*Anil’s Ghost*, 13). Anil’s perception is central to the argument as it serves the argument of the novel. During the course of the war, abduction and extrajudicial killings were prevalent in the country. On this point, Shobasakthi, a Sri Lankan Tamil diasporic writer from France, responded to an email query to P. Veerasamy about the 1977 and 1981 ethnic riots and the motives of them as: “They are the planned violent and brutal activities of the Sri Lankan government to restrain the Tamils through genocide. The Ministers of the Government presided over them. During the 1981 ethnic riot the police burnt 90000 books of our Jaffna library” (Shobasakthi, 19 Jul 2016).

In *Anil’s Ghost*, Anil exposes the ruthless nature of the killers because they slaughter the people in the course of the civil war and the bodies are “burned beyond recognition . . . No one

can tell who the victims are” (*Anil’s Ghost*, 13). Anil’s findings resolve that these are the extrajudicial executions mostly. She arbitrates “Perhaps by the insurgents, or by the government or the guerrilla separatists. Murders committed by all sides” (*Anil’s Ghost*, 14). Sarath’s study determines that these were of a recent dig near Bandarawela. These executions are done not in the private buildings but in the site, which is under the surveillance of the government. Anil is shocked to see the bones from “the monk’s burial maiden, in the government archaeological preserve” (*Anil’s Ghost*, 16) to which the entry for common man is prohibited.

From the year 1983 onwards, there had been continual emergency, racist attacks and political killings in Sri Lanka. Ondaatje asserts it: “the terrorism of the separatist guerrilla groups, who were fighting for a homeland in the north. The insurrection of the special forces was against both of them” (*Anil’s Ghost*, 38-39). Many bodies were disposed by fire, in rivers or in the sea and “It was a Hundred Years War with the modern weaponry, and backers on the sidelines in safe countries, a war sponsored by gun and drug-runners” (*Anil’s Ghost*, 39). The political enemies also financed to the arms deal. So, Ondaatje registers that “the reason for war was war” (*Anil’s Ghost*, 39). As such, the casualties were innumerable. M. Preetha, in her “The Socio-Cultural Scenario of Postcolonial Sri Lanka: Michael Ondaatje’s *Running in the Family* and *Anil’s Ghost*” comments on the casualties of the ethnic war:

“The war destabilised the social conditions of the country. The society underwent a significant transition from an innocent time towards the perpetual waves of violence seeping across the country. Ondaatje estimates that during the first two years of the war more than three hundred casualties were brought in as a result of the explosions but when the weapons improved, the casualty

rate also reached its pinnacle” (*Indian Journal of Postcolonial Literatures*, 196-197).

Anil and Sarath discover four skeletons in the Bandarawela regions of government protected archaeological preserve and label them, TINKER, TAILOR, SOLDIER and SAILOR. She presumes that ‘Sailor’ must be political murder victim. The SAILOR is a very recent one and “It was buried no more than four to six years ago . . . There are thousands of twentieth-century bodies” (*Anil’s Ghost*, 48).

When they take the skeletons for the investigation to Palipana, the epigraphist, he cautions them that “Ah – a secret against the government. Or perhaps a government secret” (*Anil’s Ghost*, 82). He detects that “he was killed and then buried. Then he was dug up, moved to a new location and buried again. Not only do the trace elements of soil not match, but we suspect the pollen that adhered to him before he was buried comes from a totally different region” (*Anil’s Ghost*, 85).

Gamini, Sarath’s brother, warns them that “It’s the wrong time for unburials. They don’t want results. They’re fighting a war on two sides now, the government (128). He asks them to be more vigilant: “Just be careful. Nobody’s perfect. Nobody’s right. And too many people know about your investigation” (*Anil’s Ghost*, 128).

Anil reconstructs SAILOR’s skull and articulates that SAILOR is “they buried him temporarily in wet earth . . . They could have buried him in paddy field, then taken him later to the restricted area and hidden him there to disguise the fact that he was contemporary . . . I think the original burial was in the general vicinity . . . Ratnapura district” (*Anil’s Ghost*, 148).

The novel repeatedly echoes the historical civil war and its effects on the people: “Half the world . . . was being buried, the truth hidden by fear . . .” (*Anil’s Ghost*, 152). Sarath knows the danger of digging our truth that it is a flame against a

sleeping lake of petrol. He sees that truth is “broken into pieces and used by the foreign press alongside irrelevant photographs. A flippant gesture towards Asia that might lead, as a result of this information, to new vengeance and slaughter” (*Anil’s Ghost*, 153).

The novel records the merciless murder of the 1980 “so many heads stuck on poles here . . . early in the mornings, somebody’s night work, before the families heard about them and came removed them and took them home. Wrapping them in their shirts or cradling them. Someone’s son” (*Anil’s Ghost*, 180). Many people disappear – individual and the whole family in 1989 “forty-six students attending school in Ratnapura district and some of the staff who worked there disappeared” (*Anil’s Ghost*, 181). Ananda’s wife, Sirissa also disappears at this time and she is not found even after three years.

Rockwell D Hunt in “Aspects of the Study of History” elaborates recording the aspects of history by the Greeks that the Greeks “did not regard history as the simple narration of what had happened in the past, but rather as a certain arrangement of a narrative of events so as to bring out certain ideas” (*Annual Publication of the Historical Society of Southern California*, 5). In *Anil’s Ghost*, Ondaatje narrates a series of incidents of the past. They are not the ordinary incidents, but the incidents of international importance as every group which is supposed to be the dominant violated the norms and involved in extra judicial killing of numerous lives.

When Anil is ready to tip off the secrets and the truth about Sailor and the violation of human rights, Sarath warns her to be careful because “political secrets are not powerless, in any form” (*Anil’s Ghost*, 255). She says “truth comes finally into the light. It’s in the bones and sediment. It’s in character and nuance and mood. That is what governs it in our lives, that’s not the truth” (*Anil’s Ghost*, 255). But Sarath says quietly that it is the

truth for the living. They validate Sailor as Ruwan Kumara, a toddy rapper from Plumbago village. An abducted doctor, Dr. Perera also directs her to stop her investigation further because “her work good, but unsafe” (268). At one point, Anil is tensed and says “I think you murdered hundreds of us” (*Anil’s Ghost*, 269).

Sarath instructs Anil to conceal the truth and also to nullify her investigation, “Think carefully, Miss Tissera, don’t just theorize” (*Anil’s Ghost*, 270) . . . the skeleton you have here is likely to be hundred years old” (*Anil’s Ghost*, 270-71). But she claims that the skeleton that she has seized “died less than five years” (*Anil’s Ghost*, 271). She is unable to put up with their indifferent treatment towards truth and shouts, “some government forces have possibly murdered innocent people” (*Anil’s Ghost*, 271-72). She becomes enraged and sounds out: “The skeleton I had was evidence of a certain kind of crime. That is what important here. “*One village can speak for many villages. One victim can speak for many victims*” (*Anil’s Ghost*, 272). It’s an evidence for the readers to understand interface between history and literature. Manav Ratti, in “Michael Ondaatje’s *Anil’s Ghost* and the Aestheticization of Human Rights” mentions Val Daniel that “[e]very story in the press has somewhere buried in it a key sentence, intended to provide a fundamental bit of information, without which, it would seem, the story as a whole will not be adequately understood” (*Ariel*, 124).

Kabir Mohammed, in his “The Role of History, Historiography and Historian in Nation Building” quotes C.C. Ifemejeto reinstates the role of history as:

“a body of knowledge about the past, especially the past of the act of man in society consists of facts ascertained through honest inquiry as well as influence,

interpretations and generalizations arrived at by the historian and are available in the form of true record on paper or in the memory of man” (*International Journal of Humanities and Social Science Invention* 50-51).

Ondaatje too in *Anil's Ghost* makes a sincere inquiry into the past incidents, interprets carefully and makes the readers known about the hidden realities.

Towards the end, Anil is warned by Dr. Perera to give up her investigation and is given her “forty-eight hours.” (*Anil's Ghost*, 272). She is ordered to “Leave the skeleton you were talking about and go with Mr. Somasena to the lobby, he will escort you. You will have to sign back all your research before you leave. I must warn you of that. This skeleton will be waiting for you in the front entrance in twenty minutes” (*Anil's Ghost*, 272).

Finally, Gunasena drops her in the port. Anil gets Sailor and her tape recorder which whispers:

I'm in the tunnel of the Armoury building. I have just a moment. As you can tell, this is not any skeleton but Sailor. It's your twentieth-century evidence, five years old in death. Erase this tape. Erase my words here. Complete the report and be ready to leave at five tomorrow morning. There's a seven-o'clock plane. Someone will drive you to the airport. I would like it to be me but it will probably be Gunesena. Do not leave the lab or call me (Anil's Ghost, 281).

Anil is not permitted to do any violations committed by the government. So, she is advised to leave the place immediately.

Conclusion: Thus, the novel presents the historical incident with fictional characters. Ondaatje has not mentioned the causes of the ethnic clash but minutes the danger in conducting any kind of

investigation. Saradha Balasubramanian, in her “History as a “Well-Told” Lie” writes that “Ondaatje too write[s] the histories in an attempt to affirm the capacity of art to imaginatively restore the past” (85). He handles civil war with a view to reveal the authenticity of history. His motto was not to find fault with the warring parties and at the same time he exposed the suffering of the innocent people. Thus, it could be concluded that literature and history meet in order to produce work of art for the readers.

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**Sovereign's Rule of Exception and Bare Life in Benjamin's
*The Goat Days***

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Abstract

Control and subjugation of people are the prominent characteristics of sovereign power. Sovereign figures use several methods to control and subjugate people. The process of subjugation reduces the life of humans into bare life and becomes the object of authoritative people. This paper analyses how Benjamin's *The Goat Days* narrates the pathetic life and sufferings of an immigrant from Kerala, tormented in the middle of the desert in Saudi Arabia. It is the quintessence of biopolitics: it explicitly discusses the dominance and strategies of sovereign power. This paper attempts to apply the theoretical concepts and arguments of Giorgio Agamben's "bare life" and "space of exception" formulated in his work *Homo Sacer* (1995). Through which it examines how authorities utilise the space as an invisible prison to control individuals and at the same time examines how rules are imposed on various levels.

Keywords: Bare Life, Biopolitics, Goat days (Aadujeevitham), Homo Sacer, Identity, Space of exception.

1.0 Introduction

Aadujeevitham (2008) is a novel written by the Indian author Benjamin, who is a Malayalam novelist and screenplay

writer. His original name is Benny Daniel, a Bahrain based writer. He lived in Bahrain and then settled in Kerala. He wrote thirty books in different genres and won the Kerala Sahitya Akademi Award (2009) for his novel *Aadujeevitham*. His writings reflect contemporary social issues in society. This novel was originally written in Malayalam; later it was translated into English and titled *The Goat Days* (2012) by Joseph Koyippally. The core idea of this novel is based on a real-life incident that occurred in the state of Kerala, India. This is the true story of Muhammad Najeeb, a resident of Kerala, India, who was imprisoned at Sumesi Prison in Saudi Arabia. Benyamin says, “when I heard his tale, I knew this was the story I was waiting to tell the world and I knew this had to be told. Usually, we only hear of stories of success from the Gulf. But I wanted to talk about the many who lead lives of suffering and pain.” (qtd in *Medium*). *The Goat Days* explains the deceptive life and the story of survival of an immigrant from Kerala. It describes the sufferings and imposed violence on an individual in the desert of Saudi Arabia under the control and surveillance of an Arab master. At the end of the novel, Najeeb escaped with the help of his friend and coworker in the masara (goat farm), which is under the control of Arbab, the Arab master.

2.0 Giorgio Agamben and Biopolitics

Giorgio Agamben is an Italian professor, translator and philosopher, formulated the critical concepts of “space of exception” and “bare life” in *Homo Sacer* (1995). His concept falls under biopolitics; he extended it through the combination of Topology and a quasi-ontological approach. Furthermore, he was influenced by Foucault's concept of biopolitics. Foucault notes that biopolitics is “an explosion of numerous and diverse techniques for achieving the subjugation of bodies and the control of populations” (*The History of Sexuality*, vol.1, 140).

Sovereign power uses human life as the basic substance in the political domain for the survival of the sovereign. In Benjamin's *The Goat Days*, the Arab master, Arbab is the sovereign figure who uses the place as a domain and creates his own system to subjugate people. Najeeb is the victim, who lost his life in the desert and suffers in the hands of Arbab. Arbab considers Najeeb's life almost as a non-existent being. This state of mere biological existence of Najeeb is considered as "Bare life" and the circumstances procured by the Sovereign to achieve it are considered to be "Space of Exception". Agamben views human life as "not a medical and scientific notion but a philosophical, political and theological concept." ("Absolute Immanence" 239).

3.0 Space of Exception

Agamben's idea of exception employs the topological approach in the concept of biopolitics, which links marginal space and human life. He defines the exception as the implementation of the exceptional rule in a particular space within the boundary of the sovereign. This technique creates a law that makes fuzzy in a particular space and distinguishes the legal existence of subjects. The space of exception is a devolution of human rights. It separates the disobedient of the authoritative from the obedient or from the rest of the species. Sovereign power can authorise the rule of exception within the boundary of the authoritarian. He states that the sovereign is the absolute authority "Sovereign is he who decides the exception." (*The Omnibus Homo Sacer*).

The space of exception is a territorial trap and the legal rules do not fit into the rule of exception. Carl Schmitt highlights that the sovereign's exception "is more interesting than the rule. The space is systematically constructed in the landscape under

the control of sovereign. The rule proves nothing; the exception proves everything” (*Political Theology* 15). It is a closed zone in the domain of the authoritative in terms of legal rights of the subjects. It is a “zone of indistinction” that gives the sovereign a position over the law (*The Omnibus Homo Sacer*). Agamben focuses on the sovereignty’s rule of exception implemented over the life of a human. This “power over life” is the fundamental element of sovereign power (*Society Must be Defended* 279).

3.1 Space as a Prison

The Arabian Desert is the domain of Arbab, the Arab master who controls the masara. He uses every opportunity to control not only Najeeb but also the scary figure. The desert itself, Najeeb feels, is a prison without walls. Agamben says that the space itself is the domain, the “space of exception”, it is a “hidden matrix” controlled by the sovereign (*The Omnibus Homo Sacer*). Najeeb compares the place that he bound with goats, “Unlike in our place, where vines spread through rocks and sand, there was not a speck of green here. It was sterile waste land.” (Benyamin 74). During the daytime, the desert punishes him with extreme temperatures. He describes the barren land, which did not have a single tree to take rest, he could not find a shadow to stand, “After, that for a brief while, it was rest time. I searched all around for a little shade, but it was nowhere to be found.” (Benyamin 81). During the night, the weather punishes him with extreme cold. To escape from the extreme cold, he stays and sleeps among the goats. He explains, “... Whenever the cold pierced through the blanket to maul my body, I would go to the masara and lie there embracing the sheep. I spent the winter as a sheep among the sheep” (Benyamin 140). Arbab never allows Najeeb to sleep inside his shelter, he does not even provide proper blankets. After Najeeb escaped from the

farm, he decided to surrender to the police and stayed in the Arab prison. In the prison, Najeeb stayed with eighty Indian workers who escaped from their working place; they ran away without any legal documents. The runaway workers are afraid of the weekly parades in the prison, because of the Arab workers' visits and search for them. While Najeeb feels the prison is the luxurious place compared to masara in the desert, he expresses that "can you imagine how much suffering I must have endured to voluntarily choose imprisonment" (Benyamin 12).

3.2 Sovereign's Behaviour

In this novel, Arbab projects himself as a sovereign figure. His primary task is to subjugate Najeeb through regulation and supervision, ensuring he works in the masara under his control. The process of producing bare life through controlling and regulating the subject is without any emotion. Najeeb was a worker in a sand mining in Kerala, he was not aware of taking care of goats. He is forced to do this job, he stumbles "Rows of goats, undulating like a sea', in addition to filling water, hay, wheat, fodder in the containers for goats and camels" (Benyamin 59). Arbab intentionally practices dominance and hierarchy in the space, he stays in a separate and comfortable place in the masara. He never allows Najeeb to get inside his shelter. He always orders Najeeb to stay outside his shelter. He gives importance only to his goats, water, food and medicine. Arbab's primary preference is to get milk from the goats, he never gives importance to Najeeb. Najeeb expresses that Arbab "cared only about my work, not my discomforts." (Benyamin 94). Najeeb's complaint or request only receives punishment from the sovereign, who lets him starve for a few days, which also becomes a new authoritative rule. When Najeeb is unable to do work because of his illness, his duties are not

changed, he expresses, “Fatigue sunk in, and my running stomach made it worse. I complained to the scary figure and to the Arbab, nevertheless, my workload was unaffected.” (Benyamin 94). Furthermore, Najeeb asks for water to Arbab, only to be threatened by him with a thrust from the double-barrelled gun. Arbab treats Najeeb as a lifeless object in the masara. Agamben argues that in modern biopolitics, the sovereign has the authority to determine the value or non-value of life. In the process of creating bare life, “The subject has no rights to live or die, but to accept the will of the sovereign.” (Jawahar 34). With the approaches and dominance of Arbab, Najeeb accepts himself as a subject of obedience to the Arbab “I ate the wheat with the salt... I slept in the masara with the goats. By then I had indeed become a goat” (Benyamin 150). From Arbab's perspective, Najeeb is the subject and has no choice but to obey him.

4.0 Bare Life

Agamben's concept of space of exception procures bare life in a closed structure and is “entirely controlled by man and his technology” (*The Omnibus Homo Sacer*). The production of bare life switches humans into the object of politics. The bare life is the significance and value of human life reduced into a mere biological existence. In other words, bare life is a state of life, which explains the withdrawal of political and legal rights from people by the will of the sovereign. Bare life is the term that originated in German for “cut in life”; it distinguishes the political life and biological life (*The Dictionary of Human Geography* 226). He defines the biological life “zoé,” which every living creature has, and the political life “bios,” which is the choice of existence, experience, and contribution in the social and political context. (*The Omnibus Homo Sacer*).

The bare life makes the subject frangible to violence and dominance of authoritative without any rights. The implementation of the rules creates a boundary not only at the geographical level, but also at the psychological level of human beings. “It now dwells in the biological body of every living being.” (*The Omnibus Homo Sacer*). This technique is an extreme method of subjugation, both mind and body, through which the sovereign can easily destroy and subjugate any person.

4.1 Isolation

In the production of bare life, isolation is the first strategy to subjugate both the individual and people. In this novel, when Najeeb reaches the masara in the desert, his dream to become rich collapses. He doubts his freedom because of the dominant attitude of Arbab and prays to god about his situation, “My Lord, where have I ended up?” (Benyamin 55). He could not escape from the masara because it exists in the middle of the desert. “By then, ... I should escape before that happens. Where to? Anywhere. How? However. Nobody will see me. If I run ... how long will I run? Which way ...? In which direction? To which place? I don’t know anything” (Benyamin 49). The Arabian desert becomes the invisible prison for Najeeb. He suffers in the circumstances that he cannot control. Arbab isolates Najeeb and his friend Hakeem in the desert and they are forced to work in two different masaras. Hakeem is the only person from Kerala who accompanies Najeeb. After he separated from Najeeb, he was isolated in the desert. When Najeeb feels lonely, a nameless person, a scary figure, tries to communicate with him. The scary figure also captured by Arbab and worked in the masara for many years before the arrival of Najeeb. He speaks a different language, Najeeb cannot communicate with the scary figure, and he cannot express his emotions with the scary figure. He teaches and communicates with Najeeb about

the nature of work and the rules of Arbab through his body language and indications.

Najeeb has no one to speak with, to the extent that he imagines his family members and names them after goats. He thinks of his unborn child, then he names him after a goat and gives special care to the goat,

He was naughty from the beginning. It was his habit to fight with he-goats bigger than him... I would take water from the tank and clean his wounds and apply on them the medicine the arbab had. Nabeel recognised and returned the special treatment I gave him. (Benyamin 111)

He imagines playing with Nabeel “I saw fumes coming out of its nostrils. The next moment, it charged at me, and without giving me a chance to evade, hit me right on the chest...” (Benyamin 117). Further, he is waiting for a truck that comes twice a week to fill water and hay for the goats. There is nothing in the desert except rocks and sand. The truck is the only moving thing, the driver is the only person connected with the outside world, he is eager to see things moving in the desert, he says,

My heart would flutter with inexpressible joy whenever those vehicles reached the masara I'd be elated as if some loved ones had come to visit us. I would chat with the goats more than usual. But when those vehicles raising dust faded away, I felt like the world itself had run away from me. Then a heart draining fatigue would come over me. (Benyamin 126).

Najeeb expresses his extreme joy when he hears their voice and meets people in the desert. During the winter, He sees two men who “came to shear the sheep... Filled with the joy of meeting people after a long time, I followed them around like a puppy” (142). This isolation creates a psychological space to prepare him to be the obedient subject to Arbab.

4.2 Agony

Practising physical and mental agony is another strategy that Arbab follows to control Najeeb. In the initial days, Najeeb suffers and refuses the Arabian foods in the desert. He is unfamiliar with Arabian foodstuffs and the proper way to eat them. He adapts himself to the new food type for the Arabian desert “I would dip the khubus in water and eat. I had no difficulty in eating khubus without curry. That had been my diet for many years!” (Benyamin 19). Cleanliness and being hygienic are a part of Najeeb’s life in his native place, because of his culture. In Kerala, he thinks that even drinking coffee before brushing his teeth is unhygienic; in contrast, he could not wash his body properly due to the limited amount of water in the desert.

I had not even brushed my teeth in the morning... I wouldn’t even drink coffee Without first ducking into the river-even when it rained. But that day, for the first Time, I violated all my hygiene rules. I had drunk milk without brushing my teeth. Hunger for one and half days forced me to ignore my habits. (Benyamin 68).

Moreover, Arbab strictly forbids the use of water except to drink. When he searches for water to clean his natural call, the scary figure indicates sand and stone to wipe and clean his body.

5.0 Conclusion

Benyamin's novel *The Goat Days* is the perfect example of the concept of biopolitics. This novel highlights the sufferings and pain of Najeeb at the hands of an Arab master. This paper focuses on the tactics and approaches employed by the sovereign character to control people. In this novel, Arbab, practices numerous strategies including physical violence to subjugate Najeeb. His behaviours are controlled and regulated throughout the novel. Najeeb the protagonist becomes the subject of the Arbab. Through the strategies of Arbab, Najeeb himself reduce his status from human to goat. He exists as a creature in the masara under the supervision of Arbab. With the implementation of the approaches, Arbab establishes his own system of domain. Thus, Benyamin's *The Goat Days* establishes itself as the quintessence of biopolitics. It explicitly discusses the dominance and strategies of authoritative power by demonstrating how people become the subject of the sovereign power.

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**MEMORIES OF PARTITION AND TRAUMATIC
FLUCTUATIONS IN AMITAV GHOSH'S *THE SHADOW
LINES***

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INTRODUCTION:

Trauma as a mental injury, accelerated interest in literary field, especially to trace the aftermath of a dreadful experience. Trauma causes several imbalances, severing the normal life style of the affected individuals. It is a death blow especially to refugees and people who experience displacement. Displacement caused due to partition, and the resulting mental blocks of degenerating effects is discussed by writers who find partition in India as a venomous incident. The works of Amitav Ghosh outline the trauma caused due to partition, explicating the torturous imprisonments, loss of home and property, evil health effects, assaults of various kinds, and alienation from the family. The plight of the victims who suffer from trauma of partition is expressed in a narrative form, enumerating the ambiguity of migration. Distance or evacuation from the native place caused due to partition became a threat, questioning the peace factor of the displaced individuals. These distancing of landscape issues further aggravated identity issues. So the disoriented self of the victims, who encounters partition, experiences pain and displeasure, both undesirable. The troubled memories of the affected characters release emotions of dejection, which are revealed through out in the novel *The Shadow Lines* of Ghosh. This article is a deliberate attempt to trace the evil effects of

partition and the traumatic manifestation that arose in the victims thereafter.

Key words: trauma, mental injury, imbalances, refugees, displacement, partition, migration, identity issues.

TRAUMA:

Trauma, a widespread term that establishes a strong connection in literature, is the key term in psychoanalytic studies. It animated the social problems, focusing on the individual and social health issues. Though the word ‘trauma’ is literally, ‘a wound or simply a physical injury caused by any external agent (Kurtz, editor I), according to the Greek understanding, it is extensively used to denote the emotional or psychological injury rather than focusing on the physical damage caused.

TRAUMA STUDIES:

Based on trauma and traumatic influence in an individual or in a community, the wider theory Trauma Studies came into origin. It focuses on the effects of trauma and the ways of healing. Though trauma studies begin to emerge in the 90s, it existed long before. Prior to its emergence, it has already been extensively discussed in disciplines such as psychoanalysis, the Holocaust, modernism, PTSD issues and in several other areas of science where medication and experimental analysis still prolongs. The originators who pondered over trauma, trauma studies, and the psychological well-being of individuals and society include, Jean Martin Charcot (1825-1893), Josef Breuer (1842-1925), Morton Prince (1854-1929) Sigmund Freud (1856-1939), Herman Oppenheim (1858-1919), Pierre Janet (1859-

1947), Abram Kardiner (1891-1981), Cathy Caruth (1955), Geoffery H Hartman (1929-2016), Shoshana Felman (1942-).

Trauma studies further include discussions on psychological trauma, and the influence of memory in tracing the individual, historical, and cultural identity. It elaborates the nature of trauma as a tumultuous experience that exercises a profound influence on a self's emotional balance and in understanding the outer world. It is the unconscious, later remembered or recollected incidents of a self. Based on these criteria on trauma, works such as *Studies on Hysteria* (1895), *Beyond the Pleasure Principle* (1920), and several other works provide intensive knowledge on trauma and its conceptual discussion in Trauma Studies and psychoanalytic theories. On another aspect, trauma leads to Post-Traumatic Stress Disorder, that turns out to be toxic both for the mind and for a healthy psyche.

On a broader perspective, further explaining trauma, Freud and his associate in *Studies in Hysteria* state that the original threatening event is not traumatic but the remembrance of it intensifies the fear. Though the real incident provides only harm, a comprehensive recollection offers solution to the affected mind through liberation from the harm of the incident. They also explain that the mind remembers the past injury by associating itself with the contemporary incident which is closer to the past injury.

Sigmund Freud goes deeper in *Beyond the Pleasure Principle*, and offers an explanation of how traumatic actions are repeatedly recalled by victims of traumatic incidents, irrespective of its happy or gloomy nature. As a result of this, trauma healing becomes complex. Theorists and medical practitioners trace the violent nature of trauma and the reasons for accumulating

traumatic memories which is one of the endangers prevailing in the society.

Diagnostic and Statistical Manual of Mental Disorders is yet another experimentation based manual that outlines voluminous reasons outsourcing stress such as participation in a military combat, victims of personal conflict, violent attack of terrorists, the tortures experienced in war camps, extending to any endangers of partition, deeply affecting the physical and mental well being. These fearful yet unconscious episodes are often recollected, with powerful remembrance of images or ideas based on that event and are exhibited as nightmares or dreams. The nightmarish repetition of the traumatic events, either it be big or small continuously prolongs feelings of fear and despair, delaying sleep in the affected individual. Most of the times, these feelings are harmless but the victim is supposed to rely on reality to achieve harmony of the body and the soul. A person who is increasingly responsive to these recurrent images and thoughts of insidious experiments fall a victim whereas normal individuals remain balanced.

Trauma in Literature:

Trauma is represented through innumerable characters in literature right from Gilgamesh, who explicitly enumerates the frustration he evinced with the loss of his friend in the battle. The recurrent remembrance of the dead friend disturbs Gilgamesh through painful memories. Even Homer is clear in representing his character Odysseus, in *Odyssey* as a victim of traumatic scenes of the battlefield. Achilles in *The Iliad*, is guilty after losing his friend Patroclus and the traumatic experiences of Achilles, clearly picturise his inability to sleep. Herodotus, the father of history also pens down the irresistible influence of the loss he had seen in wars through the characters.

Plutarch's *Parallel Lives* presents the undeniable absurdities caused due to the intrusive memories of battlefield. The greatest dramatist, William Shakespeare also portrayed one of his characters, Hotspur, in *King Henry IV*, as a survivor of trauma, which could be seen through the monologue of his wife, Lady Percy. It is sourced that Hotspur suffers from solitude, loss of interest towards life, and ambiguity he underwent during the battle. Samuel Pepy's *Diary* draws the picture of The Great Fire of London, the horror and the hazardous consequences.

Among the various reasons outlined for the cause of trauma, partition is the reason for the trauma that befell on the characters in *The Shadow Lines*.

1947 PARTITION AND THE TRAUMA ASSOCIATED:

1947 Partition is one of the worst nightmares thundering the world with indefinite murders, rape, violence, displacement uprooting millions of people from the native homeland. It is a hostile atmosphere lingering between India and Pakistan, and talks of refugee issues, loss of life and property. It also leads to inter generational trauma pestering the posterity leaving negative traits. While people of India were rejoicing the fruits of Independence, Ashis Nandi, the renowned psychologist and critic, expresses in the forward to *Mapmaking* (2011), the cruelties of uprooting, moral degeneration, genocide, necrophilia, and mass violence combined with Indian independence. Nandi is brave in exposing that people adopt 'silence' as their powerful weapon to suppress the pain. Though partition, in historical context, is simply an incident of mass migration, it is marked by violence, thunder, and forcefully converting people into other religion all over India. The literal meaning of the word, 'partition' is a division of something into parts. Partition trumpeted the end of the British Colonialism on

one hand which is a harmonious feeling, hiding the insidious 'divide and rule' policy of the Britishers. Partition came into being with the Britishers dividing Bengal into Western and Eastern in 1905, later leading to the 'Two Nations Theory' cleaving the whole of India and Pakistan into two, deliberately crushing the breath of millions of people belonging to the two nations. The Britishers were solely instrumental in breaking the comradeship between India and Pakistan, in order to escape the wrath of people. Despite freeing India from the clutches of the colonial rule, they lay seeds to enhance the growing dispute between Congress and the Muslim league. They further granted a separate nation to Mohammed Ali Jinnah, divide the regions of Punjab and Bengal, totally invalidating the emotions of the people of Punjab and Bengal. People of India, basically are divided, both physically and mentally diving into deep horror. Tracing generally the altered mind of the people of India and Pakistan, Ghosh drew a map, sarcastically complaining the monstrous rule of the colonizers and trace the trauma of the affected generations that befell on the future posterity as well.

PARTITION AND TRACES OF TRAUMA IN *THE SHADOW LINES*:

The second novel of Ghosh, *The Shadow Lines* which is published in 1988 is complex in its treatment of partition issues that were in vogue on the Bengal border. The impact of the British rule is clearly picturised through the artful narrative of Ghosh. He is particular in narrating the national identity that is put under threat during the colonial rule. He also delineates space and geographical boundaries close to the suffered people that could explain clearly, the world of the intricacies surrounded. In this way, Ghosh also prioritizes the East, celebrating India's culture, language, history, past, human

relationships, and heritage. He paints the aftermath of the Partition on the small scale and discusses the threatening of national identity on a broader level. Besides, he records the chronology of India, at a macro space and Calcutta at a mini space foregrounding the narrative in a non-linear manner, spanning three generations of a Bengali family.

The novel is set in Calcutta, London, and in Dhaka, of three different countries such as India, England, and Bangladesh. The two parts of the novel named, 'Going Away' and 'Coming Home' symbolically suggest how characters move away from the self and finally realize oneself. The unnamed narrator in the novel oscillates through memories of different characters, covering the physical and political borders. Further the story is told in fragments, unraveling both the personal and political histories, enumerating the communal riots, violence that befell, innumerable killing, also adding the mutual understanding that existed between the Hindus and the Muslims, the final erasure of the trust among different religions, and a search for self-identity of people. Ghosh, in the eyes of the narrator, details the riots as the chief reason for the establishment of frontiers.

Besides the non-linear story line, characters in the novel bring forth the trauma embedded in each of them, especially the forceful riots that lead to chaos, death, and destruction of plenty of lives. The characters in the novel were connected together not just because of the familial ties, but based on friendly relationships. Through the lens of Tha'mma, the chief character and the grandmother of the unnamed narrator, incidents closer to the Bengal partition and nationalism are weaved, attributing real life atmosphere to the independent India. The plot focuses on the collective experiences and trauma of the characters placing behind the actual historical events, such as the Second World

War, communal riots in Bangladesh (East Pakistan) and West Pakistan (Pakistan and India) that emerged after partition and freedom movement in Bengal, throwing light on the years, 1963 and 1964. Though the Hindus, the Muslims, and the Sikhs were intimate in the beginning, the frontiers left them with confusions, riots, and rifts, both physically and mentally. These border lines are not real but shadows which lead to personal and national loss. Man made boundaries such as Sir Cyril Radcliffe's The Radcliffe Line is terrific. Indo-Pakistani border lies in the western side of The Radcliffe Line and India- Bangladesh border is in the Eastern side of it. Both Bengal and Punjab suffered heavy loss due to the partition. People belonging to these places are torn apart due to the riots that emerge, leaving behind tussles and deaths, simply for no reason.

To explicate the clashes and partition, Western impact, racial discrimination, and loss of identity, Ghosh gives the novel in two divisions, with the first part, 'Going away' narrating the familial relationships of the Datta- Chaudhury of Bengal and The Price family of London. The narrator's childhood recollection surfaces his traumatic experiences both at a familial level and national level. Tha'mma and Mayadebi are sisters who lead two separate lives, with Tha'mma embracing nativity and Mayadebi declining from it. The narrator, who is the grandson of Tha'mma, is critical of Ila, her cousin and his uncle Tridib's father Shaheb clinging on to European way of life. Tha'mma, the narrator's grandmother also criticizes Tridib's father, Shaheb for his dresses, which are too Western. Even she condemns Ila for having settled abroad, which is not fair. Though Ila was bullied at school with racial slurs, she remains passive and is attracted towards European life style. The class distinction is clearly seen when Ila and Nick look down upon the narrator as he expressed his wonder with fascination about different places. The narrator

has a deep impact claiming to visit London one day. Through Tridib, an imaginative and practical character, the narrator's imaginative fecundity is fostered. One day, he visits London, being inspired by Tridib. Only after experiencing the London life, the narrator reconciles with the unreal expectation that he has developed all these days living at Calcutta. The traumatic narrator realises the real life of his and the other's life being lead by Ila.

The second part, 'Coming Home' picturises, the grandmother of the narrator, Tha'mma, who after retiring as a teacher and head mistress, recollects the past in her ancestral home, as a medication to the future generations to come. It is seen that she hates playing chess and cards, consequently a distaste towards Tridib for his frivolent nature as a 'loafer and wastrel'. (TSL 4) In her view, Tridib is a spoil wasting his dad's money. As for herself, she had been careful to rid our little flat of everything that might encourage us to let our time stink. No chessboard nor any pack of cards ever came through our door; there was a battered ludo set somewhere but I was allowed to play with it when I was ill. She did not even approve of my mother listening to the afternoon radio play more than once a week (TSL 4).

The second section shows the experiences of Tha'mma in Dhaka and Calcutta. She grew up in Dhaka, and later went to Calcutta. After a while, she moved to Dhaka again to take her uncle Shri Goshtobihari Bose back to Calcutta. The changes she evinced in Dhaka made her annoyed. Though she witnessed the family duel between her father and her uncle Jethamoshai, her acute responsibility compels her to bring her uncle to Calcutta to nurse him. Amidst the growing disputes between India and Pakistan, she has to travel from Dhaka to Calcutta. This return

journey of Tha'mma along with Mayadebi, her younger sister, Robi and Tridib, sons of Mayadebi, May Price, the love interest of Tridib, collapsed and swallowed the lives of Jethamoshai, Tridib, and Khalil, the Muslim rickshaw driver who had been taking care of Jethamoshai all these days.

The narrator's memories highlight the furious attack of the angry Muslims on the commoners and trace the reasons for the riots in Calcutta and Dhaka. He contemplates over the theft of a Muslim relic which resulted in conflicts all over the city of Khulna. The narrator further recollects how his grandmother Tha'mma sold her jewels to support Indian military against Pakistan. The narrator also recounts the fateful death of Tridib with the outbreak of a riot in Dhaka in 1964, in an attempt to save May Price, Jethamoshai, and Khalil. The death of Tridib remembered from the memory of Robi scared the narrator. The narrator was filled with shock when Robi became traumatic listening to the restaurant owner discussing about the riots in Dhaka during a night in London when they went to have dinner. It was a terrible night where Robi brought to surface the agitation that eventually killed Tridib. Even May was completely filled with a sense of guilt, often haunted by the brutal murder of Tridib. Hence is the forceful effects of traumatic after effects.

Tha'mma's trauma surfaces later where she undergoes a self-realization that her ancestral home Dhaka was not the same as before partition. It became East Pakistan after partition. Partition altered the lives of people and led to move various places that is not their own, as a result uprooted. Partition led people to forget humanity and attack each other irrespective of race and nation. Now that she had become a alien to her native land, she has to explain her native identity through her passbook that her roots belong to Dhaka. This incident leads her to cling

on her roots, posing a quest on her personal and national identity. Ghosh through the character Tha'mma rises the question in every human being who run towards other cultures, to trace the native identity that would resolve most of the personal, communal, and national issues.

CONCLUSION:

The memories of the narrator frequents the imbalances caused by partition through an excavation of the familial past through which historical events such as 1939 Second World War and 1962 East Pakistan Civil War leading to the liberation of Bangladesh are detailed. The fragments provided by other characters such as Tha'mma, Tridib, and the narrator contribute to an understanding of the characters and their affinity towards the West, and the trauma it caused people.

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Relevance of Gandhi in the Twenty-first Century

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Introduction

The philosophical foundation of Mahatma Gandhi is his intuitionally based notion of natural law, which involves the ancient Indian notion of 'Rta' (system) and 'Dharma' (interdependence) rooted in 'Atman' (truth) and 'Ahimsa' (non-violence). It is around this pivot of Gandhi's philosophy that all his ideas revolve. Gandhian social theory or his frame of reference is simple. The centre notion is 'Atman' and 'Ahimsa'. Atman according to Gandhi is love. It is not only related truth but absolute truth. Truth...the eternal principle i.e., GOD. This truth is the common factor, all pervading. It pervades the adversaries as well as the combatant. It pervades all the members of the society. Ahimsa, the central principle informing Gandhian action is derived from 'Atman'. In fact, Atman and Ahimsa are two sides of the same coin. It means absolute non injury in thought, words and in deeds. Society is a system (Rta) in which the sub-systems (Members) are interdependent entities (Dharma). This system and interdependence are rooted in 'Atman'. The purpose of all actions in a society is to reveal the common factor i.e., Atman, which means self-realisation or self purification and the realisation of GOD within us. Dharma is disturbed when the common factor (Atman) is veiled by the karmic veil, which is the source of egoistic action, exploitation, discord, contention and violence. In order to restore Dharma and foster again the common factor, the karmic veil needs to be

removed and for this Gandhi used the technique of ‘Satyagraha’. Satyagraha is never against an individual, it is against the institution; never against the evil doer but against the evil itself. It means holding on to truth. It implies the force which is born of truth, love, and non-violence. Since the purpose of all actions is to reveal the common factor, means must not only be pure but non-violent so as to strengthen the filial bonds between men. In case of doubt, inner voice, which again involves an intuitive procedure, is the final court of appeal. The question is how far this Gandhi’s frame of reference wholly based on intuition is still valid as a basis of action in the twenty-first century both in the domestic and international sphere.

Solution to deep moral crisis

British rule in India, its machine based industrialisation and its culture and ways of life is divorced from the Indian ways of life and its value of freedom, which is the essence of Atman (truth). Therefore, British rule in India is the karmic veil that disturbs Dharma (interdependence) and veiled the common factor (Atman). Machine based industrialisation and western culture ponders to man’s material pleasure and thereby, destroys his innate beliefs in truth. Industrialisation has injected all kinds of diseases of the industrial world in India such as individualism, inequality, injustice, exploitation, immorality, vanity, consumerism, corruption, greed, selfishness, sycophancy etc. Thus, it destroys the simple human values and binds him in chains. Gandhi repeatedly points out that (Swaraj) freedom means...the breaking of the chains that binds the minds of man. Although freedom struggle from the external point of view was a struggle to end foreign rule, it was essentially a moral struggle. For him, self-realisation and self-purification (the moral discipline of the individual) is the most important means of

social reconstruction. This analysis of Gandhi has profound implications today. The struggle of modern affluent society is the same as those of Gandhi...recover the simple human value that was lost in the complex society of today. The affluent society of the west as it is today is passing through a deep moral crisis. This western culture promotes mechanistic lifestyle with no human touch. The recent spread of consumerism and the offshoot of the affluent philosophy of the west in India are at the root of destroying the moral fibre of Indian society today. The successful of India seems to have already decided to secede from their unsuccessful fellow...the common Indian people. There is disintegration of values and degradation of life around all of us. There is continuing poverty of millions along with the ongoing consumerism of the elite and the society fearful about the future. There is increasing dirty affairs of corruption, communal violence, terrorism, income disparities, injustice, inequality, exploitation, and all sorts of vices in Indian society today. In order to come out of the present dilemma, Gandhian notion of swaraj, which means self- purification/self-realisation, and the realisation of GOD within us (i.e., holding on to truth) could provide an answer.

Political Decentralisation

Based on his intuitive notion Ahimsa (non-violence), Gandhi advocated political decentralisation. Ahimsa means absolute non-injury to anything in thought, words, and deeds. Gandhi was of the firm opinion that exploitation was the essence of violence. Exploitation becomes a reality when power was concentrated in a single body like the state. Violence must be avoided, and to eliminate violence, concentration of power must be avoided through decentralisation of power from the state. This analysis of Gandhi follows that political power of the state is not

an end in itself, but a means to improve the living conditions of the people. It was a means to regulate national life through national representatives. Gandhi reasoned that national life could become perfect if it was self-regulated wherein no representation becomes necessary. This analysis has profound implications today as far as Indian politics is concerned. Indian politics today is purely power-oriented. Secular values and ideology are thrown aside. Political power becomes an end in itself rather than a means to regulate national life. Political power becomes the goal and national life reduced to the category of means to achieve power - Criminalisation of politics and politicisation of criminals...criminals donning ministerial berths, Money and muscle power in election...elections mired by booth capturing, defection, cross voting, Institutionalisation of religion, misused of institutions, Politician-criminal-bureaucrat nexus, Mass killings, rape, violence, distortions, corruption and all sorts of immoral means available are resorted to in order to capture political power. Our present day Democracy is being used not for transparent governance but as a means for capturing power by using all immoral means available.

Economic Decentralisation

Beginning with the position that exploitation is the root of all violence, Gandhi builds his economic ideas in such a manner that exploitation of man-by-man is avoided. For him concentration of political power goes hand in hand with concentration of economic power, leading to the development of a dictatorial and authoritarian system. In line with this reasoning of Gandhi, the advocacy of cottage and small-scale industries for all-round development of rural areas assumed great significance. Gandhi's emphasis on khadi (village industries) were not only aspects of swadeshi (i.e. economic weapon against British

imperialism), but they also had their constructive dimension. Through khadi, even humble villagers could have a sense of participation in the great national movement while still remaining at home. Development of khadi was development from the grassroots, which was urgently needed in view of the utter ruins of India's traditional industries through British rule. The more important dimension of the idea was that development of khadi would not be dependent on the bureaucracy. Once this development took place, the economic interests developed in the process will also become significant and with the regeneration of the nation from the grassroots, the bureaucracy would find it difficult to hold on. This precious Gandhian insight was thrown to the winds after independence when the government initiated the development of villages' through CDP and PRI...in the former through the instrument of bureaucracy, and in the latter with bureaucracy and politics. In the CDP launched through bureaucratic initiative the kulak oligarchy entered in the absence of well-developed interests of various groups. In the PRI, when in addition to bureaucracy, politics was added; this kulak oligarchy became more firmly entrenched. The basic theorem involved in all these is simple: When village society is not organised on the basis of its own economic production, it is unable to cope with the organised bureaucracy whose unilateral position in the name of economic development can only help the kulaks to consolidate and entrench their position just as the operation of British Bureaucracy helped earlier to entrench the position of zamindars of that time. On the whole, Gandhian economic thought is conceived in the belief that every person in the society should lead a simple life and his goals would be to acquire the necessities of life where each person should work with his own body to fulfil his need. To those who accept 'simple living' or 'subsistence living' as the highest value, what Gandhi said is certainly relevant. The question is how many

could accept the principle of an economy of limited wants? Is it possible in today's competitive world, to live and run a subsistence economy when other nations are constantly raising their standards of living and increasing production? Gandhi's ideal system of production was a decentralised one in which the emphasis would be on the village being self-sufficient and manufacturing only for use and not for trade. The question is how far Gandhi's view on production relevant? Classical economic opinion is that small/village industries may provide more immediate employment and goods but only a moderate increase in the standard of living. On the other hand, centralised or big industries, after gestation period provide a higher standard of living which in turn generates employment. One would opt for large industries only if one wanted an ever-increasing standard of living. Since Gandhi considers any production beyond the maintenance or subsistence level as harmful, he naturally opposed industrialisation. You have to decide which option you would like to make. To me it is clear if you opt for a simple decentralised economy based on production for subsistence; you will naturally lack the power that goes with accumulation of goods and thus be condemned to a permanently poor place in the economy of nations. This quasi-Gandhian rhetoric concerning village upliftment and neo-colonial paternalism towards the rural population may have failed to mobilise agrarian society towards economic growth. But do the Indian people find an answer to their problems in capitalism and globalisation or market economy based on industrialisation? The Indian economy may do fine but the Indian people will not, for such indeed is the structural logic of market economy based on industrialisation. In fact, there are no-all-India solutions and every programme must be modified or adapted to suit particular circumstances imposed by geography, climate, traditions, and customs. Unlike many

other countries, India has an option to research the possibilities of the non-violent alternatives.

Supremacy of Nation in International Relations

Behind Gandhi's belief in political and economic decentralisation stood the one sentiment which mitigate the cynicism of his political and economic judgements and which ultimately earned him the title "Father of the Nation". This was superiority of nation over the state. Nation state appeared to Gandhi as two odd phenomena. While nation represented a meaningful combination of individuals each with a distinct, potentially of his own to fulfil a common mission, State was nothing but a mechanical arrangement super-imposed on it. Gandhi wanted to make sure that the social potentiality of nationhood was not eclipsed by the overwhelming concern of the state to ensure conformity of the people to its political and military prescriptions. His attention to this dichotomy between Nation and State was drawn by the situation obtaining in British India. A colonial power builds the Centre for promoting its interests. It leaves the periphery to the villages. Gandhi realised that here the British were building a bureaucratic state. By down rating State, Gandhi not only emphasised the intrinsic superiority of nation but also gave birth to a new concept of legitimacy so far as international transaction was concerned. Till then and even now global political and economic transactions are carried on between and in terms of state authorities. Legally, at least, the nation or people find little or no place in modern international system. The international community conducts its dialogue over the heads of the people and continues to assign a pride of place to State as its media of communication with them. Since technically, one cannot rule out the role of the State as the media in international affairs, there being no conceivable alternative so

far, it is worth pondering if the continued exercise of nearly unlimited sovereign authority by the State does not create a sort of role conflict for the State. On the one hand, it is supposed to act as the most authentic spokesman of the people whenever it is entangled in an international controversy. On the other, it is actually found to operate as a mechanism of dominance to which the people must submit or suffer. From this point of view, Gandhi's attempt to cut the State to a tolerable size certainly augurs well for a better working of the international community which aims at regulating the behaviour of the state from outside. The task would be infinitely easier for the international community if the very theory of the State as a system of dominance is rejected in favour of a theory of the state as a service institution. More importantly, the principle objective of today's global organisations like the United Nations is to promote friendly relations and meaningful cooperation between the people on the basis of equality of status and opportunity. There is no better way of promoting this objective than trying to subdue and soften the overbearing role of the state and to shift the emphasis from the state to the people, the recognition of whose pre-eminence at the international level is long overdue.

Conflict Resolution

Wars are said to originate in the minds of man, but do positivism, realism, empiricism or any theory/concept - which are the root of modern science and scientific outlook, which have given rise to nuclear weapons – have any answer to war? Positively and empirically, the world given through science is a fact. Its destruction if it were to take place would be just another fact. In other words, science has no answer to the problems it has created. The defence of peace is not possible in terms of the morals of any parochial or tribal religion or any

purely intellectual creed. It has to be on the basis of something deep and abiding which the whole humanity shares. Here the natural law philosophy of Gandhian vintage may provide an answer. Gandhi as against the western tradition of an intellectually postulated natural law emphasises an invariant intuitive factor common to the whole humanity which he calls (Sat) at the impersonal level and (Atman) at the personal level. It is by virtue of this common factor human society is a system (Rta) the members of which are governed by the law of interdependence (Dharma). The unity of the whole which expresses itself through the cordial or filial relations of the parts and the filial relations among the individual persons is the basic law. According to this paradigm, genuine power derives from the will power of human solidarity rather than from violence which undermines community and sows the seeds of its own destruction. If you want peace, assert non-violent activists, work for justice justly. This commitment to work for peace by peaceful means through training, strategic planning, constructive programmes, and personal discipline implies a revolution of human spirit and points to the possibility of a shift in human consciousness in which Ahimsa becomes a way of life. Non-violence thus, offers an approach to peace making that has been used not only to counter-act forms of social discrimination and political repression but also to resist foreign imperialism or occupation. The political philosophy of Gandhi as it developed during the course of his political activities maintained an essential continuity with earlier strands of thought. The essential spiritual approach to politics, developed by Vivekananda and Ghosh found its continued expression in Gandhi. In 1909, in 'Hind Swaraj', he accepted the basic distinctions made between society and state and India and the West. He extolled the spirituality of India and compared it to the violent, politically corrupt nature of the European state. He described all western

political power as brute force. His participation in politics was therefore, apologetic. *“If I seem to take part in politics, it is only because politics encircles us today like the coil of a snake. I wish, therefore, to whistle with the snake”* – Gandhi. This being his attitude to politics, logically to him, the state was by definition abhorrent. It is in this sense that from a totally different perspective, Gandhian ideology shared its most essential political trait with anarchist ideology. Gandhi believed that if individuals are allowed the freedom to express and pursue their interests, then as part of their spiritual unity, they will gradually discover their identity of interests. This, he believed, gave rise to human nature that was essentially accommodative and compromising. To this end, he saw like his anarchist counterparts- Kropotkin and Tolstoy – the state as a major obstacle in the realisation of individual freedom and social harmony. The state represents violence in a contracted form. He saw it as a soulless machine that can never be weaned away from violence. In his ideal society, therefore, there is no state political power since he saw in the state an essential centralising tendency that curbs individuality. Gandhi argued that exploitation and violence are linked in a chain of social causation and hence his humanism demands the end of violence through the moral development of an individual. In fact, the greatest tribute to Gandhii was paid by UNESCO when it adopted in its Preamble, the Gandhian thought that since war begins in the minds of men, it is in the minds of men that the defence of peace must be constructed.

Gandhi's concept of Swaraj

Gandhi repeatedly pointed out that Swaraj means the breaking of chains that binds the minds of man. Although freedom struggle from the external point of view was a struggle

to end foreign rule, it was essentially a moral struggle. For him self-realisation and self-purification is the most important means for social reconstruction. The struggle of modern affluent society is the same as that of Gandhi...to recover the simple human value that was lost in the complex society of today. The modern affluent society of today is passing through a deep moral crisis. This affluent culture promotes mechanistic lifestyle with no human touch. The recent spread of consumerism and the offshoot of the affluent philosophy everywhere are at the root destroying the moral fibre of society today. There is disintegration of values and degradation of life all around us. There is increasing dirty affairs of corruption, disparities, inequality, injustices, exploitation, criminalisation of politics, politicisation of criminals and all sorts of vices in our society today. We have seen continuing poverty of millions along with the growing consumerism of the elite and the society fearful of the future. The successful seems to have decided to secede from their unsuccessful fellow. These are the chains that bind the minds of men. To transmute these chains and to release men from these chains was the main concern of Gandhi. His concept of swaraj stood for liberation of personality. Through his swaraj, he visualised a total revolution transforming all aspects of life. The goal for him was to mould a new man...to change human life and create a new world.

As an Environmentalists

Nearly very few intellectuals agreed with Gandhi during his life time when he warned us against the evils of industrialisation, centralised economy and technology without human face. However, with the environmental crisis like ozone layer depletion, pollutions of various kinds, sea-level rise, unpredictable global climate change, degradation and depletion of natural resources effecting the life supporting system such as

air, water, soil and bio-diversity, the thinking community of the world over finds much sense in what Gandhi said. In their search for saving the environment, they discover the relevance of Gandhian philosophy. Gandhi warned that big machinery can never overtake the unemployed millions and that industrialisation is going to be a curse for mankind because it cannot provide jobs for millions of citizens. Its aim is primarily to make money for the few owners. In addition, industrialisation would be creating pollution problems, whereas developing thousands of cottage and village industries would provide an outlet for the creative faculties and resourcefulness of the people. For Gandhi, dead machinery should not be pitched against the millions of living machines. In brief, his whole life was his message and a lesson on protecting and conserving environment in the process of development not only for Indians but also the whole world to follow at large.

As a Feminist

A true feminist, Gandhi's image of women and his hope for her was so radically different from that of any earlier reformers. Before Gandhi emerges on the stage, the attitude towards women though sympathetic, was patronizing. Leaders and social reformers though in the language that made women look helpless. They want to protect, uplift, and bring relief to women. No doubt, there was a value in all of it, but with Gandhi, a new unique element emerged. In his own words; *"of all the evils which men has made himself responsible, none is so degrading, so shocking, so brutal as his abuse of the better half of humanity...the female sex, not the weaker sex. It is the nobler of the two, for it is even today, the embodiment of sacrifice, silent sufferings, humility, faith and knowledge. A woman is the incarnation of Ahimsa...infinite love which again means infinite capacity for suffering. Women the mother of men shows this*

capacity in the largest measures. Let her translate that love to the whole of humanity and she will occupy her proud position by the side of men... she can become the leader in Satyagraha."

Women to him were neither man's plaything nor his competitor struggling to be like him. Gandhi saw man and woman as equals, complimentary to each other. The soul in both is the same. The two live the same life, have the same feelings and emotions...each a compliment of each other. What women needed most was education, the recognition of her birth right to be free and equal, to steer her own destiny side by side with men.

Spiritualisation of politics

Gandhi adopted a teleological and valuational approach to politics. Since he thinks that politics cannot be divorced from religion, political action for him, is only a stage for some higher and nobler attainment. For chastening the barbarities of the politics of power, he pleads for incorporating the religious teachings of truth and non-violence into politics. Gandhi said that religion is a personal matter which should have no place in politics. In his own words "*I swear by my religion. I will die for it. But it is my personal affair. The state has nothing to do with it.*" Today this approach is completely reversed in politics. Politics today is purely power oriented. Religion is mixed with politics and vengeance and values are thrown away in the air. As power at any cost was the obsession of our politicians the gap between secular democracy and communal politics is ever widening and we are heading for great disaster. Our whole political discourse is un-secular and we, as citizens have not risen above sectarian controversies. While describing ourselves as a modern secular nation, we unhesitatingly employ communal discourse in our politics. The extent and intensity of communal discourse has been continuously on the increase. To cleanse our political system of communalism and communal discourse and

prepare the masses for value-oriented secular democratic republic politics, we need to go back to Gandhi.

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Geographical Indication and Structural Barriers: A Study on Screw Pine Craft of Kerala

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Abstract

The screw pine craft of Kerala is a prominent player in the developmental discourse around geographical indication and rural women's work. Practiced over 800 years, the craft narrates the triumph of nature's resources and relentless determination of rural women building a livelihood. A descriptive study was undertaken to access the effectiveness of GI among rural women workers in the crafts; to identify barriers to access the benefits of GI and to suggest recommendations for better utilization of GI. The findings emphasized that while GI can be a powerful tool nevertheless its full potential cannot be realized without addressing systemic gaps.

Keywords: Rural Women Workers, Screw Pine Crafts, Geographical Indication

Introduction

Pro-active participation of women is inevitable for sustainable growth. Yet, despite the growing global recognition of women's entrepreneurial potential, India remains behind in creating an ecosystem which supports female entrepreneurship.

India ranked 57th among 65 countries in the Mastercard Index of Women Entrepreneurs (MIWE, 2021). Global Entrepreneurship Monitor (GEM) shows women's total early-stage entrepreneurial activity (TEA) rates are often high in low-income countries. Contrarily, India has an average TEA rate of only 2.6% for women. GEM reported that female entrepreneurs in India cited job scarcity as a critical motivation for business creation as against the opportunity to grow a business and earn profits. Employment provided by the MSME sector suffers from a huge gender gap. It employs 76% male and only 24% female employees (NITI Ayog, 2022).

In this context, effective utilization of Geographical Indication (GI) tagging presents an opportunity to build better work and entrepreneurial opportunities for the women in India. World Trade Organization (WTO) defines GIs as: "indications that identify a good as originating in the territory of a particular country, or a region or a locality in that country, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin". GI signifies the name or sign used in reference to the products which are corresponding to the particular geographical area. GI tag shows that the specified product consists of the same qualities and is enjoying reputation due to its origin from the specified geographical location (Shukla, 2016). On the producer side help to link the product to the images of the production area (environment, culture, landscape), thus exploiting consumer willingness to pay for the latter (Cei et al, 2018; Divya & Anoop, 2018).

Geographical Indications (GIs) offer a range of benefits across social, economic, consumer, environmental, and employment dimensions. Socially, they emphasize the

integration of culture into development theory, as seen in increased European involvement in UNESCO heritage activities that highlight local cultural distinctions (Coombe et al., 2014). Economically, GIs are recognized as a powerful tool for socio-economic development, as it grants access to premium markets, ensuring fair prices, and reducing intermediary exploitation (Pick et al., 2017). Environmentally, GIs support the sustainable use of genetic resources and protect traditional environmental knowledge (TEK) and cultural expressions (TCEs), which are often sources of income for rural communities, especially elderly women with extensive traditional expertise (Coombe & Malik, 2017). Additionally, GIs stimulate employment by fostering local economic growth in underdeveloped regions, enhancing income flows, and generating job opportunities for rural populations (Pradyot & Ulrike, 2010).

Socio-Economic Impact of Geographical Indication on Rural Women

Geographical Indication (GI) tagging of argon oil has significantly contributed to the socio-economic development of Morocco. The GI status led to an increase in the number of cooperatives, providing a sustainable income source for local communities, particularly women. This cooperative model not only improved economic stability but also enhanced social participation by empowering individuals to actively engage in collective decision-making and community development initiatives (Perry et al, 2018). Geographical indication of shea butter in Ghana has been identified as a factor contributing to increased social inclusion and economic activity among rural women. However, decision-making power often rests with their husbands or partners limiting women's autonomy and influence over the financial and operational aspects of the shea butter

industry, perpetuating gender inequalities within the supply chain (Vecchio et al, 2020). Limitations to own or profit from these intellectual property assets due societal norms and institutional barriers were identified in studies based in Africa. Women's roles as "homebuilders" often limit their participation in wealth-generating activities, perpetuating gender disparities. Government and NGO initiatives often aim to build capacity, but rural women still face challenges in maximizing these benefits due to gaps in implementation and accessibility (Mba-Kalu, 2024).

In India, Geographical Indication (GI) has played a role in promoting decent work among rural women, as evidenced by the Madhubani painting tradition of Bihar and the Pochampally Ikat handloom craft of Telangana. In Bihar, women involved in Madhubani painting not only create art but also teach the craft to others, enabling them to meet their household expenses independently (Singh & Moid, 2022). Meanwhile, in Telangana, the strong demand for Pochampally Ikat has led employers to improve working conditions, prioritize safety, and provide a secure environment for artisans. These initiatives have enhanced productivity and motivated weavers through increased income. Additionally, the Telangana State Tourism Development Corporation (TSTDC) has supported the craft by establishing a museum to document the tools and traditions of Pochampally hand weaving, contributing to its preservation and promotion.

Promotion of Employment among Rural Women through Geographical Indication (GI) in Kerala

The southernmost state of India, Kerala is a golden bowl of tradition and ranks one among highest in the country on Human Development (HDI-7.58) (GoK Economic Review,

2023). But as the data on the percentage distribution of working women in informal sector in 2019-20 as per the PLFS suggests the self-employed women in Kerala (39.4 %) is much lesser than that of national level data (55.5%). Women ownership in MSMEs showcase that Kerala ranks only 9th, against the high performance in other indices. This data shows a strict need to improve these parameters to create a suitable environment for female entrepreneurs to establish themselves and grow (Global Entrepreneurship Monitor, 2022).



Fig 1: Top 10 States with Women owned MSMEs in India

Source: MoMSME Annual Report 2022-23 <https://msme.gov.in/msme-annual-report-2022-23>

Geographical Indication proved to be driving force towards employment opportunities among rural women, effective volarization of cultural heritage in the state can promote enterperurship and employment opportunities among the rural women in Kerala. The research findings demonstrate

that the GI-tagged products in Kerala provide more socio-economic benefits in the rural areas as they offer differentiated and high-value-added products, and the consumers’ willingness to purchase these kinds of products is high (Das & Dileep, 2023). In the state of Kerala Geographical Indication Tag is been given to agricultural, handicrafts and for food products. While the GI Tag in the state is owned by 61.1%, 33.3% is owned by handicrafts and 5.6% by food products (MoCI, 2024). Screw pine fibre crafts are one among the prominent handicrafts in the state which has been providing livelihood to rural women for decades (Jaitly, 1997).

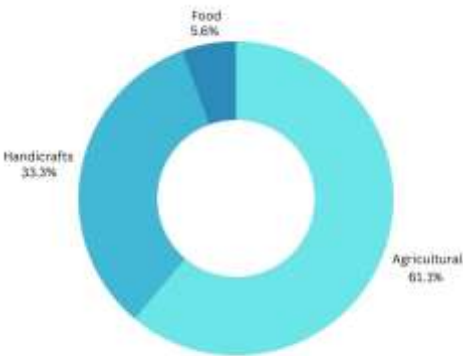


Fig 2: Categories of Registered GIs in Kerala

Source: MoCI, <https://ipindia.gov.in/registered-gls.html>

Screw Pine Fibre Crafts of Kerala

The history of this craft narrates a tale of resilience and ingenuity, showcasing the triumph of nature's resources and the relentless determination of coastal women to build a sustainable livelihood. This craft is practiced by the women in their homes in

Kerala for more than 800 years ago. Kerala's mat industry is a major contributor to the state's economy and is renowned for its softness and polish (GoI, 2015). Rural women began weaving mats by using fibre extracted from screwpine which is grown in their yards and fences as a way to support their families. To fight poverty these women started experimenting with screw pine leaves, crafting bedding mats and other household items. This not only helped them save money by reducing dependence on market-bought goods but also provided a modest income. After managing household responsibilities, these women utilized their spare time to engage in this craft, turning a simple natural resource into a source of sustenance and dignity for their families. The craft exists mainly in three regions of Kerala – Thazhava (in Kollam district), Kodungallor (in Thrissur District) and Thalayolaparambu (in Kottayam District). With popular effort screw pine crafts of Kerala received GI Tag in 2015 (GoI, 2015).



Fig 3: Collection of Screw Pine



Fig 4: Woman worker weaving



Fig 5. Value added Products

Objectives

The aims for the study were to:

- to find out whether GI has been effective among rural women workers in screw pine crafts of Kerala;
- to identify the challenges among the women workers to access the benefits of GI and
- to suggest recommendations to overcome the challenges and for better utilizations for the benefits of GI.

Methodology

A descriptive study was undertaken to gain a deep understanding of the experiences and challenges faced by women workers in the screw pine crafts industry. The primary data collection method consisted of in-depth interviews with five women workers from the clusters of Kollam and Thrissur districts of Kerala and administrative authorities of NGO working for the fibre crafts women workers. The respondents were selected according to their expertise and sustained engagement in the sector to help the researcher understand the problem and the research question.

Effectiveness of Geographical Indication among Rural Women Workers in Screw Pine Crafts of Kerala

Effective November 30, 2015, the "Screw Pine Craft of Kerala" received Geographical Indication (GI) registration under the Geographical Indications of Goods (Registration and Protection) Act, 1999, followed an application



Fig. 6: Logo of Screw Pine crafts

submitted by the Development Commissioner (Handicrafts), Government of India (GoI, 2015). GI registration signifies the recognition and protection of the unique cultural and geographical heritage of screw pine crafts, aimed at preserving traditional knowledge and promoting economic benefits for artisans. However, insights from in-depth interviews with women engaged in the craft reveal a significant gap in awareness about GI registration and its potential advantages. None of the self-employed women workers interviewed had a clear understanding of the concept of GI or the geotagging of the products they create. Even among those associated with NGOs, only partial awareness about the concept of GI was observed. This lack of knowledge hinders the ability of rural women workers to harness the GI status for better market positioning, value addition or enhanced income opportunities. This revelation underscores a critical point that while GI protection is a valuable tool for safeguarding and promoting traditional crafts, it alone is insufficient. Intended economic and social advantages of GI registration is being unrealized within the women workers, leaving the rural women workers disconnected from the potential opportunities of better work.

Challenges Faced by Rural Women Workers in Accessing the Benefits of GI

Considering the limited awareness on geotagging of screw pine crafts and lack of access to the benefits of GI among the women workers in fibre crafts, the reasons which are the barriers this sector face can be traced down to three categories. They are awareness and training related issues, market and economic challenges and social and gender constraints.

Awareness and Training Issues

- **Lack of Awareness:** The absence of knowledge about Geographical Indication (GI) registration among the rural women workers is a critical barrier to realizing its benefits. The women workers engaged in fibre crafts remain unaware of the concept of GI or its implications for their craft. Without understanding its purpose, these workers cannot market their products as unique or capitalize on the protection offered by GI status. This lack of awareness stems from **poor information dissemination**. As from rural areas, these women may face restricted access to news, workshops, or campaigns about GI.
- **Inadequate Training:** Even when some awareness exists, the lack of adequate training prevents the women workers from fully utilizing the GI certification. Majority of the women workers in this crafts sectors lack higher education. Lack of formal training combined with lack of higher education limits the women to access information on the intellectual property of the crafts. A large market for geotagged products is online. Without digital training on e-commerce mechanisms, it is impossible for the women workers to access to the wider market.
- **Inability to establish a brand:** Branding is essential for positioning GI-tagged products in a competitive market. But a large portion of screw pine craft products are not within an umbrella of a brand. A unified brand can aid to project the cultural significance and historical significance of the crafts thus making the products stand out in the market for its uniqueness. Not only digital invisibility but a lack of effective branding can make the

screw pine crafts products invisible in fairs and exhibitions.

Market and Economic Challenges

- **Weak Market Linkages:** market linkages refer to the connection between the women workers with the market, local, national as well as international markets. None of the women who are the artisans are involved in the broader marketing process of the crafts. Involvement of middlemen in the process of getting access and communicating to the customers and selling the crafts products prohibit the women workers to get to know about the mechanism of geotagging and how their products are unique in the market. This poor connectivity also makes trade fairs, online marketplaces and exhibitions underutilized.
- **Lack of Governmental Incentives:** Even after years of contribution, many of the women workers are working independent without any governmental support. Many women workers not even registered workers under the handicrafts ministry which limits them to access many incentives and benefits. Without financial incentives, artisans cannot invest in improving product quality, adopting better tools, or expanding their operations, which stifles growth. Limitations in accessibility of raw materials were expressed among the women workers. Considering the raw material is one of prime factors which makes the product eligible for geo-tagging, governmental support in terms of incentives to buy raw materials or market connectivity to the raw materials should be provided to foster this sector.

- **Neglect of Complementary Investments:** Complementary investments are the supporting infrastructure and services that ensure the success of initiatives like GI registration. Neglect in these areas weakens the overall ecosystem for artisans. Lack of proper workspaces, storage facilities, and access to raw materials hampers production. Insufficient training in advanced techniques, digital marketing, or sustainable practices limits the artisans' ability to innovate and compete. A lack of preventive kits while dying the fibre with chemicals were identified among the self-employed women workers.

Social and Gendered Constraints

- **Disadvantages of Having a Gendered Job:** A gendered job refers to work that is predominantly performed by one gender, often due to societal norms, stereotypes, or historical division of labour. Gendered jobs are often undervalued in society, leading to lower wages and recognition for women artisans compared to their male counterparts in other industries. This perception on screw pine crafts can be also a reason towards lack of knowledge distribution regarding GI. Being a time, labour and skill-intensive craft, the sector is often overlooked and is underappreciated in terms of these properties.
- **Disadvantages of Social Position:** Women workers often face challenges due to their broader social positions, influenced by factors like class, caste, and rural backgrounds. Many women involved in crafts belong to economically weaker sections, lacking access to capital and resources which further more increase the

economic marginalization. In some coastal regions, traditional craftwork is associated with specific castes, further marginalizing women from socially disadvantaged groups. These social disadvantages reinforce systemic inequalities, limiting women's ability to advance their craft as a viable and profitable livelihood.

- **Lesser Female Participation in the Supply Chain:** even though the production is dominated by women, their participation is severely lacking in the decision making and the marketing dimensions of the sector. Women rarely hold leadership roles in cooperatives, NGOs, or businesses managing the craft's supply chain. They lack training in logistics, packaging, and supply chain management, preventing them from taking on these roles. The exclusion of women from key stages limits their ability to influence the value chain and command the benefits of GI, keeping them in low-income roles and dependent on external actors.

Measures to Overcome the Challenges and Promote Better Work

Targeted measures are to be taken to address and overcome the barriers which challenge the women workers in screw pine crafts to reap the benefits of GI. The barriers on limited awareness and training can be dealt with the allocation of **targeted information dissemination** through awareness campaigns tailored to rural women through community-based organizations, self-help groups, and NGOs to educate them about GI registration, its benefits, and related opportunities. Developing training programs using simple language and visual aids to make concepts like GI tagging, geotagging, and market

positioning can be made accessible to women with limited formal education, thus addressing the training related limitations. Training can be widened to the digital landscapes specifically on how to master e-commerce platforms, manage online sales, and use digital marketing tools.

Market and economic domains were the other prominent challenges which limited the women workers. Trade fairs, exhibitions and online marketplaces reduce the dependency on intermediaries and facilitate a direct access to worker to market. This measure can strengthen the market and economic linkages of the women workers thus coming across the workings and later benefits of GI. A collective brand is to be established for all GI-tagged screw pine crafts products. This can prohibit rural women who work independently get excluded from the benefits of GI. A collective brand emphasizing their authenticity and cultural significance will be beneficial to attract premium buyers.

Social and gender constraint even though may not be visible at a first glance is a deep-rooted challenge if left unaddressed will continue to limit the crafts for more years to come. Inadequate participation on women workers in the leadership roles was alarming. Encouraging women to take up leadership roles in cooperatives and NGOs through mentorship programs and capacity-building workshops are necessary. They should also be provided with targeted training in logistics, packaging, and supply chain management to enabling expand their roles in wider areas of the sector. Widening the horizons on expertise within the sector might make them more aware on the mechanism of GI, market standards, certification thus enhancing the capacity to engage with GI related initiatives. At a social level, the undervaluation of the crafts can be challenged with community engagement programs which can redefine the

perceptions of screw pine crafts as a skill intensive profession and a profitable trade. Importance of traditional crafts knowledge in preserving history can be included in the school curriculum which helps to celebrate the local economic history.

Conclusion

The socio-economic landscape for women entrepreneurs in India reflects significant challenges, as evidenced by low entrepreneurial activity rates and gender disparities in employment within the MSME sector. Geographical Indication (GI) tagging presents a promising avenue to bridge these gaps by promoting traditional crafts and enhancing livelihoods. By safeguarding the unique qualities of region-specific products, GI status provides rural women workers an opportunity to access premium markets, gain fair compensation, and achieve economic growth. However, to reap the benefits of GI concerted efforts are required to address gaps in awareness, training, market access, and systemic gender biases. Leveraging GI as a tool for sustainable development can not only preserve cultural heritage but also contribute to gender equity and economic inclusivity.

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Ecofeminist Pathways to Climate Justice: Reclaiming Gandhian Ethics in a World at Risk

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Abstract

In the backdrop of accelerated climate change, ecological degradation, and aggravation of socio-environmental injustices, there is an urgent need to revisit ethical frameworks that are motivated by nonviolence, sustainability, and care. The present article critically engages with the confluence of Gandhian environmental ethics and ecofeminist theory as a praxis of transformation for the realization of climate justice. Rooted in the paradigm of ahimsa (nonviolence), swaraj (self-governance), and sarvodaya (well-being for all), the research reinterprets the philosophy of Gandhi in an ecofeminist framework that puts at the center stage the voices, experiences, and resistances of women—particularly those based in the Global South. Adopting a thematic framework, the paper examines newly emerging women-led environmental movements in India that are paradigmatic of Gandhian ideals and provides a critical assessment of their relevance to the mitigation of modern ecological crisis. The article argues that the confluence of Gandhian ethics and ecofeminist praxis provides a nonviolent, inclusive, and culturally contextual approach to climate injustice. The article concludes by suggesting policy recommendations to reinforce grassroots ecological democracy, facilitate regenerative

economic models, and integrate feminist ethics of care within environmental governance frameworks.

Keywords: Gandhian Environmentalism, Ecofeminism, Climate Justice, Nonviolence, Women Environmentalists, Ecological Ethics, Environmental Governance

Introduction

The climate emergency has transitioned from a looming threat to an actual and deepening crisis, as observed through rising global warming, widespread ecological mayhem, the dismantling of biodiversity, and mounting socio-economic inequalities. As the world attempts to fulfill the imperative of sustainable transformation, it has become increasingly evident that technology-driven and market-based solutions will not be enough. Environmental actions must rather be founded on ethical, integrated, and participatory approaches that honor justice and ecological balance. In this paradigm, the Gandhian approach—centered on ahimsa (nonviolence), swaraj (self-reliance), and sarvodaya (universal well-being)—offers a compelling but under-theorized foundation for reimagining environmental justice.

Simultaneously, ecofeminism has emerged as a significant critique of the inherent links between ecological despoliation and gendered marginalization, especially of indigenous, rural, and subaltern women. Ecofeminist scholars propose that the patriarchal structures that oppress women similarly deplete and destroy the natural world. The intersection of Gandhian environmental ethics and ecofeminist theory thus articulates a compelling moral and political vision for resisting climate injustice and building regenerative futures.

This article examines the ways in which Gandhian ethics, when considered from an ecofeminist point of view, can play an important role in the debates of climate justice today. The article examines the philosophical and political affinities between Gandhian principles and ecofeminist concerns, with specific reference to women-led ecological movements in India. On this basis, the article presents culture-centered, nonviolent, gender-balanced alternatives to ecological devastation, and calls for the integration of a feminist ethical framework within environmental policy.

Theoretical Framework

The three interconnected theoretical foundations guiding this research are the Ethics of Care, the Gandhian Philosophy of Nonviolence, and Ecofeminism. Together, these theoretical foundations supply an inclusive explanation of environmental justice, sustainability, and the transforming role of women in ecological resistance and activism.

➤ Ethics of Care

Developing out of the work of Carol Gilligan in 1982, the Ethics of Care emphasizes the responsibility of and for relationships. It is used here in a critical mode to challenge dominant ethical approaches centered on abstraction and individualism, not to propose a morality system based on responsiveness and empathy. Used in the context of environmental controversy, it describes the Earth not as a passive resource, but as an organism deserving of the same ethical regard normally given to family or community.

"Care ethics reverses conventional moral structures by putting the relational character of human beings in the front and broadening moral concern to non-human beings" (**Pulcini, 2013, p. 32**).

➤ **Gandhian Environmentalism**

Mahatma Gandhi's environmental vision, based on the principles of sarvodaya (universal well-being), trusteeship, and ahimsa (nonviolence), provides a moral and spiritual basis for much of the modern ecological movement in India. His philosophical vision encourages a simple, disciplined, and respectful way of life between human beings and nature.

The observation that "Earth gives enough to satisfy every man's needs, but not every man's greed" (**Guha, 2000**) captures Gandhi's profound ecological awareness.

Martusewicz et al. (2015, p. 104) observe that Gandhi's commitment to voluntary simplicity principles, decentralized economic systems, and the practice of nonviolence is essentially critical to ecological views in the Global South.

➤ **Ecofeminism**

Formulated by scholars like **Vandana Shiva and Maria Mies (1993)**, ecofeminism resonates with the common causes of both environmental destruction and gender repression in patriarchal and capitalist orders. In accordance with it, the oppression of women and the control of nature are not coincidental but structurally interconnected. Moving beyond critique, ecofeminism also emphasizes the active agency of women—

especially from indigenous and rural backgrounds—as subjects of environmental resistance.

"Ecofeminism uncovers how women, particularly rural and indigenous women, have long struggled against ecological devastation through activism rooted in spiritual and cultural values" (**Salleh, 2017, p. 45**).

Together, the three theoretical frameworks of the Ethics of Care, Gandhian environmentalism, and Ecofeminist theory converge to create a rich interpretive tapestry. They shed light on how Gandhian women environmentalists have shaped environmental activism in India and provide inspiring perspectives for engaging today's interconnected crises of climate change, inequality, and environmental injustice.

Review of Literature

The coming together of Gandhian moral values, ecofeminist critical perspectives, and climate justice has attracted increased scholarly attention, particularly in the wake of increasing environmental degradation and the differently impacted gendered effects of environmental catastrophe.

➤ Ecofeminism and Environmental Crisis

Ecofeminism posits that mass oppression of women and nature results from intersecting patriarchal systems (**Shiva, 1988**). **Gaard and Gruen (1993)** contend that this theory resists dualism and prioritizes care, reciprocity, and community as essential factors in ecological health. This perspective has gained prominence in the context of challenges such as climate migration, agroecological uncertainty, and water scarcity—

challenges that largely affect women in the Global South (**Dankelman, 2010; Terry, 2009**).

➤ **Climate Justice and Gendered Vulnerability**

Climate justice promotes equitable distribution of responsibilities and liabilities in climate change mitigation and adaptation efforts. **The United Nations Development Programme (2020)** notes that women, particularly rural and indigenous women, are disproportionately exposed to climate disasters. However, **Arora-Jonsson (2011)** provides a critical examination of gender mainstreaming in environmental policy-making, warning that gender mainstreaming efforts often tend to represent women as passive instruments of implementation and not as independent agents of change.

➤ **Gandhian Philosophy and Environmental Ethics**

The philosophical paradigm that Mahatma Gandhi developed—i.e., his concepts of *sarvodaya* (good of all), *aparigraha* (non-possessiveness), and *swaraj* (self-rule)—formed the ethical foundation for sustainable ways of living. His advocacy of voluntary simplicity and decentralized economies is a powerful counter-narrative to exploitative, growth-oriented models of development (**Parel, 1997**). **Kumar (2013)** argues that Gandhi's ethical vision is well in tune with sustainability talk today, highlighting the applicability of restraint, moral responsibility, and local self-governance in ecological management.

➤ **Ecofeminism and Gandhian Philosophy**

Their convergence has been highlighted by scholars such as **Shiva (2005)**, who call them common in their commitment to

nonviolence, cooperation, and resource management at the local level. Examples of effective women's movements such as the Chipko Movement and the Narmada Bachao Andolan show such convergence, with the basis of the resistance not only on moral principles but also feminist principles of care and local environmentalism (Narayan, 2014).

➤ **Current Trends and Research Needs**

Though the current literature recognizes the importance of Gandhian as well as ecofeminist paradigms, a strong research gap exists in academic scholarship in explicitly connecting these paradigms in current literature on climate justice. Recent research has started addressing this gap; e.g., **Singh and Mishra's (2022)** examination of eco-spirituality and Indian environmentalism and **Sharma's (2023)** research on women as change leaders in climate-resilient agriculture identify the newly emerging intersections of gender, ethical consciousness, and environmental sustainability in the Indian context.

Ecofeminism and Climate Justice: A Critical Interconnection

Ecofeminism provides a critical critical framework for examining the interdependent relationship between ecological devastation and gender oppression, specifically in the context of climate injustice. By focusing on the embodied lives of women—particularly those from the Global South—ecofeminist theory foregrounds relational ethics, anti-extractive capitalism, and the building of community-based systems of care (**Gaard & Gruen, 1993; Tasis, 2025**).

An extensive international review of 134 peer-reviewed studies from 2012 to 2023 suggests the need for ecofeminist

perspectives in advancing climate justice, particularly for economically vulnerable women in ecologically susceptible regions (**Environmental Science & Policy, 2024**). The review suggests that women's movements are responsible for framing adaptation practices and climate governance (**Environmental Science & Policy, 2024**).

In the Indian context, **Somokanta (2024)** notes the importance of women's stories—from precolonial ecological societies through to modern climate movements—in constructing ecofeminist environmentalism. These stories serve as acts of cultural resistance to neoliberal extraction and, at the same time, bring out and amplify previously muted voices and practices.

Intersectional ecofeminism is an extension of this debate insofar as it highlights the specific struggles of marginalized and indigenous women. **Justin and Menon (2022)** critique in their research the activism of Mayilamma and the Jharkhand Save the Forest Movement, showing how Adivasi women interweave cultural identity and ecological activism, which is grounded in indigenous ecological knowledge.

Besides this, **Joseph (2020)** also analyzes the increasing significance of ecofeminist concerns in environmental policy and grass root leadership in India. Her research indicates how women encourage paradigms of justice that counteract environmental and gender disparities.

Together, they illustrate the primary overlap between ecofeminist theory and climate justice struggles. They challenge and criticize prevailing policy paradigms that ignore gendered experiences and emphasize the urgent need for women to play a critical role in not only being victims of environmental disasters,

but as transformative agents of environmental change. Furthermore, ecofeminist methodologies highlight loopholes in mainstream climate policy—specifically adaptation measures, fair resource distribution, and incorporating indigenous knowledge systems.

Reclaiming Gandhian Ethics in Contemporary Environmentalism

Mahatma Gandhi's philosophical vision offers a durable moral paradigm for transforming environmental stewardship. His core principles of ahimsa (non-violence), swaraj (self-governance), sarvodaya (welfare for all), and trusteeship provide a compelling alternative to exploitative industrial culture and profligate consumption, and imply alternative paradigms of sustainability and moral responsibility (**Kumar & Shiju, 2022; TERI, 2024**). Gandhi's assertion that "the world has enough for everyone's needs, but not for anyone's greed" accurately encapsulates the call for moderation, simplicity, and collective stewardship of the world's resources (**TERI, 2024**).

➤ Ahimsa and Environmental Stewardship

Gandhi's ahimsa extends from personal nonviolence in human interactions to include the Earth and all living things. This ethical framework redefining sustainable activity as a moral imperative promotes minimal resource depletion and utmost respect for diversity (**PMC, 2019**). The ecological consequences of ahimsa have impacted green initiatives like Chipko and motivated great thinkers across the globe such as E.F. Schumacher and Arne Naess in developing biospheric egalitarianism (**TERI, 2024**).

➤ **Self-governance and Sustainable Decentralization**

Gandhi's conception of swaraj eschewed industrialized, centralized economies in favor of locally controlled, nature-oriented modes of living. J.C. Kumarappa, one of Gandhi's influential disciples, fleshed out the concept further in *The Economy of Permanence*, promoting organic agriculture, village economies that are self-reliant, and natural manures—pillars of ecological harmony and community resilience (TERI, 2024).

➤ **Sarvodaya and Trusteeship**

With trusteeship and sarvodaya, Gandhi called upon society and individuals to consider natural resources as a common trust rather than personal property.

These principles place high value on equal distribution, restraint in the environment, and collective responsibility for the environment. They focus more on the common good rather than profit, combining ecology and social welfare through balance and moral responsibility ethics (TERI, 2024).

Contemporary thinkers identify with such ideals amid rising ecological degradation. Neupane (2023), for instance, reimagines Gandhi's ecological seva—selfless service to nature—as a green economic policy based on compassion, care, and ecological harmony, offering a scathing critique of contemporary capitalist paradigms (Phalgun, 2023).

In contemporary climate discourse, Gandhian ethics reappropriation offers a counter to profit-driven and technocratic environmentalism. His focus on local economies, moral consumption, and local sustainability is strongly compatible with

ecofeminist calls for justice, interdependence, and care (**TERI, 2024**).

Gandhi's philosophy has seen renewed relevance with escalating environmental degradation and climate injustices. His principles of ahimsa, sarvodaya, and trusteeship give a moral foundation to counter the dominant ideologies of extractivism and consumerism that fuel the global ecological crisis. His call for "plain living and high thinking" resonates with the regenerative and community-based paradigms advocated for by modern climate justice movements (**Gandhi, 1993/2001**).

Despite this, common environmental responses are normally articulated within hierarchical, technocentric paradigms that overlook ethical, cultural, and grassroots issues. Gandhian philosophy rebukes this by propounding decentralized economic systems, local management, and self-reliance—principles harmonious with ecofeminist imaginings of caring, interdependent communities (**Shiva, 2020; Warren, 2021**). Gandhi's trusteeship principle, for instance, prescribes that wealth and natural endowments must be kept in trust for the common weal. This is in contrast to the commodification of nature and is harmonious with ecofeminist principles of care and interdependence (**Held, 2006**).

Gandhi's teachings also enable nonviolent opposition to environmental degradation. In India and the Global South, local movements have used the methods of satyagraha (truth-force) to defend forests, rivers, and local self-rule against environmental injustice (**Patkar, 2022; Kumar & Singh, 2023**). These nonviolent approaches not only oppose ecological destruction but also reaffirm moral and cultural entitlements to natural resources.

Researchers such as **Banerjee and Chakraborty (2021)** opine that Gandhi's heritage must not be conceived as a static historical figure but rather as a dynamic and living exemplar of ethical action on the climate. As the intersections of ecofeminist critiques of patriarchal capitalism come together, Gandhian principles can be the driving force of justice, care, and inclusion-based transformation solutions.

But this reclamation must eschew romanticizing earlier perceptions. The challenge is to adapt Gandhian ideals into modern structural changes—varying from just land policies to green agriculture, ethical energy shifts, and corporate responsibility. This involves interdisciplinary cooperation and policy innovation grounded in nonviolence, justice, and sustainability.

In India, the Gandhian-ecofeminist movement demonstrates how women's movements have utilized the principles of nonviolence, care, and the common good to challenge ecological destruction and social exclusion. The case studies below present the experiences and dilemmas of leading women environmentalists, demonstrating how Gandhian ethics and ecofeminist praxis intersect in actual struggles for climate justice and ecological restoration.

Case Studies / Illustrations of Ecofeminist-Gandhian Activism

➤ Dr. Vandana Shiva and the Navdanya Movement

Dr. Vandana Shiva is a prominent ecofeminist-Gandhian activist. Her establishment of the Navdanya movement in 1987 has encouraged biodiversity, organic farming, and seed

sovereignty in India. Shiva's opposition to corporate domination of agriculture and advocacy of decentralized, self-sufficient rural economies are in line with Gandhi's concept of *swaraj* and trusteeship. Shiva denounces industrial agriculture as a patriarchal and capitalist enterprise, claiming that women—as custodians of traditional seeds and biodiversity—possess fundamental ecological knowledge (Shiva, 2022). Her activism recovers indigenous wisdom and enshrines the feminine ethic of care in ecological stewardship.

➤ **Medha Patkar and the Narmada Bachao Andolan**

Medha Patkar's engagement in the Narmada Bachao Andolan (NBA) is a paradigmatic example of the intersection of Gandhian values—most significantly, *ahimsa* and *sarvodaya*—of ecofeminist practice. The NBA was begun as a response to displacement caused by large dam projects on the Narmada River, focusing on the voices of rural and tribal women victimized by environmental injustices. Patkar's use of nonviolent resistance opposed state-led technocratic development and uncovered the moral failures in the policy of infrastructure that leave vulnerable groups behind (Roy, 2019). Her approach identifies values of equity, environmental accountability, and participatory justice, thus making the NBA an outstanding grassroots movement in India.

➤ **Sugathakumari and the Silent Valley Movement**

Poet and ecologist Sugathakumari was at the heart of the Silent Valley Movement in Kerala in the 1970s and 1980s, which successfully prevented the construction of a hydroelectric dam in one of India's wealthiest rainforests. Her activism blended Gandhian non-violence with poetic imagination to bring

public attention to the moral and ecological worth of the rainforest. Sugathakumari's work highlighted the deep interdependence of human beings and nature, presenting conservation as both a spiritual duty and a moral responsibility (Guha, 2014). Her writing continues to stimulate ecological thought that places compassion and cultural responsibility at its core.

➤ **Dayamani Barla and the Indigenous Resistance in Jharkhand**

Dayamani Barla is an Adivasi activist and journalist from the state of Jharkhand who has spearheaded significant resistance across mining and land acquisition projects that target tribal communities and their ecosystems. Her activism primarily focuses on indigenous rights, environmental justice, and nonviolent resistance to state and corporate-driven exploitation. Barla's activism is in tune with Gandhian principles of ahimsa and swaraj, but also provides an ecofeminist critique of extractive capitalism as ecologically unsound and patriarchal in its operations. She highlights the pivotal role played by women in defending ancestral lands on the basis of indigenous ecological knowledge and spiritual practices (Kumar, 2023).

➤ **The Chipko Movement and Forest Guardianship by Women**

While the Chipko Movement (1973–1980s) is widely referred to as a people's movement, it is particularly characterized by the pioneering initiative of rural women in Uttarakhand. Women like Gaura Devi spearheaded movements of nonviolent resistance by literally embracing trees to prevent deforestation by timber corporations. Derived from the tenets of

Gandhian satyagraha, the movement exhibited deep ecological stewardship, local self-governance, and moral resistance to exploitation. These women, being the main consumers and guardians of forest products, utilized their intense ecological knowledge to defend their environment. Their initiative justified the ecofeminist argument that women, who are often the worst affected by environmental destruction, are also its strongest champions (**Bahuguna, 2016**).

Policy Gaps and Ethical Challenges in Climate Action

Despite growing urgency and scope of global climate action, there are severe policy loopholes and ethical issues, which erode their overall effectiveness. A primary concern is the disproportionate nature of climate policies, which in most cases impose disproportionate burdens on poor and vulnerable groups. For example, measures like carbon levies and energy standards may be financially out of reach for economically poor families, thus worsening energy poverty and generating public resistance (**Otto et al., 2021**). Similarly, small-scale entrepreneurs in underserved parts of the world often encounter structural barriers in the form of finance, infrastructure, and bureaucracy when trying to access green technology (**Maretti et al., 2023**).

Climate justice concerns arise in both distributional and procedural terms. Industrialized nations usually enjoy the economic and technological benefits of energy transitions while leaving disproportionately the environmental degradation and labor exploitation of green technology supply chains to the Global South (**Heffron & McCauley, 2017**). Climate policy also tends to exclude frontline communities from decision-making processes, thus falling short of procedural justice standards and undermining democratic legitimacy (**Jasanoff, 2010**).

At the international level, climate negotiations—particularly as part of the United Nations Framework Convention on Climate Change (UNFCCC) and the COP summits—have been criticized for being non-inclusive and non-transparent. **Morgera (2024)** argues that consensus-based formats tend to silence opposing voices and empower corporate lobby, thereby draining public trust and institutional legitimacy. Within the national environment, fragmented governance, weak institutional capacity, as well as weak inter-agency coordination, also undermine effective implementation of climate action (**Bäckstrand et al., 2017**).

Ethical concerns also arise in adaptation and loss and damage. Both "soft" and "hard" adaptation thresholds are identified by the IPCC: some people are unable to adapt, and others suffer irreversible damage like climate-related displacement (**Klein et al., 2017**). These are frequently made in the absence of meaningful consultation with affected groups and the consequential ethical concerns of agency, representation, and justice are significant.

In addition, a consistent failure of intersectional equity in adaptation planning is still a key impediment to building inclusive resilience. An in-depth review of over 1,600 adaptation initiatives revealed that 60% recognized the concept of equity, but with a limited perspective—almost solely on income lines—excluding gender, age, or indigeneity considerations (**Chu & Michaelowa, 2021**). This lack of specificity in conceptualization results in the creation of policies that are insensitive to the multi-dimensionality of vulnerability and reinforce systemic exclusion.

Political obstructionism is another obstacle. Fossil fuel economy interests have been determined to block climate change

reforms through lobbying, media manipulation, and institutional capture. **Lamb et al. (2023)** demonstrate how such political actors use instruments of reputational defense and policy co-optation to stall or weaken climate legislation. Short of confronting such vested power centers head-on, transformative climate action is unattainable.

A new and rather under-explored field of study is the regulation of climate information. As information more and more comes to shape mitigation, adaptation, and monitoring, issues of unequal access, biased sources of data, and a lack of accountability within data systems are coming into view. **Bond et al. (2024)** caution that inadequately regulated systems of data can perpetuate existing disparities and introduce new forms of epistemic injustice to the global climate governance scene.

Recommendations for Future Pathways

In order to effectively meet the intractable policy and ethical dilemmas of climate regulation, impending climate action must be grounded on the pillars of inclusive governance, equity-based funding, transparent accountability, and transformative justice. These elements, in addition to fortifying the legitimacy of climate policies, help ensure that the interests of marginalized populations are factored into the pursuit of sustainability.

➤ **Institutionalizing Inclusive Governance**

Robust climate strategies must have strong emphasis on inclusive public participation, particularly from historically marginalized and vulnerable communities. Practice from American cities such as Seattle and Sacramento illustrates how resident planning agencies and environmental justice committees

can successfully incorporate marginalized voices into environmental policymaking (**Cannon et al., 2024**). These participatory frameworks encourage procedural justice and local ownership of climate action.

➤ **Bringing equity into the climate finance.**

Actually applying just transition principles in climate finance is critical to avoid making economic change more socio-economically unequal. The UNFCCC Work Programme on Just Transition emphasizes fair sharing, protection of workers, and inclusive dialogue (WRI, 2024). Models like "Cap and Share," which encourage per-capita carbon dividend redistribution under a global cap, bring new approaches to mainstreaming equity in climate economics (**Fabre et al., 2025**).

➤ **Enhancing Governance and Legal Accountability**

Legitimacy and transparency concerns are key shortcomings of global and national climate action. COP negotiations have been heavily criticized for enabling business lobbying and failing to represent vulnerable communities. Academic theorists suggest a shift towards rights-based climate regimes, grounded in international human rights law and constitutional principles, to ensure enforceable climate commitments are achieved (**Reuters, 2025**).

➤ **Investment in Climate Education and Empowerment**

Education and capacity development are crucial to empower individuals to facilitate civic engagement based on well-informed decision-making. The Action for Climate Empowerment (ACE) of the UNFCCC promotes awareness, participation, and involvement of stakeholders as pillars of Climate Resilience (**UNESCO, 2022**). Mass deployment of ACE

can construct a more active and enlightened citizenry that can ensure institutional accountability.

➤ **Scaling Community-Led, Tech-Enabled Adaptation**

Technological interventions at the community level need to be given priority so that locally appropriate and scalable adaptation can be achieved. Low-cost early warning systems, mobile advisories for climate-resilient agriculture, and solar microgrids are a few of the cost-efficient ways of improving resilience while ensuring local agency (**Sustainability Directory, n.d.**).

➤ **Promoting gender-transformative and intersectional approaches.**

In order to close structural gaps, climate policy needs to employ feminist and intersectional approaches that take into account the particular vulnerabilities and leadership potential of women, indigenous peoples, and marginalized groups. Innovative new research in the Global South identifies effective strategies like regional-language climate advisories, women-owned cooperatives, and gender-balanced governance structures (**Saigal & Srivastava, 2025**).

➤ **Codification of Climate Justice in Law**

Equity cannot be a theoretical concept; it must be brought into reality through climate law, the courts, and finance streams. Significant jurisprudence in nations such as the Netherlands and Ecuador demonstrate that constitutional provisions, strategic climate litigation, and green finance tools can be an empowering force for promoting environmental justice (**WhiteBlackLegal, n.d.**). Embedding equity in legal and

financial frameworks will make accountability possible and establish enduring structural transformation.

Conclusion

Action to respond to climate change must move beyond the technical or scientific spheres to put climate justice at the forefront of an ethical agenda and a practical imperative. Global South populations, and poor populations in rich countries, bear disproportionately the negative consequences of climate change but are often excluded from the benefits generated by climate mitigation policies. Addressing these injustices through comprehensive, justice-oriented policy-making is not only a matter of morality, but also of effective implementation and the democratic process (**Joseph Rowntree Foundation, 2022**).

The landmark advisory opinion handed down by the International Court of Justice (ICJ) of 23 July 2025 is a turning point in the handling of global climate concerns. It affirms that states are under international law, both the Paris Agreement and settled customary practice, to act collectively to cut emissions and to uphold the human right to a clean, healthy, and sustainable environment (**ICJ, 2025**). The decision enhances the legitimacy of transnational activism and national accountability mechanisms.

But even with this promise, climate policy is still hampered by systemic opposition, most notably by vested fossil fuel interests and mainstream economic orthodoxies. **Srivastav and Rafaty (2023)** identify five strategic moves designed to bypass this obstructionism: (1) accommodation strategies via negotiated transitions, (2) institutional reform, (3) strategic engagement with influential stakeholders, (4) reputation or legal

accountability, and (5) ensuring viable low-carbon alternatives. These strategies provide a realistic route to fair and politically feasible climate transitions.

The integration of social justice in designing climate policy and implementing it should be seen as a priority and not an addendum. Empirical research has proven that the convergence of climate change adaptation and mitigation with poverty reduction and inclusive green growth leads to more inclusive and resilient outcomes (**Joseph Rowntree Foundation, 2022**). Yet, the European Union's "Just Transition Mechanism" criticisms reveal persisting imbalances in finance and elitist strategies, stressing the importance of open and participatory system planning (**Pianta & Lucchese, 2020; MDPI, 2023**).

As the role of climate litigation, particularly in the Global South, becomes more critical in holding governments and corporations to account, there is also a greater need to emphasize the growth of legal capacities. Strengthening civil society networks, empowering public interest lawyers, and judicial sensitization can make litigation a dynamic instrument for transformative environmental justice (**Cambridge A.J.I.L., 2024**).

Briefly, advancing towards effective and fair climate action means a qualitative change: from technocratic, narrow governance models to justice-based, rights-centered climate models. Instilling ethics, civic participation, and constitutional accountability in climate policy guarantees that the most vulnerable are not marginalized—and makes climate justice a fought-for global necessity, not a noble aspiration.

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**Gandhian Approach to First-Time Women Offenders:
Pathways to Rehabilitation and Reformation**

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ABSTRACT

The Gandhian approach to the rehabilitation of first-time female offenders is examined in this study, with a focus on the fundamental values of self-reform, truth (satya), and non-violence (ahimsa). The study explores how Gandhiji's principles might function as a restorative model within the modern criminal justice system, grounded in his vision of moral and social transformation. To empower and reform first-time female offenders, special attention is paid to community-based reintegration programs, spiritual upliftment, and vocational training (Chakrabarti, 2012; Sharma, 2015). The study promotes correctional tactics based on compassion, dignity, and reformation over vengeance, acknowledging the gender-specific vulnerabilities these women face (Nair, 2011). This work aims to resurrect Gandhian thinking as a workable paradigm for compassionate correctional reform in India and abroad by putting forth sustainable, gender-sensitive, and non-punitive alternatives. The study emphasizes how urgently we must move away from punitive tactics and toward transformative justice, especially for women who are first-time in the system.

KEYWORDS

Gandhian Philosophy, First-Time Women Offenders, Rehabilitation, Non-Violence, Gender-Sensitive Correctional Strategies.

1. INTRODUCTION

The modern criminal justice system often leans heavily on punitive measures, frequently overlooking the root causes of criminal behavior especially in the case of first-time female offenders. Women who enter the criminal justice system for the first time often face unique challenges including poverty, abuse, lack of education, and gender-based violence. In such a context, Mahatma Gandhi's philosophy of truth (*satya*), non-violence (*ahimsa*), and self-reform offer a deeply humane and transformative alternative for their rehabilitation. Gandhi's focus on the moral and spiritual awakening of the individual, rather than punishment, serves as a compelling foundation for reforming the penal system to one that prioritizes dignity, compassion, and reintegration (Chakrabarti, 2012). Gandhiji viewed crime as a product of social and moral dislocation rather than mere personal deviance. His approach emphasized the reform of the offender through inner transformation and societal support. He believed that punishment should serve the purpose of *sudhar* (reform) and not *badla* (revenge). This aligns closely with modern restorative justice models, which advocate for reconciliation, restitution, and community involvement over retribution. For first-time women offenders many of whom may have committed offenses due to circumstances like poverty, coercion, or mental distress this perspective can be especially beneficial (Sharma, 2015). The rehabilitation of women offenders should thus incorporate spiritual upliftment, vocational

empowerment, and psychological healing. Gandhi emphasized self-sufficiency and labor as tools for personal transformation. Vocational training, such as weaving, tailoring, or handicrafts, not only instills discipline but also equips women with skills necessary for financial independence post-release. Community-based reintegration programs grounded in Gandhian ethics can reduce recidivism and promote social harmony (Chakrabarti, 2012; Nair, 2011). Gandhian philosophy encourages compassion and empathy in correctional policies. Gandhi was known to personally visit prisons and engage with prisoners with the belief that they, too, could change if provided with the right guidance and moral environment. He strongly advocated for the humane treatment of prisoners, with adequate attention to their mental, emotional, and spiritual well-being. This gender-sensitive approach is essential in understanding and addressing the vulnerabilities of female offenders who often carry the dual burden of societal stigma and institutional neglect (Nair, 2011). India's prison policies, while increasingly acknowledging the need for reform, still fall short in integrating such holistic, humane, and non-punitive models of justice. The Gandhian framework can fill this gap by providing a moral compass and practical roadmap for designing correctional interventions that prioritize healing over harm. Especially in cases involving first-time female offenders, the Gandhian approach enables the creation of an ecosystem where the woman is seen not as a criminal, but as a citizen who can be reformed, rehabilitated, and reintegrated into society with dignity. This study explores how Gandhian principles can be institutionalized within the modern justice system, with a focus on first-time female offenders. It highlights gender-specific vulnerabilities and argues for sustainable, compassionate correctional strategies. By resurrecting Gandhian thinking in contemporary penal discourse, the study aims to foster a justice system rooted in transformation

rather than punishment a model with relevance both in India and globally.

2. OBJECTIVE OF THE PAPER

The paper title on “Gandhian Approach to First-Time Women Offenders: Pathways to Rehabilitation and Reformation” has such objectives as To explore the relevance of Gandhian principles of non-violence, truth, and self-reform in the rehabilitation and reintegration of first-time women offenders, To examine how Gandhiji’s emphasis on moral transformation, vocational training, and community-based support can be applied to address the unique needs and challenges of first-time women offenders, To propose sustainable and gender-sensitive correctional strategies inspired by Gandhian thought that prioritize reformation over punishment for first-time women offenders.

3. METHODOLOGY

Secondary Data and Evidence: This paper utilizes secondary data, derived from a literature review and expert analysis. The necessary information has been gathered from a range of sources, including articles, journals, government reports, census data, and websites.

4. REHABILITATION THROUGH TRUTH

Mahatma Gandhi’s philosophy of *Ahimsa* (non-violence), *Satya* (truth), and self-reform continues to offer a transformative approach to criminal justice, especially for first-time women offenders. Gandhi believed in the inherent goodness of individuals and emphasized that true reform could only be achieved through internal change rather than external punishment (Parekh, 1997). For women who encounter the criminal justice system for the first time often due to socio-

economic vulnerability, domestic abuse, or lack of support Gandhian principles provide a pathway that focuses on healing and reintegration, rather than stigma and marginalization. Non-violence, as Gandhi envisioned, extends beyond physical harm to include emotional and structural violence. Thus, a correctional system that adopts *Ahimsa* avoids punitive methods that inflict psychological trauma, promoting instead a supportive environment conducive to change (Sharma, 2015). *Satya*, or the pursuit of truth, encourages offenders to confront their actions with honesty and develop moral accountability. This internal moral awakening is central to Gandhian reformation. Self-reform was a cornerstone of Gandhi's own prison experiences. He used his time in jail for introspection, spiritual growth, and community service. Applying this model to first-time women offenders, correctional institutions can create reformatory environments that facilitate reflection, vocational education, and community engagement (Nair, 2011). Gandhi's vision aligns with modern restorative justice models, which focus on repairing harm and restoring dignity rather than retribution. Such an approach acknowledges the socio-cultural context of women's offenses and works toward their re-entry as empowered, productive members of society.



5. MORAL ROOTS OF REFORM

Gandhiji's philosophy of social transformation through self-realization and constructive work offers a profound blueprint for addressing the challenges faced by first-time women offenders. His holistic approach to social reform was rooted in moral transformation, vocational empowerment, and a community-based support system all of which remain deeply relevant in today's correctional landscape. He firmly believed that moral transformation must begin from within. He regarded every individual, even those who have erred, as capable of self-purification and redemption. This perspective is particularly powerful when applied to first-time women offenders, many of whom are not habitual criminals but are driven by poverty, abuse, betrayal, or social exclusion (Nair, 2011). Gandhi's method emphasized *atma-shuddhi* (self-purification) through introspection, meditation, and constructive work. In a correctional context, this calls for nurturing spaces where women are encouraged to reflect on their actions and reclaim their dignity, rather than being condemned and marginalized (Sharma, 2015). Vocational training was a critical component of Gandhi's Constructive Programme. He believed in the dignity of labor and economic self-reliance as key to personal and social reform. For women in prison especially first-time offenders lack of education, economic dependency, and absence of skills are major factors contributing to their criminal involvement. By equipping these women with vocational skills such as tailoring, handicrafts, organic farming, and small-scale entrepreneurship, correctional institutions can empower them to rebuild their lives post-incarceration (Chakrabarti, 2012). These skills not only aid in reintegration but also help restore their self-worth. Community-based support is the third pillar of Gandhian reform. Gandhi envisioned a society where marginalized individuals are not abandoned but embraced and supported in their journey of

transformation. Applying this principle, community involvement through NGOs, social workers, self-help groups, and local leadership can play a vital role in offering transitional support to women upon their release. This includes housing assistance, trauma counselling, financial literacy, and job placement services. The community's acceptance is crucial in breaking the cycle of stigma and recidivism. Gandhiji's approach is inherently non-punitive and restorative. It sees crime not as a label but as a moment of moral crisis, requiring healing rather than harsh retribution. Correctional strategies inspired by this philosophy thus emphasize trust-building, character formation, and social reintegration especially for those entering the justice system for the first time.

6. PUNISHMENT FOR FIRST-TIME WOMEN OFFENDERS

Gandhian principles with their focus on non-violence, truth, and moral transformation, offer a fresh perspective on correctional strategies for first-time women offenders. Rather than relying on punitive measures, Gandhiji's philosophy advocates for rehabilitation through moral reform, vocational empowerment, and community support. This approach aligns with the contemporary need for more gender-sensitive and sustainable correctional systems that address the root causes of criminal behavior, while promoting reintegration into society.

6.1 Moral Transformation and Self-Reform (Atma-Sudhar)

Central to Gandhian thought is the concept of self-reform or *Atma-Sudhar*. Gandhiji believed that true change must come from within, and this principle can guide the rehabilitation of female offenders. First-time offenders, often marginalized by socio-economic factors, can benefit from a moral transformation

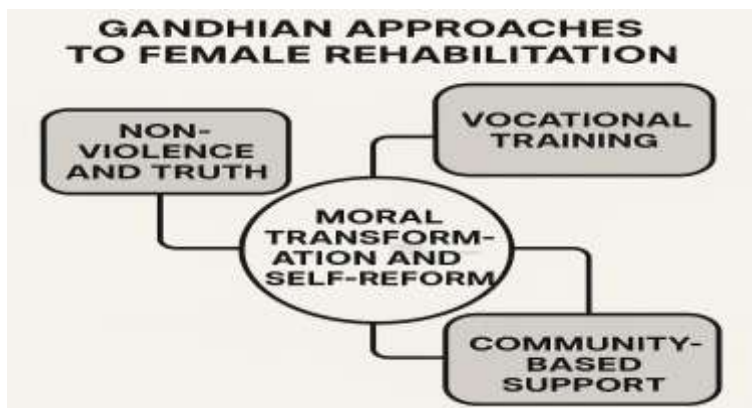
that focuses on self-awareness and accountability. By fostering an environment where women are encouraged to reflect on their actions, accept responsibility, and work toward inner growth, correctional systems can promote sustainable change. Gandhi emphasized the importance of truth (*Satya*) and non-violence (*Ahimsa*) as tools for personal transformation. For women, especially those who have experienced trauma, embracing these values can provide the foundation for emotional healing and social reintegration. Programs that encourage reflection and honesty, coupled with emotional support, can help female offenders rebuild their self-esteem and move toward rehabilitation rather than punishment (Gandhi, 1948).

6.2 Vocational Training and Economic Empowerment

A key component of Gandhian rehabilitation is vocational training and economic self-reliance. Gandhi's philosophy of *Swavalamban* (self-reliance) can be particularly beneficial for women in prison, many of whom face economic challenges both during and after incarceration. Vocational training programs, such as tailoring, handicrafts, or other skill-building activities, equip women with tangible skills that can facilitate their reintegration into society. By focusing on economic empowerment, these programs reduce the likelihood of reoffending, as they provide women with the tools to become financially independent and self-sufficient. vocational programs rooted in Gandhian values can promote dignity, as they emphasize the importance of productive labor, which Gandhi viewed as central to individual and societal well-being. Providing female offenders with a sense of purpose and autonomy can reduce feelings of disempowerment, which often contribute to recidivism (Gandhi, 1931).

6.3 Community-Based Support and Social Reintegration

Community support plays a crucial role in the Gandhian vision of rehabilitation. Gandhi's emphasis on social cohesion and cooperation is integral to the reintegration of first-time offenders. The social stigmas faced by women in the criminal justice system can be alleviated through community-based programs that facilitate acceptance and support. These programs should involve not only correctional staff but also local communities, empowering them to take an active role in the rehabilitation process. Gandhi's model of *Sarvodaya* (universal upliftment) highlights the importance of collective welfare and mutual respect. Reentry programs based on this principle can help women offenders build strong support networks that encourage positive behavior and provide emotional, psychological, and practical assistance upon their release. This holistic approach reduces the chances of recidivism by addressing the social and emotional factors that contribute to criminal behavior, such as poverty, lack of education, and limited social support (Gandhi, 1947).



Theme	Gandhian Principle	Application in Rehabilitation
Self-Reform	<i>Atma-sudhar</i> (Self-Purification)	Emphasizes personal transformation through moral introspection
Truth (Satya)	Honesty and accountability	Encourages acceptance of wrongdoing as a step toward healing
Non-Violence (Ahimsa)	Compassion over punishment	Advocates for humane treatment and emotional healing
Vocational Training	Self-reliance (Swavalamban)	Empowers women economically to reintegrate into society
Spiritual Upliftment	Inner strength through faith	Supports emotional and moral well-being during incarceration
Community-Based Reintegration	Social support and service	Reduces stigma and aids social acceptance after release
Gender-Sensitive Interventions	Respect for dignity and equity	Addresses trauma, abuse history, and family roles of women

CONCLUSION

In conclusion, this study underscores the profound relevance of Gandhian principles in shaping a transformative and restorative approach to the rehabilitation of first-time female offenders. By focusing on self-reform, truth (satya), and non-violence (ahimsa), Gandhiji's vision of moral and social transformation provides a compassionate framework for reforming women within the criminal justice system. The emphasis on community-based reintegration programs, spiritual upliftment, and vocational training offers a holistic approach that not only empowers but also heals the individuals involved, fostering their reintegration into society with dignity and respect. This work highlights the critical need to move away from punitive measures and adopt gender-sensitive, restorative justice practices that account for the unique challenges and vulnerabilities faced by first-time female offenders. By embracing Gandhian values, correctional tactics can shift from vengeance to reformation, enabling a more just, humane, and effective system. The study advocates for a global reevaluation of punitive frameworks and calls for the implementation of Gandhian-inspired, sustainable solutions that prioritize rehabilitation, dignity, and compassion, offering a more equitable and restorative future for women involved in the criminal justice system.

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**Sustainable Environmental Education:
Children as Champions of Climate Change in Rural India**

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Abstract

Education is one of the powerful tools of social change. In an era of climate concerns, environmental education has emerged as a vital component in the grassroots intervention of rural India. Having rural areas as residences for most citizens, establishing sustainable green promotion through environmental education creates commendable progressive changes. The intervention research has shown that targeting children as champions of climate change and educating the local animators paves a path to sustainable development, tangibly. This intervention took place with the selected modules for rural children and local animators in the villages of Dindigul District, Tamil Nadu, India. The objectives of the study are to present the knowledge and understanding of climate change to rural children; to empower them in making micro changes from an environmental perspective, and to propose recommendations and policy changes in promoting sustainable environmental education. Indeed, having children as the champions of climate change has shown a wider result of the village communities and organisations actively contributing to sustainable development.

Key words: Environmental education, Climate change, Children, Sustainability, Rural India

Introduction

Climate change is the greatest threat that humanity has ever faced. While climate change affects everyone, the most affected are children and young people, resulting in increased numbers of deaths due to natural hazards, growth in non-communicable diseases, and damage to habitation and infrastructure. Climate change's indirect effects can also derail children's developmental trajectories, for example, through conflict, vector-borne diseases, economic dislocation, undernutrition, or migration, making it harder for them to reach their full potential. As some of the most vulnerable members of society, children generally suffer whenever there is social upheaval.

Children are largely left out of discussions about appropriate responses to climate change, but they ought to be central to these debates because they—as well as future generations—have a much larger stake in the outcome than one does. The focus on children's engagement is not only important to achieving Sustainable Development Goals but also central to the rights of children and adolescents as custodians of the planet, and as such, mobilizing their ideas and voices can lead to better action on the part of sustainable development.

Sustainable Development

The Sustainable Development Goals are a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet. They recognize that

ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection and job opportunities, while tackling climate change and environmental protection (Colglazier, 2015). Of the 17 goals, Goal 7 underscores the necessity of affordable and clean energy sources, with a particular emphasis on increasing the share of renewable energy in the global energy mix. Goal 11 focuses on building sustainable cities and communities, addressing climate-related challenges such as air quality and waste management. Goal 12 promotes responsible consumption and production practices to minimize the environmental impact of goods and services, aligning with climate change mitigation goals. Goal 13 explicitly addresses climate action, emphasizing resilience, adaptation, and awareness to combat the impacts of climate change (Agbedahin, 2019). While Goals 14 and 15 primarily target life below water and life on land, respectively, they also recognize the interconnectedness between climate change and the health of oceans and terrestrial ecosystems. Finally, Goal 17 encourages partnerships and cooperation to facilitate the effective functioning of carbon markets, recognizing the collaborative effort required to address the complexities of climate change. These SDGs collectively form a comprehensive framework for addressing climate change and building a sustainable, resilient future for our planet. Children play a crucial role in addressing climate change and achieving the Sustainable Development Goals (SDGs). Recognizing the impact of climate change on current and future generations, it is essential to involve children in sustainable practices and educate them about the SDGs related to climate action (Wang et al., 2025).

Promoting Sustainable Action

Building on the growing momentum for climate action empowers children to learn about sustainability and act to protect the planet. Engaging children, and parents, in interactive missions on topics such as reducing single-use plastic, saving energy and water, fixing and reusing clothes, eating more vegetables, and sharing scientific facts can create an awareness in the mindset of the children for a better home on earth. There is a dire need for rural children to be aware of the difference they can make through everyday actions. Lifelong behaviours are shaped at an early age, and one hopes that providing the knowledge and tools to help build a more sustainable future can lead to a lasting impact.

Need for Children to be the “Champions of Climate Change”

❖ Climate Crisis

Climate is currently in a state of crisis. The fate of the planet may soon become children’s largest responsibility. While this ultimately affects everyone, children, those in low socio-economic standing, and future generations may be impacted the most by an increase in disease, poverty and lack of accessibility to essential resources. Every year, the education of 38 million children is disrupted due to the climate crisis (Save the Children, 2022). As the world becomes increasingly digital and an indoor-focused society, especially children, are disconnected from the natural world. Nature-Deficit population lacks the experience, respect and understanding necessary to combat the climate crisis (Louv, 2008). Under the overarching sense of urgency, there is a task with a critical responsibility.

❖ **Environmental Identity**

During this time, children are also developing their environmental identity. This environmental identity refers to the child's confidence level while in a natural setting and the draw or lack of draw to be outdoors. Developing this identity lays the foundation for their call to sustainable action. With significant influence from the relationship adults in their life have with nature, it is important for parents, family members, and teachers to encourage a sense of wonder, curiosity and respect for the natural world. Engaging in positive experiences in nature as young children increases their comfortability and curiosity. These experiences lead to a deep love and connection with the natural world while building upon one another to develop a child's environmental responsibility.

❖ **Environmental Stewardship**

As children age, they begin to develop and become stewards of the earth. With their foundation of positive experiences, they can begin to explore more serious topics such as climate change and the impact of sustainable and unsustainable actions. Empathy is at the heart of caring for nature. Studies showed that those who have positive experiences in nature feel a stronger connection and are therefore more inclined to commit to protecting it. As children grow and develop, they internalize what is deemed important by those around them. If educators and adults demonstrate love and respect for nature, children will follow.

Objectives of the Study

The objectives of the study are to present the knowledge and understanding of climate change to rural children; to empower them in making micro changes from an environmental

perspective, and to propose recommendations and policy changes in promoting sustainable environmental education. The goal is to empower them to become informed, engaged, and effective champions of climate change, working together to build a more sustainable future for all.

Responding to the signs of the times

Action for climate change is not just the need of the hour; it's crucial for the well-being of our planet and all its inhabitants. The evidence is clear: greenhouse gas emissions are driving global temperatures upwards, leading to a cascade of negative consequences, including rising sea levels, extreme weather events, and widespread ecosystem damage. Fortunately, there's still time to act. While the challenge is complex, countless individuals, communities, and organisations are already taking steps to reduce emissions and build resilience. Here are three-level interventions to work with children. They are as follow:

Level 1: Organizational level - Building Awareness and Understanding

Level 2: Individual level – Being Responsible for my surroundings

Level 3: Community level - Creating Civic Consciousness on Mother Earth

Organisational level - Building Awareness and Understanding

DEEPAM (Dynamic Education and Empowerment Promoting Agency for Marginalised), a Community Based Organisation (CBO) working at the grassroots level coordinates

evening study centres in 80 villages in Dindigul District of Tamil Nadu State, India. Each of these centres has one animator who takes care of the children after their school programme. At the initial stage, all these village animators were given intense training regarding climate change with the help of a leading environmentalist. He took them to the garden. Under each tree, they were given an orientation on how the world came into existence. He also explained about the different process that naturally takes place on the planet.

After a quarter, the second level of orientation was given to the animators on climate change and the Constitution of India. As an Indian citizen, the fundamental duty of each citizen is to take care of nature and Mother Earth. This programme highlighted how each child has to take responsibility for the ecosystem, and the animators were to give it back to them.

The periodic evaluations of the performance of children as champions of climate change have been carried out. These sessions were mutual learning sessions in which they were able to motivate the peer group animators, too.

Individual level – Being Responsible for my surroundings

The second level of intervention at the individual level was approached creatively. Through some powerful video clips on the cry of Mother Earth, the causes of uncared nature and the role of children in protecting nature were depicted. Subsequently, they expressed that they will avoid the usage of plastics, minimise the use of non-recyclable goods, avoid pollution, plant trees and take care of the existing plants. Various programmes such as village-level summer camps, summer courses, skill training and exposure visits for the children have been focusing on climate change. These children were made into

groups to display what they understood of the word 'climate change' in a chart drawing. They were invited to articulate their understanding, and they explained it well. Further, they were oriented on their responsibilities in caring for our Mother Earth.

Community level - Creating Civic Consciousness on Mother Earth

Rally and planting trees of the children under the guidance of animators from Alagarnayakkanpatti, M. Pudupatti, and Sithaiyankottai, with the support and encouragement of the DEEPAM staff, organised an awareness rally to promote the importance of saving and protecting our Mother Earth. As part of this initiative, these children planted several saplings at the Government Hospital in Sithaiyankottai. The active participation of students from all three centres was commendable, and their enthusiasm made a significant impact. The rally served as a powerful awareness drive, reaching out to passersby, local residents, and shopkeepers in the area. The various community events and cultural programs focused on climate change, followed by an inspiring and thought-provoking message, renewed their sense of responsibility toward our environment.

The highlight of the day was an impressive science exhibition where students showcased their creativity through projects made from waste materials, demonstrating the concept of 'wealth out of waste.' The community-level celebrations are a memorable and meaningful experience, reinforcing our commitment to nurturing and empowering the children in their community. With the support of local leaders, sapling distribution was done in some of these villages. The children were motivated to take care of the greenary too.

Outcome

When children become champions of climate change, the potential blossoms, they gain a deep understanding of the science and its impacts, empowering them to make responsible choices in their daily lives. Critical thinking and problem-solving skills honed through addressing local challenges like waste reduction or tree planting nurture future leaders who can effectively advocate for change. This ripple effect extends beyond individuals, fostering community engagement, collaboration, and a shift towards sustainable practices. As children's voices rise, they hold policymakers and businesses accountable, accelerating the transition towards a low-carbon future. Ultimately, empowering children as climate champions isn't just about individual growth; it's about nurturing a generation driven by hope and optimism, one that actively builds a more sustainable and equitable world for all.

Conclusion

In the coming year, DEEPAM aims to inspire and equip children to become active champions in the fight against climate change. By fostering their understanding, igniting their groups, and nurturing their collaboration, we may pave the way for a generation of informed and empowered leaders. The rural villages buzzing with children-led initiatives, teeming with innovative solutions, and a global consciousness awakened by their passionate voices can become a better place of health and happiness. Their actions, though small, hold the potential to create a ripple effect, influencing individual choices, community practices, and even larger-scale policies. Community members wish to remain dedicated to providing children with the knowledge, tools, and support they need to thrive as climate champions. Let their enthusiasm be a beacon, guiding us towards

a future where sustainability is not just a goal, but a reality woven into the fabric of our society. In this process, children become champions in ensuring they inherit a planet worthy of their boundless potential. By joining hands with them, we wish to build a tomorrow where hope blossoms, innovation flourishes, and sustainability prevails. Let our joint efforts offer the children and the planet a brighter future.

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Sacred Stones and Stories: The Jain Relics of Kallil Temple**Ms. Anusree P A**

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Abstract

Kallil Temple is a unique rock-cut shrine located at Kallil. The temple is a living example of the intersections of the Jain and Hindu religions. Traditionally, it was associated with Jain presence in the region and later with the revival of Brahminical religion, witnessed a religious transition. This study examines the historical, archaeological, and cultural dimensions of the site. It examines how natural landscapes transform into sacred landscapes and its significance in Indian historical traditions. Overall, it is a blend of history, ecology and culture.

Key Words: Jainism in Kerala, Kallil Temple, Rock Cut Architecture, Sacred landscapes, IKS.

Introduction

Kerala, a narrow strip of land that lies at the southernmost part of India, is distinguished from other parts of the subcontinent, because of its geographical features.¹ The long range of mountains (Western Ghats) on the eastern side separates it from the neighboring states of Tamil Nadu and Karnataka. The long coastal line attracted the adventurous foreign traders and travellers to Kerala from the very ancient time onwards. The geographical isolation helped Kerala to maintain a culture of its own unique identity.

The emergence of heterogeneous religions, especially Jainism and Buddhism (Budha Matham), had far-reaching consequences on the social life and culture of India, and influenced Kerala. But it took a longer time for Aryanism,

Buddhism and Jainism from the north to penetrate into Kerala. Even though only a few remains are available, it is true that this religion once flourished in Kerala. There is no clear-cut evidence to show when and where the Jains reached Kerala for the first time. One of the earliest pieces of evidence on the heterodox religions is available from Pattanam, a potsherd of Indian Rouletted ware with a Brahmi label 'amana' (sramana) which throws lights on Jainism in Kerala.ⁱⁱ

Jainism is one of the most ancient religions in the world founded around 6th century BC.ⁱⁱⁱ The word 'Jain' is taken from the word "Jaina" which means 'getting victory over thyself and the peripheral world'.^{iv} The Jains are considered more respectable than Gods. There were 24 *theerthankaras* or holy men.^v Jain temples and shrines were mostly dedicated to them. Symbols related to the Jain ascetics help us to identify them in relation to *theerthankaras*. Jainism believes in the cyclical nature of the universe.

Jainism in Kerala

It is believed that the Jainism had reached Kerala in 3rd century BC. During the reign of Chandra Gupta Maruya, Sravana Belgola in Karnataka was one of the strong hold of Jainism in South India.^{vi} Maurya was a great promoter of Jainism and during his reign he sent many missionaries to different parts of his empire to propagate the ideas of this religion; among them some of them may have to migrate to South India. This is considered to be the first Jain migration to Kerala.

According to Jain traditions, after 25 years of rule, in 298 BC, he abdicated his throne, retired to the retreat at Sravana Belgola in Mysore along with Jain saint Bhadrabahu and where he fasted to death.^{vii} The disciples of Bhadrabahu migrated to the interior parts of South India in search of a tranquil place for meditation and spread their religious ideas.

Many of the south Indian dynasties like Gangas, Kadambas, Rashtrakutas, Chalukyas of Badami etc... gave patronage to them.^{viii} As a part of Jain missionary activity, they may convert many Cheras into their religion. Prince Ilango Adigal, the author of *Shilappathikaram* is believed to be a Jain, who lived at Thrikkanamathilakam (The Kunavaikottam of Tamil literature) and in those days Mathilakam was a famous centre of Jain religion and learning.^{ix} Jainism flourished in South India under the patronage of rulers but the revival of Brahminical religion and Bhakti movement in north India by about AD 5th and 6th centuries was a blow to Jainism. There are references to the Kalabhrakula reigning Karnataka during 4th and 5th centuries in Buddhist Pali literature. The Kalabhras were the patrons of Buddhism.^x The Kalabhra episode in Kerala history belonged to 5th century strengthening this viewpoint that the Jains may also have come to Kerala along with the Buddhist and other social groups during this period. Most of the Jain monuments and monolithic shrines of Kerala (Chitharal, Thirunandikkara, Kallil, Kaviyur) belonged to 8th and 9th centuries.

In ancient times Kerala was a part of Tamilakam.^{xi} It helped them to come closer and to exchange their customs and traditions and also to develop trade between them. The mountain passes and land routes on the eastern side enabled people of these regions to interact. Since the Jains were considered traders (eg. Baniyas) they may naturally come to the land. The Baniyas were trading communities from Bombay, Gujarat and Katjhiyawar, settled at Mattancherry, Cochin.^{xii} They were the worshippers of Jainism. Important Jain centres of Kerala are situated in the present-day districts of Kazargod, Wayanadu, Palakkad, Ernakulam, and Alapuzha.^{xiii} Majority of the Jain relics are also available from these places, strengthen this assumption.

It is possible that Jainism spread to Kerala from Tamil Nadu through Kumali and Devikulam also.^{xiv} Kothamangalam and Munnar regions are connected with the Madurai district through Bodinaikannur pass was a shortest trade route from Tamil Nadu to Mahodayapuram, Chera capital.^{xv} The Kallil temple of Perumbavoor, on this trade route evidences the existence of Jains in that region during that period. Most of the Jain settlements and shrines of Kerala are on the highlands, mostly on the hilltops and forest areas associated with trade routes.^{xvi}

The only evidence of the presence of Jainism in Kerala is some Hindu temples of today, were originally Jain temples. Many relics and studies prove the existence of Jainism in Kerala. The remains of temples and symbols of Jain Theerthankaras have been found from different parts of Kerala- Chitharal, Kodungallur, Iringalakkuda, Jain Medu, Kallil etc..^{xvii}

Kallil Temple

Methala Kallil temple is one of the most important cave temples of Kerala is located 13 kms from Perumbavoor.^{xviii} According to various sources the village name Methala is derived from the word “Mel-thala”.^{xix} The name itself signifies its importance in the history of Kerala. But the lack of evidence makes it difficult to in depicting the magnificent history of this village.

The best source materials for the study of local history are its place names. There are a lot of place names in Kerala begin or end with Kallil/ Palli. Generally the meaning of this word is non- hindu temple. In ancient time “Kall” denote the presence of Jain and Buddhist temple.^{xx} According to a generally accepted notion the term Kallil is derived from the word ‘Kall + ill. Kall’ means ‘Kallu’ or stone and “ill” means “Illam”. These two words merged to Kallil temple.^{xxi}

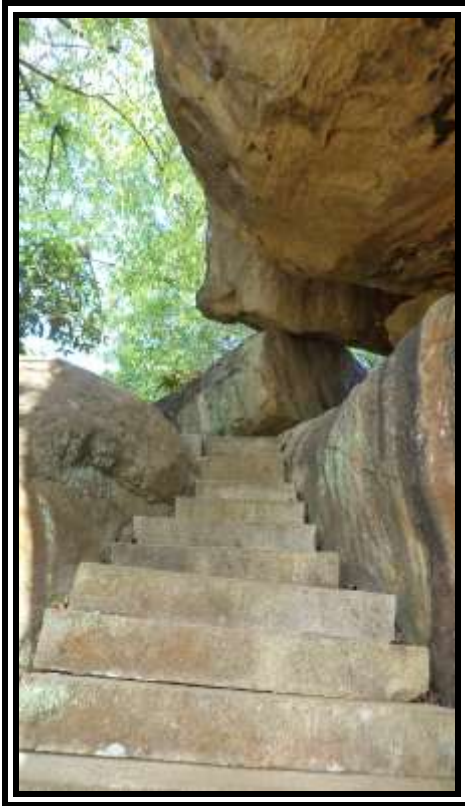


Image of Thirthankara on the top of the temple,
Kallil Temple

A naturally made cave temple is located in a thick forest area, is cut from a huge rock situated on the top of the hill. T.K Velu Pillai took the Kallil temple to be a Buddha temple.^{xxii} There are three idols in the *Garbhagriha* (later addition). Two are those of *theerthankaras* made of stone and one is that of a Goddess made of *Panchaloha*, is the main deity now, behind these there is an idol of *JainaYakshi*.^{xxiii} It is also assumed that the images set up in the shrines are that of Parswanatha, Mahaveera Theerthankara and Padmavati.^{xxiv}

The idol of Mahaveera on the wall looks like sitting on a royal or sacred throne. Presently no one is permitted to see the idol so it is not possible to identify it. The image of a *theerthankara* is also covered by the image of Goddess. The images of *theerthankaras* are installed inside the temple facing towards east and the other facing towards north that of *Mahaveera* and *Parsvanatha* respectively.^{xxv} Famous historian T.A. Gopinath Rao famous archaeologist and epigraphist conclude that it was that of Mahaveera.^{xxvi} Dr. M.R. Raghava

Warrier believed it to be Parswanatha.^{xxvii} A lion totem and the image of snake respectively, the peculiarities of these *theerthankaras* are also evidenced from here.^{xxviii}



Back view of the temple (Clicked by the Author)

Another carving of a *theerthankara* figure can also see on the roof of the temple. The figure is incomplete and the main characteristics of the Jain images are absent (triple umbrella, lanchana, tree, swastika etc...). GopinathRao considered it to be the figure of Mahaveera.^{xxix} It is believed to be that of Brahman today.

There is an attempt to carve the figure of a *theerthankara* on an isolated rock on the north east of the cave

temple.^{xxx} An outline has been made with the help of chisel. Another carving of a *theerthankara* with *Padmasana* poster is also incomplete.^{xxxii} A few letter engraving are also found from the cave. We can see some indications of carving letters on some other places. There is a mark to indicate that it is concluded. A *yantra* has also been portrayed on the rock. Images of conch and a bird is also engraved of the rock surface- **Conch** was a peculiarity of *Neminatha* and the bird can be assumed as a **Baj** (eagle) or a **curlew** (a large brown bird with long legs and a long thin bill that lives near the water) were the symbols of *Ananthanath* and *Suminath* respectively.^{xxxii}



Inscription from the temple premises (Clicked by the author)



Image of a Conch inscribed on rock, Kallil Temple (Clicked by the author)



A *Baj* (eagle) or a *curlew image engraving from Kallil* (Clicked by the author)

The technique of constructing such cave temples is adopted from the Pallava region of Thondaimandalam. No evidence is available to determine the age in which the temple

was constructed. No room has been built in the rocks and there is any pillar to support the roof. The idols were consecrated within the natural cave. This makes it impossible to determine the age on the basis of cave architecture. The only source that helps to identify the style of their architecture was ‘the roundish face, the straight shoulders, the limbs in proportion to the trunk all indicates the characteristics of an AD 9th century sculpture and architecture’.^{xxxiii}

For the Indians, Geographical landscapes are a part of their everyday life. Every hill, mountain, river, sea and forest has a story of its own saints or Gods. It is rooted in the history and tradition of the nation. According to Diana L Eck India’s national identity is deeply rooted in its interconnected sacred geography.^{xxxiv} Jainism includes all living beings, including plants, and holds that they have souls and are of infinite value. According to the Jains, this earth is the place of dreams, of actions, of moral and aesthetic culmination. The fundamental principles of Jainism ‘Ahimsa’ and ‘Apagraha’ emphasised the withdrawal from worldly attachments. Elevated and forest terrains provided isolation from worldly aspects of life and were conducive for meditation, attracted the Jain monks towards that. The wild or forest ambience resonates their ecological ethics reflects a sophisticated environmental consciousness of the Jains. The sacred landscapes became centers of knowledge production and spiritual authority. They used landscapes as a medium for their spiritual realisation. The hillock, which is crowned by a huge rock upon which the temple is constructed, is presently under threat due to landslides and human encroachments.

Conclusion

The advent of Brahmins and the process of Aryanization was not an isolated movement. The Kalabhra interregnum (5th and 6th century) witnessed the settlement of Brahmins in Kerala.^{xxxv} It was carried out on a subtle manner not by the force

of arms but by the arts of peace. The Namboothiri Brahmins the representatives of Aryans made a deep and profound impact on Kerala society and culture. One of the major ideological developments of the period was Bhakti movement which gave more importance to Vishnu, Siva and Bhagavati resulted in decreasing the influence of Jainism and Buddhism in Kerala, had also affected the Kallil Temple and the temple renamed as Kallil Bhagavathy temple in the upcoming centuries.^{xxxvi} There was evidence for evidence for Jain massacre in and around Perumbavoor. In an exploration, V.V. K Valathu found Slaughter stones or "*Soolasayikallu*" / "*kolakkallu*" from Asamannoor village is material evidence of Jain slaughter in this region.^{xxxvii} The idol worship in Jain temples shows elements of Bhakti. The Aryan influx and the Bhakti lead to the decline of this Jain shrine. Jainism was not a popular religion in Kerala, it was confined to the Jain monks and its strong adherents. In the process old Jain shrines were either demolished or converted as Hindu centers of worship. Presently, Kallil temple is under the Pisharady family. Even today the descendants of Baniya families and Jains communities are visit Kallil, which reflect their persistant community memory. Even though the temple is not a large one, it provides ample evidences that the Jains lived and worked as an organized community with considerable wealth in certain parts of Kerala.

ⁱ A. Sreedhara Menoon (2007), *A Survey of Kerala History*, DC Books Kottayam, p-13.

ⁱⁱ Gurukkal, Rajan and Warriar, Raghava (2018), *History of Kerala Pre-Historic to Present*, Orient Blackswan, p.6

ⁱⁱⁱ Sharma, R.S. (2005), *India's Ancient Past*, Oxford University Press, New Delhi, p- 133.

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^{xviii} Achutha Warriar, S (2003), *Kerala Samskaram* (Mala), The State Institute of Languages,

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^{xix} *Ibid.* p-44

^{xx} *Vanji Review*- Perumbavoor Municipality, Perumbavoor, 2009

^{xxi} Valath, V.V.K, (2006), *Keralathile Sthala Charithrangal- Ernakulam Dist* (Mala), Kerala

Sahithya Acaademy, Thrissur ,p.125

^{xxii} Velu Pillai, T.K, (1940), *Travancore State Manual*, Vol. IV, Government of Kerala, Kerala

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^{xxiii} Padmakumari Amma. *Op.cit.* p-148

^{xxiv} Rajendran, P.G, (2000), *Kshetra Vijnana Kosham* (Mala), D.C. Books Kottayam, p- 266.

^{xxv} See Raghava Warriar, M.R, *Jainamatham Keralathil* (Mala),

^{xxvi} Rao, Gopinatha, (1910), *Travancore Archaeological Series*, Vol-II, Methodist Publishing House, Government Press, p- 130.

“I believe how ever that it is perhaps not *Parsvanatha*, but only a replica of *Mahavira*; for, it has over its head the triple umbrella and not a hood of the Cobra, which distinguishes *Parswanatha* from the other *Thirthankaras*”.

^{xxvii} See Raghava Warriar, M.R, - *Op.cit*

^{xxviii} Padmakumari Amma. *Op.cit.* p-148

^{xxix} Rao, Gopinath, *Op.cit.* p- 130

^{xxx} Padmakumari Amma. *Op.cit.* p-152

^{xxxi} Padmakumari Amma. *Op.cit.* p-152

^{xxxii} See Thaper-, Romila, (2002), *The Penguin History of Early India*, Penguin Books, Gurgaon

^{xxxiii} Padmakumari Amma, *Op.cit.* p-154

^{xxxiv} Refer Eck, L Diana, (2012), *India: A Sacred Geography*.

^{xxxv} Refer Gurukkal ,Rajan and Raghava Warriar- M.R, *Op.cit.*

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^{xxxvii} Refer Gopalakrishnan, P.K, (1974), *Jainamatham Keralathil (Mal)*, Thiruvananthapuram, p.40

**From Social Emancipation to National Liberation: Sabari
Ashram in the Freedom Movement of Palakkad**

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Abstract:

This paper explores the role of Sabari Ashram in the national movement of Kerala, particularly in Palakkad. Influenced by the ideals of Mahatma Gandhi, the ashram combined social reform with political activism by promoting equality, self-reliance, and non-violent resistance. It served as a center for grassroots mobilization and nationalist awakening.

Founded by Krishna Swamy Iyer, the ashram reflected his commitment to the upliftment of marginalized communities and the removal of caste discrimination. His leadership integrated Gandhian constructive work with regional activism, thereby strengthening the foundations of the freedom movement in Kerala.

Key Words: Sabari Asram, Gandhiji, National Movement

The Indian national movement was not confined to major cities alone; it was strengthened by regional centre's that carried the spirit of freedom to the grassroots. In Kerala, particularly in Palakkad district, Sabari Ashram emerged as one such influential centre. Founded with the objective of uplifting the marginalized and lower caste communities, the ashram was deeply inspired by the ideals of Mahatma Gandhi and his constructive programme.

Sabari Ashram combined social reform with political activism, promoting equality, self-reliance and non-violent resistance. It became a training ground for volunteers and a meeting place for nationalists, thereby playing a crucial role in spreading nationalist consciousness in the region. By linking social emancipation with the broader struggle for independence, the ashram significantly contributed to the growth of the freedom movement in Kerala and Palakkad.

The Sabari Ashram was founded on October 2, 1923 on the lines of Sabarmathi Ashram. The Ashram is located in Akathethara, a village in Palakkad district, located in the shade of the beautiful Malampuzha hills, near Nadakavu Railway gate.

The founding of the ashram gains more historical significance when we learn that the man behind it was T.R. Krishna Swami Iyer who belonged to an orthodox Tamil Brahmin family. In this part of Kerala (i.e. Palakkad), Caste system with all its brutalities continued to exist. Krishna Swami Iyer took this as a challenge and his response, therefore came in the form of an institution which became famous as ‘Sabari Ashram’. The establishment of the same played a pivotal role in the social and national movement in south India.

The Ashram, where Mahatma Gandhi visited three times during his visit to Malabar, was in thick of activities during the freedom struggle and the social liberation movements. It was a centre of many a brave movement in the liberation of weaker sections. Founding of the Sabari Ashram played a decisive role in the history of the social reform movement of South India.

Krishna Swami Iyer understood the need of social reform in the then social setting. In the society there existed all the caste evils. Though he enjoyed all the social privileges in the

society, he was aware of the sufferings of disadvantaged classes, how they are brutally exploited and socially segregated. He was against the social evils like untouchability and unapproachability. He wanted a fundamental change in attitudes towards these social evils and other caste customs. He thought that “uplifting a Harijan boy is best than chanting Gayathri mantras a thousand times.”

He wanted to advocate the ideas of self-confidence, self-help and self-reliance. He adopted the Gandhian idea of self-realization. To Gandhiji, “Man was in essence divine and the whole purpose of life was to realize his divinity in conduct, individual and collective. Religion, Philosophy, Ethics, Social Science, Economics, Politics – Theory and Practice all must contribute to this one supreme purpose – Self-realization”. Gandhiji’s primary interest was in the transformation of man into a moral being, in overcoming what he had inherited through evolution from his natural ancestry by the principle which transcended nature. Krishna Swami Iyer firmly believed this Gandhian idea of Self-realization.

When Gandhiji became involved in national movement, he made “the struggle against untouchability an integral part of the nations war of independence,” for he considered untouchability “altogether irreligious”. He believed, “none can be born untouchable, as all are sparks of one and the same fire”. So “every Hindu who considers untouchability a sin should atone for it by fraternizing with untouchables”, associating with them in a spirit of love and service, deeming himself purified by such acts, redressing their grievances and helping them patiently to overcome ignorance and other evils due to the slavery of ages. To Gandhi, “removal of untouchability means love and service

to the whole world”, and spells the breaking down of barriers between man and man and between the various orders of being”

Unseeability (theendal) was the utmost social evil that still continued in the then Kerala society. In spite of social reform movements, education yet remained a distant dream to deprived classes like Nayadis. T.R.Krishna Swami Iyer who had occasions to know how the disadvantaged classes of people were severely oppressed and socially segregated was determined to comply with the call of Mahatma Gandhi. The earliest occasion to respond creatively in this direction came in connection with the second annual conference of the state congress held in Athazachira near Akathethara in 1923.

The conference was presided by Mrs. Sarojini Naidu and attended by many leaders like C. Rajagopalachari, Devadas Gandhi, K.M. Panikker, Bee Amma (Mother of Ali brothers), K. P. Kesava Menon, K. Kelappan etc. Krishna Swamy Iyer thought this as the right place to forward his idea. So, he arranged a ‘misrabhojanam’.

The Cherumars and the Nayadis are considered as untouchables by the caste Hindus. The members who belonged to these depressed sections sat together with the savarnas under one roof and took their food. Mrs. Sarojini Naidu, Mr. C. Rajagopalachari and Mr. Devadas Gandhi participated in it. Krishna Swami Iyer arranged this dinning as mark of social equality. He wanted to prove that there is nothing in the notions of untouchability and unapproachability. This inter-caste dinning constituted a land mark in the movement for the abolition of untouchability in Malabar.

This incident invited unbridled wrath of his community. The Brahmin community to which he belonged turned against

him. The 'misrabhojanam' he arranged was a challenge to the very basis of caste hierarchy. The immediate reaction to this was his ex-communication. He along with his wife and children has to leave the Kalpathi Gramam. His friends and relatives were strictly warned against keeping any sort touch with him. But Krishna Swami Iyer was adamant in his decision and none of these steps had any effect on him.

In this critical juncture, he was helped by a generous, progress minded man, who belonged to the royal family of Palakkad. The man was Makkal Veettil Appu Yejamanan / Padmanabha Menon. He donated three and half acres of land near Akathethara to Krishna Swami Iyer. This generous and progressive act of Appu Yejamanan later contributed to the growth and development of an institution which became the cradle of social reform movement and simultaneously offered a platform for the freedom struggle against the British.

The formal inauguration of the Ashram was made on second October, 1923 by lightning lamp in front of a picture of Mahatma Gandhi. The Ashram was named after the epic and saintly character. 'Sabari', known for the selfless, unblemished devotion and love to Lord Rama. "Krishna Swami Iyer viewed this as "an early expression of human equality and the emancipation of the downtrodden" Notions of purity is broken in the sabari episode. He gathered inspiration from this and named the Ashram as "Sabari Ashram".

The ashram was thrown open to all classes. He collected the students from all castes, like Cherumars, Pulayas, Nayadis etc. Savarna boys were also admitted to the ashram. Krishna Swami Iyer wanted these pupils to mix each other and stay under one roof. He thought that the evil practices like untouchability and unapproachability slowly melt away. These students stayed

along with Krishna Swami Iyer and his family. He also wanted to train the students as satyagrahis for freedom struggle. Many people were attracted by his activities and gave their support to the Ashram. There were almost 35 to 40 students in the ashram that time.

Like 'Sabarmati ashram' daily routine of sabari ashram began at 5'o clock in the morning. After the prayer, and cleaning of the ashram, the students went to the nearby Kalpathi river for a bath. At 7'o clock there was again a prayer and after that a breakfast. Then at 8'o clock the classes would begin. It would continue up to 12'o clock. After lunch, training would be given to the students in spinning and weaving. Along with this, students were also given training in the maintenance of medicinal plant and vegetable gardening. In the evening they went to the Kalpaathi river for a bath and returned to Ashram at 7'o clock. After the prayer dinner would be provided at 8'o clock. They went to bed at 9'o clock. Usually, this was the daily routine of the ashram. He was very strict in observing these rules. Thus, these students studied and stayed in the ashram itself. They never moved to any other schools.

Krishna Swami Iyer's selfless work attracted many national leaders. They vehemently supported him in this venture. In 1926, Rajaji directed Swami Anandatheertha a veteran freedom fighter and a true disciple of Gandhiji to join the ashram to assist Krishnaswami. He was also from an orthodox Brahmin family. His account of the experiences in the ashram highlights the conditions of the untouchables in Palakkad and the activities of the Ashram.

Anandatheertha joined Sabari ashram on 10th September, 1926. When he joined the ashram there were 21 inmates belonging to Nair, Ezhava and Cherumar castes and two Muslim

boys. To teach them Hindi and Mathematics, there were two teachers Krishna Menon and U. Kelu Menon. Weaving was taught by C. Raman Master. The 'Khadi' which produced in the ashram, was sold by the students to the neighbouring areas. Thus, the activities of the Ashram were well disciplined after the model of Gandhi ashram.

The K.P.C.C met at Badagara in north Malabar on a March 1930. It welcomed the launching of civil disobedience movement. It also resolved to send a batch of satyagrahi volunteers from Calicut to Payyannur, at the northern end of Malabar on 13 April 1930, to offer salt satyagraha. The satyagraha committee requested Mr.T.R.Krishnaswami Iyer to organise a second batch of volunteers from Palghat to Payyannur. On this behalf he conducted a propaganda meeting on 18 April at Akathethara near Palakkad. In this meeting K.P.Kesavamenon's sister presented the satyagrahis with a gold ring. under the guidance of T.R.Krishnaswami Iyer the second batch of volunteers started from Sabari Ashram at Olavakkod near Palakkad. Some of the students of the ashram also participated.

Krishna Swami Iyer had the faculty of composing national songs. On certain days the inmates of the hostel went round the village in a procession singing the songs composed by him. The eye witness states that, "Krishna Swami with the students went through Kalpathi singing the songs related to the social evils like untouchability. Brahmins were irritated by this activity. After they cross Kalpathi they sung songs related to nationalism and Freedom movement."Through this activity both the students and the laymen were aware of the necessity of social reform and freedom movement.

Thus 'Sabari Ashram' become the 'Sabarmathi Ashram of South' Like Gandhiji and Kasthurba Gandhi, Krishna Swami Iyer and Easwari Ammal devoted their services to nation. Hearing their activities Gandhiji wish to visit the Ashram. Gandhiji visited the Ashram thrice in 1925 (18-03-1925), 1927 (15-10-1927) and in 1934 (10-01-1934). Third time he came along with Kasthurba Gandhi. Gandhian visit enhanced the name and fame of Sabari Ashram. Gandhiji was very happy to see the responsibility undertaken and carried out by successfully by the volunteers. His words and deeds created an atmosphere of sanctity, which uplifted and purified them. He emphasized the spirit of sacrifice and endurance of suffering for a cause. He pointed out that 'swaraj' meant the breaking of the chains, which bound the minds of man. These chains consisted of fear, selfishness, distress, cowardice and vices of various kinds. A new sense of self-reliance and self-respect emerged in them. The masses of Palakkad especially Akathethara was immensely inspired by this. But some orthodox Brahmins did not like these activities of Gandhiji. They disliked his visit to Ashram, and his campaign against the untouchability. These caste Hindus arranged a black flag procession in the station during Gandhiji's visit in 1934. Hearing this news, Krishna Swami Iyer gained a special permission from southern railway to stop the train before the station. He stopped the train before the Nadakkavu Railway gate, near the ashram. The inmates of Ashram already made a pathway to ashram from there. Krishna Swami Iyer received Gandhiji and his accompanies to the ashram. Thus, he saved the time of Gandhiji and also the prestige of Palakkad.

Almost all the national leaders visited the ashram. It was their centre for discussions and activities. The leaders stayed in the ashram and planned the programmes of freedom movement. EMS Nambuthiripad mentions that once C. Rajagopalachari and

Jamanlal Bajaj toured Malabar for the propagation of Hindi. In Palakkad, they stayed in Sabari Ashram. He along with a group of students visited the sabari ashram to see the leaders. Some other national leaders who visited the ashram were Dr. Rajendra Prasad, Thakkar Baba, Sarojini Naidu, Nariman, V.V. Giri, Kamaraj, Acharya Kripalani, T. Prakasam, Madan Mohan Malavya and the like.

Sabari Ashram had played an important role in the national movement of Palakkad. The ashram was also called as 'Satyagraha Ashram'. Because the inhabitants participated in many movements like salt satyagraha and civil disobedience movement. The students actively participated in picketing of liquor-shops and foreign cloth shops. For this reason, they were called as "Vanara sena". The police thrashed them severely but as soon as they were left off, they again picketed, thus inciting the police to more cruel action. The work of the boys really kept away customers from the shops. Their work intensified the movement and inspired many people. Krishna Swami Iyer was successful in creating a new group of youngsters based fully on Gandhian ideology.

The youths of Akathethara and neighbouring areas were attracted by the activities of the ashram. They were inspired by the selfless work done by TR Krishna Swami Iyer. Notions of Patriotism and nationalism developed. They participated in all the activities of ashram. Thus the ashram became the nerve centre for all political and social activities. The unique status of Akathethara and the neighbouring places for having produced a brilliant array of freedom fighters, bears a living testimony to the rich contribution made by the ashram. For this reason, it is called as 'Bardoli of south India'.

In 1932, All India Harijan Sevak Sangh was founded, and Kerala Harijan Sevak Sangam was formed in 1934 and the 'Sabari Ashram' was handed over to it. Then it functioned as 'Harijan Hostel'.

There are four buildings inside the ashram. The one which Krishna Swami Iyer constructed is at present the hostel, where the students stay. Then there is a prayer hall, constructed in memory of Gandhian visit. It was inaugurated by K. Kamaraj; the then chief minister of Tamil Nadu. Now the office is functioning in this place. In 1971, a Tagore centurion Hall was built, now it is working as a nursery school. The fourth building is dining hall.

Inaugurating the prayer hall of the ashram, K. Kamaraj said "An institution, which has so much sanctity of service, is not to be in this condition. In future it is capable of providing efficient leadership for the reconstruction of the nation".

Sabari Ashram played a significant role in strengthening the national movement in Kerala, especially in Palakkad. Inspired by the ideals of Mahatma Gandhi and guided by the leadership of Krishna Swamy Iyer, the ashram successfully linked social reform with political mobilization. By promoting equality, self-reliance, and non-violent resistance, it transformed grassroots society into an active participant in the freedom struggle. Thus, Sabari Ashram stands as an important example of how regional institutions contributed meaningfully to India's struggle for independence.

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Recent Methodologies to Study Job Satisfaction among New Entrants

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Abstract

Job satisfaction remains a key area of research in organizational behavior and human resource management due to its direct impact on employee performance, productivity, and retention. The present study aims to explore the recent methodologies adopted by researchers to study job satisfaction and to identify emerging approaches suitable for contemporary work environments. By reviewing recent empirical studies, this research highlights a shift from traditional quantitative surveys and standardized scales, such as the Job Descriptive Index (JDI) and Minnesota Satisfaction Questionnaire (MSQ), to more integrated and mixed-method approaches. These include qualitative interviews, longitudinal studies, structural equation modeling, and the use of digital analytics and psychometric tools. Furthermore, the study emphasizes understanding the aspirations and expectations of new entrants into the workforce, whose values and motivations differ significantly from those of earlier generations. Insights from this group serve as a foundation for developing innovative methodologies that better capture the dynamic determinants of job satisfaction, including work-life balance, organizational culture, and career growth. The research concludes that a comprehensive and adaptive methodological framework is essential for accurately assessing job satisfaction in the evolving professional landscape. Such frameworks will enable organizations to design more effective employee engagement and retention strategies in the future.

Key words: Job Satisfaction, Research Methodologies, Organizational Behavior, Employee Motivation, Workforce Aspirations, New Entrants

Introduction

Job satisfaction remains a pivotal concern in contemporary organisational research, as it not only influences individual well-being but also drives organisational performance, retention, and productivity. Over the past few years, researchers have expanded beyond traditional survey-based approaches and adopted novel methodological techniques to capture the dynamic nature of job satisfaction better. For instance, recent studies have shifted from straightforward cross-sectional questionnaire designs to longitudinal panel data, structural equation modeling (SEM), mixed-methods integration, and even data science and visualization techniques (Chen et al., 2023; Bhimani & Saradva, 2023). These methodological advances reflect an evolving workforce context characterised by rapid change, new workforce entrants, shifting aspirations, and hybrid or remote working models. One important strand of research focuses on the aspirations of new labour-market entrants. Understanding the values, motivations, and expectations of new entrants into the workforce is foundational for developing methodologies that remain relevant in the 21st-century workplace. For example, a study on new entrants in Britain and Australia found that each successive job change exhibited a "honeymoon-hangover" pattern in job satisfaction: high initial satisfaction after a job change (honeymoon) followed by a return to baseline levels (hangover) (Zhou et al., 2023). This highlights that job satisfaction for younger or new-entry employees may follow more dynamic trajectories than that of older employees, necessitating methodological approaches capable of capturing

change over time rather than providing a static snapshot. Similarly, entry-time macroeconomic conditions have been shown to influence long-term job satisfaction, emphasising the importance of context and temporal sequencing in methodology (Çitçi & Begen, 2017). Given these shifts in both workforce composition and research methodology, there is a clear imperative to **develop new methodologies** for studying job satisfaction. Traditional instruments such as the Job Satisfaction Survey (JSS) (Spector, 1985) and the Job Descriptive Index (JDI) remain widely used. However, their static design may not sufficiently address contemporary phenomena, such as hybrid work arrangements, career mobility expectations among millennials and Gen Z, increased emphasis on work-life balance, diversity & inclusion, and digital monitoring. For instance, younger entrants often prioritize flexibility, personal meaning, career progression, and autonomy over stable pay or tenure alone (Pew, 2023). Conventional survey scales may not fully capture such evolving constructs. Methodologically, recent research has thus begun adopting mixed-method sequences in which open-ended qualitative interviews complement a broad online survey to unpack the "why" behind satisfaction scores (Wells, 2022). Moreover, data science techniques, including text mining of open responses, visual analytics of large employee survey datasets, and dashboards of real-time engagement metrics, are emerging in the field (Bhimani & Saradva, 2023). These developments suggest that methodologists should adopt both advanced quantitative modeling (e.g., SEM, growth curve modeling) and qualitative or visual methods to generate a holistic understanding of job satisfaction.

In alignment with the objectives of this study, the first aim is to survey and summarize **recent methodologies** adopted by researchers to study job satisfaction, illustrating how the field

is evolving beyond static scale-based measurement toward dynamic, context-sensitive, and mixed-mode designs. The second aim is to explore the **aspirations of new entrants** into the workforce, using these as a basis to understand what needs such new methodological designs should address, for example, capturing career mobility, temporal satisfaction trajectories, flexibility, values-based work, and digital/remote factors. The third aim is to **develop new methodologies** for job satisfaction research that are responsive to the aspirations of new entrants, the complexity of modern work, and methodological advances in measurement, modeling, and data capture. By integrating these objectives, this study proposes to develop a methodological framework that captures job satisfaction in a layered, longitudinal, and multidimensional manner. Such a framework would combine robust quantitative modeling of satisfaction trajectories, qualitative insights into new entrants' motivations and values, and advanced data analytics to visualize and monitor evolving satisfaction patterns in real-time. Given the increasingly fluid nature of work with gig-economy roles, remote/hybrid work, and high early-career mobility, the time is ripe for methodological innovation. Ultimately, the deployment of such new methodologies promises not only greater accuracy in measuring job satisfaction but also a richer understanding of how organisations can respond to the evolving needs of new entrants and craft employee-engagement strategies that reflect contemporary realities.

Objectives

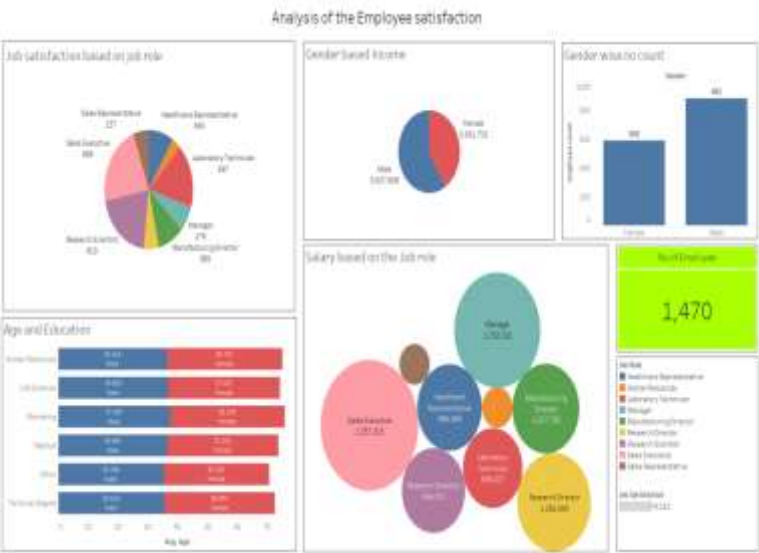
- To know the recent methodologies adopted by researchers to study job satisfaction.
- To know the aspirations of new entrants is a basis for developing new methodologies.

- To study how to develop new methodologies for job satisfaction.

Methodology

The study adopts a secondary data-based methodology, systematically reviewing existing literature, organizational reports, research databases, and survey findings to examine recent methodologies used in studying job satisfaction among new entrants. It identifies emerging tools,models, and analytical approaches reflecting the evolving aspirations and expectations of the modern workforce.

Contemporary Job Satisfaction Research



Quantitative Survey-Based Designs with Advanced Modelling

Traditional survey research remains dominant, but recent studies, especially those from the last few years, increasingly combine survey data with more advanced quantitative modeling. For example, in an industry-specific study, *An Integrated Model to Improve Job Satisfaction: A Case for a Sustainable Construction Industry* (2023), researchers used structural equation modelling (via SmartPLS and SPSS) to test a job-satisfaction model in the construction sector, with constructs such as compensation, work-life balance, career growth, job security, supervision, and environment. In another study, "Identifying Job Satisfaction Parameters among Employees in Higher Educational Institutions: A Mathematical Model" (2023), multi-criteria decision-making (MCDM) tools were applied to identify and hierarchically rank parameters influencing job satisfaction in higher education. These methods reflect a trend toward factor modeling, path analysis, and decision analytics rather than simple descriptive statistics.

Mixed-Methods and Qualitative Integration

A further methodological trend is the use of mixed-methods designs. Rather than relying solely on structured questionnaires, researchers are combining quantitative surveys with qualitative interviews, focus groups, open-ended responses, and thematic analysis to gain deeper insight into the "why" behind job satisfaction scores. For example, a literature review on employee empowerment and job satisfaction, titled "Employee Empowerment and Job Satisfaction: A Literature Review" (2022), described how the authors employed scoping review protocols, screening articles from 2019 to 2024,

extracting key methodological features, and synthesizing thematic findings from qualitative studies. This trend addresses the limitations of purely quantitative design (e.g., capturing nuance, context, and emerging motivators) and suits the evolving work environment conditions (e.g., remote/hybrid work, shifting values).

Data Science, Analytics & Big-Data Approaches

A relatively new methodology involves leveraging big data analytics, data science techniques, visualization tools, and meta-datasets from employee surveys. For instance, the study "Decoding the Workplace & EOR: An Employee Survey Analysis by Data Science Techniques and Visualization" (2023) utilized a nationwide, large-scale employee survey dataset and applied visualization, word clouds, burnout prediction, and dashboard analytics to explore the employee-organization relationship (EOR) and employee satisfaction. This reflects the growing importance of digital measurement, real-time analytics, and data visualization in job-satisfaction research, moving beyond static snapshot surveys to dynamic, multi-modal data.

Contextual & Industry-Specific Modelling

Another methodological shift is toward context-specific modeling of job satisfaction, recognizing that different industries, workforce segments, geographies, and work arrangements may require tailored measurement. For example, the construction industry model (turn0search7) adapts its constructs specifically for that field. In addition, systematic reviews (e.g., turn0search9) highlight how evolving work environments and newer employee cohorts (millennials, Gen Z) require updated constructs and methods.

Thus, researchers are increasingly designing customized scales or models, rather than relying solely on legacy instruments (such as the Job Descriptive Index or Minnesota Satisfaction Questionnaire).

Use of Secondary Data and Integrative Approaches

Some studies highlight the use of secondary data (e.g., organisational records, existing databases, multi-organisation survey archives) and integrative methodological frameworks. For example, in the comprehensive review by Oktaviani & Sopiah (2022) (turn0search5), the authors analyzed the methodological approaches used in job-satisfaction studies, including how secondary data and bibliometric analysis were employed to identify factor structures and trends.

This orientation enables researchers to tap into large-scale datasets, enhance generalizability, and reduce data collection costs and time, while allowing for longitudinal or repeated-measures designs.

Implications for Your Research

Based on these methodological trends, here are key takeaways for designing your study on job satisfaction:

- Consider using asystematic literature reviewor scoping review to establish methodological precedent and identify gaps.
- Use a quantitative survey instrument, but pair it with advanced modelling (SEM, PLS, MCDM) to explore relationships and mediators/moderators.

- Integrate qualitative components (such as interviews/focus groups) if you wish to explore aspirations, mainly since your interest lies in new entrants.
- Explore data analytics and visualisation possibilities if you have access to large companies or organisational datasets.
- Tailor the measurement model (scales, constructs) to your specific population (new entrants) rather than only adopting legacy scales.
- Use secondary data sources (existing surveys, published reports, employee databases) whenever possible to strengthen your methodology and allow comparisons across time or cohorts.

Aspirations and Methodology Development

Understanding the aspirations of new entrants has become increasingly crucial in the development of innovative methodologies across education, training, and employment sectors. The aspirations of new entrants whether recent graduates, trainees, or first-time employees represent their personal ambitions, career goals, and expectations for the future. According to Quaglia (1996), aspirations are deeply tied to an individual's self-concept, motivation, and the socio-cultural environment that shapes their sense of possibility. Hence, understanding these aspirations is not only an exercise in comprehending human ambition but also a foundation for creating meaningful, relevant, and sustainable methodologies that help individuals realize their full potential. In today's rapidly changing professional and educational landscapes, methodologies that fail to consider the hopes and expectations of new entrants risk becoming outdated or ineffective. The

Organisation for Economic Co-operation and Development (OECD, 2025) observed that there is often a gap between young people's career aspirations and the educational or training opportunities available to them. This misalignment leads to skill mismatches, low engagement, and dissatisfaction. Therefore, to design effective methodologies for training, recruitment, or rehabilitation programs, it is essential first to understand what new entrants aspire to achieve. By aligning institutional or organizational goals with individual aspirations, a mutually reinforcing process emerges where both productivity and personal fulfillment can thrive. Aspirations are also critical because they reveal the deeper motivations that drive behavior and engagement. When organizations or educators design methodologies grounded in the aspirations of entrants, they create environments where participants feel valued, motivated, and invested in their own progress. Research by Deloitte (2017) on Generation Z entrants found that this cohort prioritizes meaningful work, career growth, and continuous learning. Hence, methodologies that include mentorship, flexible learning paths, and opportunities for innovation directly resonate with these ambitions. Similarly, in educational contexts, understanding students' aspirations enables institutions to design curricula and assessment methods that encourage creativity, purpose, and future-oriented learning rather than rote participation.

Moreover, studying the aspirations of new entrants helps in mapping future skill needs. Pandya, Ruhi, and Patterson (2023) highlight that higher education institutions must develop methodologies that not only teach current competencies but also prepare learners for the evolving digital economy. Aspirations often reflect future trends, such as a desire for leadership, autonomy, or digital proficiency, and thus serve as early

indicators of the kind of learning or work environments that must be built. This understanding enables policymakers and organizations to innovate continuously creating adaptable frameworks that remain relevant in a dynamic world. Another vital dimension is the role of aspirations in social mobility and inclusion. Education and Employers (n.d.) found that young people's aspirations are often constrained by their social and economic background, gender, or access to opportunities. Hence, methodologies that are designed with a deep understanding of these aspirations can also serve as tools of empowerment and equity. For instance, programs targeting marginalized or underrepresented groups can integrate mechanisms that bridge the "aspiration-attainment gap," a concept explored by Nießen (2022), which refers to the disconnect between what individuals hope to achieve and what they actually attain due to systemic barriers. Recognizing these disparities allows institutions to design supportive, context-sensitive approaches that not only enhance skills but also restore confidence and agency. Developing methodologies based on aspirations also supports adaptability. Aspirations evolve as individuals gain new experiences and insights, and hence, methodologies must include continuous feedback loops to capture this evolution. As SHRM (2025) notes, the workforce of the future will require constant learning and adaptation, and methodologies must reflect this dynamism. When programs remain responsive to the changing aspirations of entrants, they nurture lifelong learners who can thrive in the face of transformation. Thus, understanding aspirations becomes both a starting point and a continuous guide in methodological design.

Innovating Job Satisfaction Research

Early research on job satisfaction was grounded in theoretical models, such as Herzberg's Two-Factor Theory (1959) and Hackman and Oldham's Job Characteristics Model (1976). Herzberg's model distinguishes between *hygiene factors* (such as salary, policies, and work conditions) that prevent dissatisfaction and *motivators* (such as achievement, recognition, and responsibility) that promote satisfaction. Similarly, Hackman and Oldham's framework emphasizes job design factors, including autonomy, task significance, and feedback, as key drivers of meaningful work experiences (Hackman & Oldham, 1976). These theories continue to inform the design of contemporary measurement tools and guide methodological refinement. However, conventional survey instruments often fail to capture the multidimensional and evolving nature of employee experiences. A review of job satisfaction scales revealed inconsistencies in psychometric validity, reliability, and dimensional coverage (Macdonald & MacIntyre, 1997). Recent research emphasizes that new methodologies must integrate quantitative, qualitative, and digital approaches to yield more robust findings (Choi & Lee, 2023). For instance, researchers increasingly employ AI-based sentiment analysis of open-ended responses, machine learning models for pattern detection, and real-time data collection to measure fluctuating satisfaction levels (Zhao & Sun, 2022). Modern workplaces characterized by remote work, hybrid arrangements, and gig employment challenge traditional static surveys. Hence, innovative techniques such as Ecological Momentary Assessment (EMA) where employees report their satisfaction "in the moment" via mobile apps—can provide dynamic and context-sensitive data (Stone & Shiffman, 1994). Similarly, social network analysis can help assess the relational aspects of job satisfaction, such as

collaboration, communication flow, and workplace belonging (Scott, 2017). These new methodologies enable researchers to understand how social and digital contexts shape employees' affective states.

Methodological innovations must account for contextual and psychological factors that influence satisfaction. Factors such as autonomy, ethical climate, organizational culture, and work-life balance are increasingly recognized as significant determinants of employee satisfaction (Kara, 2021). Integrating qualitative interviews and focus groups alongside quantitative scales enhances contextual understanding and ensures that findings are not overly mechanistic. Such mixed-method approaches facilitate triangulation and strengthen validity by capturing both numerical trends and employee narratives (Creswell & Plano Clark, 2018). Ethical considerations must also guide methodological innovation. As data becomes more digital and personal ranging from wearable sensors to emotional analytics issues of privacy, consent, and data security become paramount (Brynjolfsson & McAfee, 2017). Therefore, developing ethical frameworks for data collection and analysis is an integral part of any new methodology on job satisfaction. Ultimately, developing new methodologies should aim not only at measurement accuracy but also at organizational transformation. By combining digital data, psychological insights, and ethical design, organizations can develop evidence-based interventions to enhance employee satisfaction, productivity, and overall well-being. Research indicates that job satisfaction correlates positively with performance ($r \approx .30$) and organizational commitment (Judge et al., 2001). Therefore, methodological innovations contribute directly to both scientific progress and practical human resource management.

Conclusion

The exploration of job satisfaction research reveals that understanding the aspirations of new entrants and integrating recent methodological advancements are crucial for developing innovative and practical approaches to job satisfaction. Traditional survey-based tools, while valuable, no longer capture the complexity of modern work environments, which are increasingly influenced by technology, flexibility, and evolving employee expectations. By examining recent methodologies adopted by researchers such as mixed-method approaches, digital analytics, and sentiment analysis it becomes evident that future research must embrace multidimensional and adaptive techniques. Moreover, recognizing the unique motivations and aspirations of new entrants provides a foundation for designing context-sensitive frameworks that accurately reflect changing workforce dynamics. Thus, developing new methodologies for studying job satisfaction requires blending classical theories with modern tools and participatory research designs. This approach not only enhances measurement accuracy but also contributes to improved organizational practices and the overall well-being and productivity of employees in contemporary workplaces.

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Environmental Advocacy means offering information on ecological and environmental related issues as a way to educate the audience or readers and encourage them to adopt more environmentally sensitive practices as well as to embrace with biocentric worldviews. The prime objectives of environmental advocacy are to create awareness related to pollution and degradation of the environment, along with the effects, thereby triggering activities involving there refurbishing and nurturing of various embodiments of nature by expanding education and academic studies, in such a way that possibly enables to attain environmental renovation and ecological restoration. In this respect, Amitav Ghosh's *Gun Island* (2019) interweaves a legendary tale with the contemporary world's climate catastrophe and the disruptive conditions of the other living beings that unescapably live in. The novel, *Gun Island* incorporates the concept of environmental justice, by presenting the affectations of Sundarbans including, diminution of fresh water, salinity, depleted biodiversity, expansion of oceanic dead zones and others, only to represent environmental advocacy.

Keywords: Climate catastrophe, Conservation of nature, Environmental advocacy, Environmental justice.

In this ever-changing modern world, there is always a need for advocating for ambitious, inclusive action to discourse

climate change and environmental protection. This kind of dynamic discussion about protecting the natural environment prevails extensively in scope. Multifarious levels of Pollution, intensification of climate change and natural resource depletion are all arduous topics that urgently need to be addressed. Insightful activists all around the world are taking various initiatives to drive change, often inspire these considerations. The scholars, academicians and writers from various disciplines of the literary world are keen to contribute their parts by demonstrating the importance of getting people involved in advocating on the environment's behalf. In India, the concept of Environmental advocacy is gaining its momentum among the intellectuals, researchers, social activists and others; resulting in the emergence of new school of writers, who acutely address these unheeded ecological issues in their writings. Ghosh is one such prominent figure in this criterion.

Ghosh's novels endeavour the concept of environmental advocacy by displaying those visible disruptions and disorders of the natural phenomena currently occurring all around the globe because of the unbridled, anthropocentric attitudes of the mankind. The Sundarbans is one of the unique and exceptional landscapes of the Indian subcontinent regions. These natural archipelago surroundings are considered to be the favourite of Ghosh, who constantly carves it out as the conspicuous setting for most of his works including, *The Hungry Tide* (2004) and its sequel *Gun Island* (2019). The story of *Gun Island* revolves around the Bengali folklore legend Bonduki Sadagar and Manasa Devi's Shrine, the Goddess of venomous creatures, which is situated inside the deep mangrove forests of Sundarbans. The shrine is believed to be built by the Gun Merchant Bonduki Sadagar, in remembrance of Manasa Devi, the protector of Sundarbans from all vices. *Gun Island* depicts the current

scenario of disruptions in the cycles of the natural phenomena resulting in the disorders of climate conditions. Almost all the main characters in this fiction encounter and witness hostile degenerative conditions contributed by human greediness and negligible attitudes towards nature leading to environmental degradation. Ghosh employs the character Piyali Roy as a Marine Biologist, in order to postulate the recent conditions of the oceanic ecosystem around the Bay of Bengal which leads in situating Sundarbans as the novel's core.

The Sundarbans delta is due to the convergence of Meghna, Brahmaputra and Ganges. Sundarban Reserve Forest (Bangladesh), the world's largest mangrove forest, covers an area of almost 10000 sq.km with 60% positioned in Bangladesh and 40% in India. The UNESCO has enlisted 4 protected forest areas in the Sundarbans as World Heritage Sites, which provides a natural habitat to 453 indigenous species. Sundri (*Heritiera fomes*) and Gewa (*Excoecaria agallocha*) are the two tree varieties, found abundantly in these areas.

Despite all these, the Sundarbans are acknowledged as endangered in 2020 in the Red List of Ecosystems (RLE) framed by IUCN (International Union for Conservation of Nature), a global entity for monitoring and documenting the status of ecosystems all around the world. Although all the conservative measurements have been constantly taken by the both Governments (India and Bangladesh), there prevails a constant nature of depleted biodiversity around these landscapes as well as the declining in sustainability of the forest in recent times. Forest inventories reveal another shocking deterioration in the high density of the two major commercial mangrove species – Sundari and Gewa — by 40% and 45% during 1959 and 1983 respectively. So it can be understood that the Sundarbans have

been constantly as well as evidently under threat from both natural as well as human-made causes. Several recent studies and surveys carried out by various academic institutions reveal the shocking levels of degradation of these natural essentials.

The threats to both the aquatic and terrestrial elements of the World Heritage site are ... over exploitation, altered hydrology, pollution, poor fishing practices and poaching ... Threats from sea level rise and increased frequency and intensity of extreme weather events (storms and tidal surges) under climate change are severe. Salinity rise and nutrient limitation negatively affect the mangrove forest's structure and cause decline of forest coverage, with salinity-sensitive species gradually disappearing. (World Heritage Outlook)

A 1991 study has registered that 2 of the amphibian species, 14 of the reptile species, 25 of the avis species and 5 of the mammals as endangered. Most of the mangrove (fresh water) swamplands of Bangladesh have been considerably depreciated from the 1970s because of sudden change in the direction of fresh water. A 2007 report by UNESCO, "Case Studies on Climate Change and World Heritage" has stated that an anthropogenic 45cm rise in sea level which could lead to the destruction of 75 percent of the Sundarbans mangroves. The Zoological Society of London (ZSL) has made a crucial study and revealed that the Sundarban coast has been retreating up to 200 metres in a year. Agricultural activities have ruined and Shrimp cultivation too has been shrunk. The School of Oceanographic Studies, Jadavpur University has predicted the annual rise in the sea level as 8 mm in 2010, in counter to the previous record of 3.14 mm registered in 2000. The rising temperature in the sea levels and the increasing salinity in the waters have been a problem for the survival of the indigenous

flora and fauna. According to a 2016 report again by UNESCO, the coal-fired Rampal Power Station, located in Khulna-Bangladesh acts as a trigger to further the damage. The mangrove forest is the defensive biological shield against the powerful cyclones and mighty tsunamis and it acts like a wind resilient fort, which also falls prey to its depletion. The Cyclone Sidrin 2007 and the Cyclone Aila in May 2009 have proven the aforesaid statements. All these contemporary environmental issues faced by the Sundarbans have been addressed evasively by Ghosh in his novel *Gun Island*.

The narrator Deen, on the insistence of Nilima Bose, sets out for an exploration in search of the Shrine of Manasa Devi, where he closely encounters the hostile yet fragile ecological system of the archipelago surroundings of the Sundarbans, located at the eastern part of India. Nilima Bose is the Founder of Badabon Trust in the archipelago of the Sundarbans. The trust is functioned for the welfare of the populaces affected by the Bhola cyclone and other natural calamities. Nilima is the one, who constantly cares about the ever-changing phenomenon of the landscapes due to the rising sea levels and other shifting factors. Through the character Nilima, Ghosh registers the instable nature around the Sundarbans as, “The islands of the Sundarbans are constantly being swallowed up by the sea; they’re disappearing before our eyes” (*Gun Island* 18). When Nilima recognizes about the passion of Deen for antiquities, she persuades Deen to have a visit to the shrine of Manasa Devi before it is submerged by the rising sea levels and stimulated the consequences. Ghosh through Nilima states, “... temperatures are rising around the world because of global warming” (*Gun Island* 214). Deen learns about the hazardous lives of the indigenous people belonging to the Sundarbans. Through his character Kanai Dutta, a distant relative of the narrator, Ghosh describes

the Sundarbans as, “the frontier where commerce and the wilderness look each other directly in the eye” (*Gun Island* 8). The distinct value of the geographic location of the Sundarbans is registered by Ghosh as, “... Every merchant who’s ever sailed out of Bengal has had to pass through the Sundarbans - there’s no other way to reach the sea” (*Gun Island* 8). To support this, the United Nations report on Climate Change in its article “How is climate change impacting the world’s ocean” states, “As the excessive heat and energy warms the ocean, the change in temperature leads to unparalleled cascading effects, including ice-melting, sea-level rise, marine heat waves, and ocean acidification” (United Nations).

Piyali Roy, a Bengal based American Marine Biologist, comes to the Sundarbans on a regular basis to convene her research on marine mammals. She studies the patterns of movement of a small pod of Irrawaddy dolphins (*Orcaella brevirostris*). Rani, the mother dolphin and a member of the pod of *Orcaella* family, is important to Piya’s research. She keeps careful records for each individual in the pod and knows all of them intimately, especially the females, whom she has been tracking through every breeding season. She has also mapped the pod’s movements over many years, following their diurnal, seasonal and annual migrations through her advanced technological instruments. Piya’s research entanglement with Rani has begun with Rani’s mother, the first mother dolphin in that pod, which has been under observation in Piya’s research. Piya has felt it easier to recognise Rani’s mother with a new born calf during the initial years of her research. Unfortunately, the calf was killed in a collision with a motorised boat when it is just a few weeks old. This untimely death of the new born calf has had its impact on Piya. On her return the following year, Piya is overjoyed to learn the news that the mother dolphin has calved

again. It is Tipu, Piya's adopted son, who has shortened the calf's official name, RN1 to Rani, when he is a small boy. Around a year later, that calf Rani found missing and Piya has propelled a frantic search all around the familiar places where the pod have been spending most of their times. Finally Piya has found Rani entangled in lengthy nylon netting. She has acted quickly, cut the nylon net and released the calf. From then onwards, the dolphin has started to make an eye contact with her to show her gratitude to Piya, in a manner that is fairly unique from the other members of the pod.

Rani is more useful to Piya than any other dolphins of the concerned pod, in many ways for building her research, especially in helping Piya to track the pod's movements and migrations. These patterns of movement have been regular and consistent up to certain periods. But then the tracks begin to vary, becoming increasingly unpredictable. Piya discovers that this happens because of the changes in the characteristics of the waters of the Sundarbans in the recent times. As the sea levels rise, the fresh water flow diminishes resulting in the intrusion of salt water upstream, which leads to the increase of salinity. These circumstances drive the dolphins away from their habitats and they are inevitably enforced to venture further and further to find their new home, into largely human fishing areas. Predictably some have been ensnared by fisherman's net and some have been accidentally killed with motorboats and steamers. Over a last few years, the pod has been lost so many members in various occurrences and now it has shrunk in to only three including the big mother Rani. So Piya facilitates the monitoring of the abrupt anomalies of the pod with GPS enabled tracker for providing real time information on her whereabouts and this device is programmed to send alerts to Piya's mobile phone in emergency situations. By doing so, she is able to ensure

the wellbeing and present condition of the pod lively. All of a sudden, she receives a kind of worst alert from the GPS tracker shown somewhere in the island called Garjondola, which would mean that Rani might have been stranded or beached. United Nations report on Climate Change in its article “How is climate change impacting the world’s ocean” states,

These changes ultimately cause a lasting impact on marine biodiversity, and the lives and livelihoods of coastal communities and beyond - including around 680 million people living in low-lying coastal areas, almost 2 billion who live in half of the world’s megacities that are coastal, nearly half of the world’s population (3.3 billion) that depends on fish for protein, and almost 60 million people who work in fisheries and the aquaculture sector worldwide. (United Nations)

Ghosh’s Marine Biologist, Piya, has scrutinised the river water and explained that there are signs (like pools, whirlpools, braids, striations and many sorts of ripples) of the innumerable streams contained within the course of one river. Each Stream differs from one another in small ways and each is freighted with its own mixture of micro-nutrients. Each one seems like a small ecological niche, held in suspension by the flow of water. The outcome is an amazing propagation and procreation of life in countless forms. So each of these rivers is like a moving forest, densely occupied by an implausible variety of living beings and that has been moving for many thousands of years. When it is moving, it carries traces of everything that occurs upriver. But in the recent time, the chemical fertilizers and hazardous wastages released from the refineries and chemical industries cause a chain reaction which leads to the decrease of oxygen levels in water. There are massive stretches of water with low oxygen level, making it too hard for fish to breath, called oceanic dead

zones. Ghosh through Piya expresses, “These zones have now spread over tens of thousands of square miles of ocean – some of them are as large as middle sized countries” (*Gun Island*97).

Thus Piya joins hands with Nilima Bose in order to seek alliance between various environmental groups to fight for the recuperation of the ecological ambiances of the Sundarbans. They are up against the refinery that discharges their effluents in to the riverbeds and the joint efforts have managed to impose a tight regulatory regime on the refinery that has led to massive fish killings. This improper way of discharging effluents disturbs the Irrawaddy dolphins and makes them to abandon their home and old hunting grounds resulting in mass migration. Quamrul Ahsan and Anisul Haque in their “Dead Zone in the Bay of Bengal” register,

Dead Zone of 60,000 sq.km has been discovered by a group of multinational scientists of Bristow et al., (2016). The Bay of Bengal OMZ still shows a trace of oxygen below 70m depth, ranging from 0.032-0.064 mg/l, albeit way below the Oxygen level (5 mg/l) needed to support aquatic life and other uses. (Ahsan & Haque)

There is another disruption that appears in the form of ‘man-made-sounds’, that come from submarines and sonar equipment. These marine mammals use echo location to navigate themselves. Sometimes whales and dolphins would become disoriented and leap themselves aground, when these ‘man-made-sounds’ confuse them a lot. Ghosh’s Piyali says, “There are just so many aspects of marine mammal behaviour that we don’t understand, especially when it comes to beachings” (*Gun Island*100). Through Piya, Ghosh startlingly observes the ravenousness activities and negligible attitudes of human that channelled the vast extensions of the oceanic dead zones in the

vicinity of the Sundarbans. The serious complications like contamination of water resources, diminishing of fresh water levels, increasing of acidification, intrusion of salt water in to deeper upstream and extension of oceanic dead zones in the regions of the Sundarbans are evidently surveyed and highlighted in Ghosh's *Gun Island*. Fish and Wildlife Foundation Florida registers the instances of beachings in its article "Why Do Whales Beach Themselves?" as,

Low and mid-frequency active sonar is used by militaries to detect submarines, and for other acoustic exercises. These frequencies do not affect all species but can be deadly for some. Low sonar can cause hemorrhaging in animals exposed to the sonar, and others will beach themselves to escape the sound. Mid-frequency sonar most affects Cuvier's beaked whales, causing decompression sickness, leading to tissue damage from gas bubble lesions. This sickness could happen because the sonar causes the whales to panic and surface too quickly to escape. Mass beachings of beaked whales almost exclusively occur alongside sonar testing. (Fish and Wildlife Foundation)

Ghosh addresses another natural catastrophe, wildfires, in his *Gun Island*. He registers this by making Deen and Giacinta go to a book festival in Los Angeles, California, where the seasonal Wildfire occurs. This string of wildfires appears more frequently in these regions of America. According to the New York Times newspaper article by Elena Shao dated on December 20, 2020, Lenya Quinn-Davidson, a fire advisor for the University of California Cooperative Extension, described the seasonal occurrences of wildfires around those regions as follows,

California has seen larger, hotter and more intense wildfires in recent years, driven by extended drought and climate

change. The five largest wildfires recorded in the state have all occurred since 2018. But California's wildfire record is punctuated with both "good" and "bad" fire years — a result of short-term, natural weather variability. (Shao)

Usually warmer temperatures accelerate to feed wildfires. Extreme heat and drought, aggravated by climate change, burn down trees, dry out grass and fuel the fire to spread over vast stretches of land. There is a shocking observation about these wildfires appear in California regions. Even after the publication of this novel '*Gun Island*' in 2019, there was a string of massive and destructive wildfires appeared and burnt down 4.3 million acres in 2020 that remembered as a historic devastation and 2.5 million acres in 2021 in California. Ghosh by making his narrator, Deen to shockingly witness the horrible incident of wildfires, that reduce to ashes everything in California, states, "A charred, smouldering stretch of forested hillside that had already been laid waste by the fires ... I could see a great mass of blackened tree trunks rising out of a vast field of ash"(*Gun Island*118).

During the course of the novel, the narrator Deen and Professor Giacinta observe a rare scene of washing up of the yellow-bellied sea snakes in the southern side of California. These extremely venomous sea snakes generally live in warmer waters far away from Southern California. United Nations report on Climate Change in its article "How is climate change impacting the world's ocean" states,

The ocean has long taken the brunt of the impacts of human-made global warming, says UN Climate Change. As the planet's greatest carbon sink, the ocean absorbs excess heat and energy released from rising greenhouse gas emissions trapped in the Earth's system. Today, the ocean has absorbed about 90

percent of the heat generated by rising emissions. (United Nations)

Due to the sudden changes in the temperatures of sea waters, the marine mammals are habitually intruding into new, unexplored warmer places. Ghosh makes Deen to utter the following words to Piya describing about transforming behaviours of marine species due to the changing scenarios as follows,

These sea snakes generally lived in warmer waters, to the south, but sightings in southern California had become increasingly common: their distribution was changing with the warming of the oceans and they were migrating northwards. (*Gun Island*134)

Every living organism on Earth has certain unique way of choosing their ecological habitat that maintains certain ample living conditions leading to their migration. A scientific clarification is made for the migration of the marine mammals by Prof. Wolfgang Kiebling, from University of Erlangen-Nuremberg and Chair of Palaeoenvironmental Research, as follows, “Whilst the climate appears to be changing more rapidly today than ever before, the climate also changed rapidly in the past, forcing organisms to migrate in order to survive. Adaptation tended to be the exception.”(W. Kiebling).

Ghosh wilfully and skilfully fabricates a fictional story along with every environmental disruption prevailing not only around the Sundarbans, but all around the world. By observing these matters keenly, one can comprehensively aware of how climate change impacts the balance of oceans and how these cycles of nature have been unjustly damaged. Recent surveys and reports are evidently displaying the utter bitter reality. Here

UN Climate Change states that the ocean has absorbed about 90 percentage of the heat generated by greenhouse gas emissions. This in turn leads to ocean acidification, leaving an everlasting impact on marine biodiversity. The UN Educational, Scientific and Cultural Organization notifies that more than half of the world's marine species may stand on the brink of extinction by 2100.

In this transforming world, every single species struggles to find a place and maintain balance in their life due to the unbridled atrocities unfolded by the human and nature induced calamities over the years. This destructive behaviour leads to a world devoid of interdependent living organisms, resulting in the tipping off the balance. Ghosh's *Gun Island* incorporates the concept of environmental justice, by presenting the affectations of Sundarbans including, diminution of fresh water, salinity, depleted biodiversity, expansion of oceanic dead zones and others, only to represent environmental advocacy. By presenting all these discernible disruptions of the cycles of nature which is prevalent in almost every corner and aspects of life, Ghosh strives more to instruct his readers to take more environmentally viable actions to avoid the miserable impending dangers. He also encourages adapting and embracing environmentally solicitous practices enabling the attainment of environmental renovation and ecological restoration.

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UNVEILING THE PAST: TRANSGENDER LIVES AT THE INTERSECTION OF COLONIALISM AND STIGMA

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Abstract

Across civilizations and historical eras, transgender communities have existed, frequently occupying acknowledged and occasionally revered social, spiritual, or cultural roles. However, acceptance was frequently contingent and organized within strict hierarchies; these histories were neither homogeneous nor devoid of marginalization. The imposition of colonial rule and the epistemologies that go along with it are directly linked to the escalation of stigma against transgender people. Victorian-inspired binary gender ideals were enforced by European colonial administrations, especially under the British Empire. Gender-nonconforming tribes were specifically targeted by laws like the Criminal Tribes Act of 1871, which classified them as criminal and deviant. These frameworks codified social exclusion, moral policing, and monitoring while upending pre-existing social systems. Using this perspective to understand transgender history emphasizes the necessity of separating indigenous customs from colonial misrepresentations. It also emphasizes how historical upheavals that altered gender, the law, and belonging are at the basis of today's fight for rights and dignity.

Key words: Historical upheavals, Victorian principles, reversed society, deviant and dignity.

UNVEILING THE PAST: TRANSGENDER LIVES AT THE INTERSECTION OF COLONIALISM AND STIGMA

Monobi Bandopadhyay is a trailblazing Indian transgender woman, scholar, and social activist who has broken down obstacles to education and fought for the rights of transgender people. She was assigned male at birth and went on to become one of the most well-known transgender individuals in Indian academia. She was born in West Bengal. When she was named principal of Krishnagar Women's College in 2015, she created history by becoming the first transgender college principal in India, which was a major turning point for transgender representation in the nation's educational system. Her leadership represented advancements in equality of opportunity and inclusivity for underrepresented groups. In addition to her administrative responsibilities, Monobi has taught at Vivekananda Satobarshiki Mahavidyalaya and is a scholar of Bengali literature. Additionally, she has actively participated in writing and journalism, adding to conversations on human rights, social justice, and gender identity. She has been instrumental in dispelling social stigma and raising awareness of the struggles and rights of transgender people in India through her academic work, public speaking, and activism.

Under the pretence of trade, the British conquered nearly the entire world, colonized numerous nations, and ruled for many centuries. They also held India as a slave for about three centuries. The British government created numerous oppressive laws and enforced them against Indians in an effort to quell the protests. The 1871 Criminal Tribes Act is one such law. Many populations sympathetic to the monarchy were criminalized by

the government and labelled as "habitual criminals." Furthermore, it had an impact on the community as a whole, and the entire generation was viewed as criminals. First enacted in North India in 1871, this act was later extended to Bengal as well. Overall, this act was passed in the Madras Presidency following a number of revisions. This act was implemented nationwide in India in 1924.

The communities designated as "Habitual Criminals" were expected to register at the local police station. They need obtain permission from the authorities if they wish to leave town. They were also detained without cause or explanation. This act also caused the transgender population to live on the streets while being watched and suspected. "Registers of Eunuchs" were established, and the names of members of the transgender community were registered together with information such as their name, age, home address, age at the time of sex reassignment surgery, income, and financial condition. The majority of what they do is illegal. They were prohibited from dancing at festivals and from dressing like women. If they dressed like women, it was illegal. Transgender persons were subjected to several brutal acts by the colonial authority, which even punished those who expressed their identities.

Many civilizations have historically assumed that gender is a rigidly binary structure (Male and Female) that is decided at birth, which has led to the development of stereotypes regarding transgender people. Traditional beliefs are challenged when people identify with a gender other than the one they were assigned at birth. Due to this difficulty, transgender people are frequently misunderstood and stereotyped. In essence, stigma and stereotypes about transgender persons are created by the general public's collective consciousness as well as genetically

based ideas about the trans population. Prejudices against them can be strengthened by this effective tool. Every person's understanding and performance of gender roles is largely influenced by culture.

Additionally, some traits are typically connected to particular gender roles. In other contexts, gender roles relate to a set of expectations, behaviours, and characteristics that a society deems suitable for both men and women. For example, males are frequently expected to be independent, forceful, and responsible for supporting their families. On the other hand, women are typically expected to be compassionate, emotionally supportive, and in charge of domestic and care giving responsibilities. These assumptions are mostly influenced by socialization processes and cultural beliefs rather than being physiologically established. The father is the primary factor that determines a child's gender, whether they are male, female, or transgender, and the actual gender role is formed in the mother's pregnancy. Youngsters are becoming aware of their gender based on their innate characteristics. It is not a mental illness or disorder, but rather a distinctive method of expressing one's gender identity to society. They never suddenly change or assume a different identity.

Terms like "differently able" for people with disabilities, "commercial sex workers" for prostitutes, etc., are used by civilized society as a way to show empathy and integrate them into society as a whole. These sentiments for the least fortunate members of society are admirable, but they are not at all civilized when it comes to eunuchs. Call eunuchs insulting names despite the fact that they are only born with a genetic aberration and may have malformed genitalia, rather than demonstrating a reasonable level of empathy towards them. In Rajasthan, Gujarat, Punjab, and other states, some people give

hijras particular status on auspicious occasions because they think their hijras have been blessed by Corte and can encourage conception in couples. They are also welcomed during childbirth, in contrast to the more rigid attitude towards eunuchs in the northern. In contrast to the more rigid attitude towards eunuchs in the northern states, people in the southern states end to be slightly more accepting.

These days, though, they are hardly ever asked to perform at weddings or to commemorate the birth of a child. In the past, singing and dancing were significant sources of additional income. Their only options now are begging and prostitution due to their diminishing appeal as entertainers. Relationships based on suitability, trust, and consent is another significant myth that is frequently applied to transwomen who fall in love with every guy they encounter. In actuality, all transwomen are emotionally manipulated and have their literality fooled by men. According to the autobiographies of Laxmi Narayan, Revathi, Monobi, and others, fortune was tired of men acting in a romantic manner. They yearn for a normal life as transgender women.

“I was not looking for physical gratification at all, but for a relationship that would eventually lead to a future, a family. Like any other girl who is about to step into her youth, I would dream of a happy family with a loving and protective husband” (Manobi 25).

They essentially believe guys, but the issue is that they are not prepared to support or travel with them for an extended period of time. In the meantime, they frequently experience physical and mental abuse. Money is the ultimate goal, and transwomen are unable to tolerate such treachery; they will always carry a scar in their minds. Their partners don't even want to be seen hanging out with them in public or at social

gatherings, and they aren't thinking about feasible choices for long-term love, relationships, or marriage. Kalki Subramaniam created a distinct matrimonial website specifically for transwomen; she saw a range of guys through their remarks and received numerous replies. Everyone is willing to accept them as friends, get married in secret, and accept them as mistresses, but they won't be allowed to live as wives in public. She eventually loses patience and stops looking for a match for herself and her friends.

Gender transition is perceived by society as being solely for sensual enjoyment, but in actuality, it is about identity, authenticity, and alignment of physical characteristics with one's true self rather than indulgence. For example, the World Health Organization and the United Nations Development Programme use global research to assist nations in eliminating poverty and reducing inequality. In order to promote sustainable development, they train healthcare professionals to eradicate gender bias and create standards for gender-responsive care. Transition is not a way of life chosen for enjoyment, but rather a very personal path to wholeness. In order to prove their identification as transwomen, all transwomen not just Manobi prefer gender affirmation surgery. All transwomen recorded the same agonizing declaration made by Manobi.

“I was actually a woman trapped inside a man’s body and I wanted liberation for my situation” (Manobi 33).

A transwoman's physical body alignment with gender identity might be greatly aided by undergoing GAS or SRS in order to assert their identify as a woman. This alignment enhances many transwomen sense of self, societal acceptance as women, and general well-being. A person's internal perception of being male, female, both, or either is known as gender identity.

A transwoman is a person who was designated male at birth but identifies as female due to an uncertain collection of chromosomal conditions. The mismatch between body and identity that is frequently linked to gender Dysphoria-a distressing condition brought on by incongruent sex for transwomen-is lessened by gender affirmation surgery, which includes procedures such as,

I. Vaginoplasty

II. Breast Augmentation

III. Facial Feminization Surgery and

IV. Voice Therapy.

Following these steps help to create physical characteristics that are culturally recognized as feminine. The bodily congruence helps them experience themselves and be recognized by others with the result they get greater psychological comfort with their bodies and identities, gender Dysphoria often manifests as discomfort with,

I. Genital Anatomy

II. Facial Structure

III. Body Shape and

IV. Voice

Surgery addresses these sources of distress. According to the World Professional Association for Transgender Health Standards of care, medically necessary Gender- Affirmation treatments including surgery are effective for reducing Dysphoria.

Terms like "Gift" and "Lakshmi," which are associated with the existence of a transwoman, have symbolic connotations in Manobi's personal narrative, *The Gift of Goddess Lakshmi*. The term itself illustrates how her hardships and successes are reminiscent of resilience and divine favour and Lakshmi-related metamorphosis. Despite being a man at birth, Manobi had a strong feminine identity from an early age. She experienced social shame, familial pressure, and bullying for expressing her gender identification. The word "Gift" represents her understanding that being transgender was not a curse but rather a reflection of who she really was. Acknowledging this identity turned into a personality awakening akin to getting a holy gift.

Despite the hostility, she continued her education and became a literary expert. Her scholastic achievement is a symbol of Goddess Lakshmi's growth and prosperity. The way that turned sorrow into empowerment was education. Manobi's selection as principal marked a turning point for transgender visibility in India. Her leadership represented dismantling obstacles and restoring the transgender community's dignity. By associating her life with Lakshmi, a symbol of beauty, elegance, and good fortune in Hindu culture, Manobi's narrative implies that transgender women are similarly revered and deserving of respect. By dispelling these myths and challenging society's unfavourable opinions, it demonstrates that transwomen may occupy respectable positions in society.

Manobi's journey is a symbol of tenacity, bravery, and the continuous fight for equality. Her accomplishments have motivated many members of the LGBTQI+ community and beyond, proving that hard work and knowledge can help break down ingrained social obstacles. Her journey transforms adversity into self-respect, social reforms for transgender people

in India, and leadership responsibilities, making the metaphor of "A Gift of Goddesses Lakshmi" a reality.

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**FORENSIC PHONETICS IN LEGAL INVESTIGATIONS:
APPLICATIONS OF APPLIED LINGUISTICS IN
CRIMINAL CASES**

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ABSTRACT

The application of forensic phonetics an interdisciplinary field that blends linguistics and law is very beneficial to criminal investigations. Forensic phonetics plays a vital role in court cases by enabling specialists to use theories from both theoretical and applied linguistics to examine and interpret audio recordings. This study explores the application of linguistic techniques including phoneme analysis, stress pattern identification, dialect identification and acoustic measurements to resolve the criminal cases. In order to find distinctive speech patterns and confirm the legitimacy of audio evidence, it looks at how forensic specialists employ methods like voiceprint matching, spectrographic analysis and acoustic phonetics. These techniques have made it possible to identify speakers ensuring the accuracy of the documents and the dependability of the evidence offered in court. As multilingual audio evidence is prevalent in India, a linguistically diverse nation, this research article also looks at the growing importance of forensic phonetics in handling such evidence. To improve accuracy and clarity, sophisticated linguistic tools are needed to handle speech analysis issues like regional accents and noisy environments.

The study emphasizes the significance of forensic phonetics in criminal cases using a number of real-world examples such as ransom calls and speaker identification in intercepted communications and others. By emphasizing the linguistic foundations of forensic analysis this study establishes a link between language science and the legal system. It also makes forensic phonetics a prominent area of research in the fields of law and linguistics.

Keywords: *Forensic Phonetics, Speaker Identification, Acoustic Analysis, Phoneme Analysis, Voiceprint Matching, Multilingual Audio Evidence, Linguistic Evidence in Law.*

1. Introduction

Forensic phonetics is one branch of applied linguistics that is now widely used in contemporary legal investigations. Data on spoken language can be analyzed scientifically through the use of linguistic frameworks and phonetic theories. This field decodes and validates voice recordings using acoustic properties such as intonation, stress patterns and phoneme structures. Undoubtedly, it is pertinent in legal systems where speaker identification or evidence validation is crucial. In India's multilingual context, forensic phonetics offers reliable solutions to the unique issues brought on by different dialects and accents. This study explores the relationship between linguistics and the law with an emphasis on how it may make transformative impact on criminal investigations.

1.1 Brief overview of forensic phonetics and its growing relevance in legal investigations

A subfield of applied linguistics called forensic phonetics conducts scientific research on speech and sound to support legal investigations. It examines spoken language evidence based on

theoretical linguistics using ideas like prosody, acoustic properties and phoneme structures. Because it is crucial for speaker identification, recording authenticity and tamper detection, this section is very useful in legal contexts. The reliability of evidence is ensured by methods that allow for accurate voice pattern comparisons such as spectrographic analysis and voiceprint matching.

The use of law enforcement is especially significant in linguistically diverse areas like India where multilingual interactions and accents and dialects present difficulties. These gaps are filled by forensic phonetics which provides methods that are linguistically sound. From settling disagreements over audio evidence to handling high-profile criminal cases, this field has grown considerably. Forensic phonetics is establishing new criteria for admissibility and reliability in court cases as linguistic and technological developments continue to transform the examination of voice evidence.

1.2 The interdisciplinary role of applied linguistics in enhancing forensic methodologies

Applied linguistics is revolutionary for enhancing forensic methods particularly when it comes to its integration into forensic phonetics. By using linguistic theories to solve practical issues, it bridges the gap between abstract language studies and real-world forensic requirements. Techniques such as phoneme analysis, prosodic patterning and spectrographic voice analysis are directly derived from linguistic research and enable precise evidence authentication and speaker identification.

In multilingual contexts like India, complex issues like accent variability, code switching and dialectal influences are usually overlooked by traditional approaches. Applying

linguistics addresses these problems. Forensic methods are enhanced by the use of linguistically based computational tools such as acoustic modelling and speech recognition algorithms. As a result of this interdisciplinary cooperation, forensic evidences credibility in court cases has significantly increased. By emphasizing linguistic accuracy and employing state-of-the-art techniques applied linguistics maintains stringent scientific and legal standards for forensic investigations making it an essential tool in modern criminology.

1.3 Importance of audio evidence in the Indian legal landscape, especially in high profile cases

The use of audio evidence in criminal investigations has grown in popularity in India especially in high-profile cases. Recorded conversations can yield clear information about accountability, intent planning, organized crime, terrorism and corruption cases. Even though the Vyapam scam and other cases involved verifying the authenticity of incriminating phone calls, the 2008 Mumbai attacks showed how important voice analysis is for identifying attackers. It is challenging in Indian subcontinent due to its multilingual and dialect-rich environment which necessitates linguistic knowledge for accurate interpretation. Because forensic phonetics which is founded on applied linguistics allows for precise analysis of speech patterns, it emphasizes the significance of audio evidence in law and ensures its admissibility in court.

1.4 Statement of objectives and the focus of the study

This study looks at how forensic phonetics in particular can be used in applied linguistics to support legal investigations. The goal is to increase the accuracy of audio evidence by

investigating linguistic concepts such as dialect variations, phoneme structures and acoustic properties. By addressing problems like multilingualism and noisy environments, the research suggests innovative ways to improve the admissibility of forensic phonetic evidence in court and guarantee linguistic integrity and scientific accuracy in important legal proceedings.

2. Theoretical Foundations

Two essential elements of forensic phonetics which has its origins in theoretical linguistics are acoustic analysis and phonological phonetics. Speech structural components such as phonemes prosody and intonation are examined in order to decode vocal patterns. The ideas of segmental and suprasegmental phonetics offer a framework for examining the characteristics of voices. Sociolinguistic and dialectological theories can help us better understand how to interpret regional accents and speech variations. These linguistic foundations ensure accurate empirically based methods when forensically examining the audio evidence.

2.1 Overview of forensic phonetics as a discipline

Forensic phonetics is one branch of applied linguistics that focuses on the analysis of speech and audio evidence in legal proceedings. With its roots in phonetic science, it decodes and comprehends spoken language using acoustic and phonological prosodic phonetic theories. This field is needed for speaker identification and voice authentication in order to identify audio manipulation. It uses advanced techniques like voiceprint matching and formant tracking, spectrographic analysis to analyze unique vocal patterns.

The fields focus on linguistic complexities such as dialectal differences, accent variation and multilingual interactions makes it especially relevant in India where the linguistic landscape is diverse. By connecting theoretical linguistics with practical legal applications, forensic phonetics offers precise methods to ensure the validity of evidence. Innovations such as automated speech recognition and acoustic software expand the capabilities of technology. By combining cutting-edge technology with linguistic expertise forensic phonetics has emerged as a crucial field to preserve judicial integrity and influence modern investigative techniques.

2.2 Key concepts: phonemes, accents, dialects, and spectrograph analysis

To properly analyze speech evidence, forensic phonetics requires a basic understanding of language. For the purpose of identifying unique speech patterns and speaker characteristics phonemes (the smallest units of sound in a language) are crucial. Forensic experts can spot subtle variations in phoneme production to spot speech abnormalities and differentiate between the voices. In forensic analysis, accents and dialects that are influenced by social cultural and geographic factors are essential. While dialects encompass more general linguistic variances like syntax and vocabulary, accents emphasize regional phonetic features. Analyzers can determine the speaker's linguistic background and eliminate any disparities by comprehending these elements.

With spectrograph analysis, a technical tool sound waves intensity frequency and duration are graphically depicted. Because it provides a complete acoustic fingerprint of speech, it allows comparisons between recordings. When these concepts are combined in forensic phonetics, precise empirically

supported interpretations of audio evidence are guaranteed which is essential in diverse and multilingual legal contexts like India.

2.3 Connection between theoretical linguistics and the mechanics of phonetic analysis

A systematic understanding of language and sound systems is provided by theoretical linguistics which serves as the foundation for phonetic analysis. Phonology one of the main areas of linguistics studies how phonemes which are the smallest units of sound combine to form meaning. Finding distinctive speech patterns and traits that are specific to a speaker in forensic phonetics is made simpler by this framework.

In order to assist forensic analysts in identifying speech variations brought on by accents or dialects, the phonological subfield of morphophonemics examines how sounds alter in various linguistic contexts. By assessing sound characteristics like pitch intensity and formants—all crucial for voice recognition—acoustic phonetics strengthens this link even more.

A crucial component of forensic techniques spectrographic analysis visualizes the speech sounds to connect linguistic theory to real-world use. Accurate operation of the mechanics of phonetic analysis requires these theoretical understandings. The combination of forensic tools and linguistic abstractions offers trustworthy methods for analyzing speech evidence particularly in intricate multilingual contexts like our country.

2.4 Evolution of forensic phonetics as part of applied linguistics

By combining theoretical understanding with real-world applications, forensic phonetics has developed from a specialized field of phonetics to a prominent field within applied linguistics.

At first, it focused on simple voice comparisons and only employed manual techniques. As language research advanced, however especially in phonology and acoustic phonetics, its purview grew to encompass speech tampering analysis, speaker identification and voice authentication. Because, they allow for accurate and repeatable analyses computational tools like spectrographic analysis and voiceprint matching algorithms have completely changed forensic phonetics.

The methods used in linguistic research on accents dialects and sociophonetics have been further refined enabling more complex interpretations of regional and multilingual speech variances. In countries like India where linguistic diversity makes evidence analysis more difficult to the application of forensic phonetics has become essential in legal settings. The gap between applied linguistics and forensic science has been bridged through the integration of linguistic theory and technological advancements guaranteeing accurate and admissible audio evidence.

3. Methodologies in Forensic Phonetics

A range of methods are used in forensic phonetics to carefully analyze speech evidence. Acoustic analysis methods that focus on formant structures like pitch and frequency like spectrographic analysis are used to visualize speech patterns. Using voiceprint matching which compares unique vocal characteristics, speakers can be identified. Using phonetic transcription to explain subtle variations in phoneme performance is useful. In multilingual settings, Sociophonetic profiling is crucial because it also considers accents and dialects. These methods ensure that court decisions are accurate and backed by data from science.

3.1 Techniques used in speaker identification: acoustic phonetic analysis and voiceprint matching

In forensic phonetics, voiceprint matching and acoustic phonetic analysis are the primary techniques used to identify speakers. Acoustic analysis looks for unique voice characteristics by analyzing speech characteristics like pitch frequency and formant structures. It can distinguish between speakers even in similar linguistic contexts by examining sound waves. In speaker recognition also known as voiceprint matching, vocal patterns are compared to a database of recognized voices. A voiceprint is a distinct quantifiable representation of a speaker's voice produced by advanced algorithms. The two methods provide a very dependable way to identify speakers in forensic investigations when combined.

3.2 Tools for forensic phonetic analysis: software, algorithms, and spectrograms

Forensic phonetic analysis uses sophisticated tools to guarantee accurate and trustworthy analysis of audio evidence. Because it enables professionals to manipulate, analyze and visualize speech patterns specialized software like Praat, MATLAB and WaveSurfer are crucial for phonetic investigations. Pitch duration, frequency and other characteristics that are essential for speaker identification and speech comparison can be extracted using these tools.

The analysis is automated and enhanced through the use of 'algorithms' that compare voice samples such as "Dynamic Time Warping (DTW)" and "Hidden Markov Models (HMM)". These algorithms improve the accuracy of identification by efficiently matching similar acoustic characteristics across various speech recordings. "Spectrophotograms" is another essential tool that

graphically depicts sound frequencies over time. By mapping vocal traits like formant frequencies and harmonics Spectrophotograms provide forensic experts with a comprehensive quantitative analysis of speech and a clear image of the speaker's distinct vocal fingerprint. These resources work together to provide solid empirically supported findings for legal investigations.

3.3 Handling multilingual and noisy audio evidence in the Indian legal context

Managing multilingual and noisy audio evidence in the legal system can be extremely difficult because of India's wide linguistic diversity and diverse environmental conditions. Because forensic phonetics specialists deal with a variety of dialects and accents, they need to be aware of regional speech variations. Accurate source speaker identification in multilingual environments requires the ability to discern minute variations in phonetic structures which can be challenging due to dialect overlap. Additionally noisy environments like busy streets or industrial settings make it harder to perceive audio quality. Advanced filtering techniques are used to isolate pertinent speech features and remove background noise in order to maintain the audio evidence's clarity and usability. To increase accuracy and clarity, specialized software tools like high-resolution spectrograms and noise reduction algorithms are essential. In order to guarantee that audio evidence can be accurately examined for legal proceedings even in difficult circumstances, forensic phonetics in India blends linguistic expertise with technological innovation.

3.4 Challenges and solutions in ensuring reliability and admissibility in court

A major challenge in forensic phonetics is ensuring that audio evidence is ‘admissible’ and ‘reliability’ in court. The Courts frequently question the scientific validity of phonetic analyses especially when it comes to noisy or distorted recordings. Forensic experts can use ‘Reproducible techniques’ and ‘Validated tools’ such as spectrographic analysis and voiceprint matching in compliance with established protocols to solve this. Reliable and long-lasting results are assured when these methods are used consistently. Particularly in multilingual regions like India the interpretation of dialects and accents makes it more challenging to identify speakers. Sophisticated algorithms with Crosslinguistic expertise and the ability to process a wide range of speech patterns can help to mitigate this issue. Forensic specialists must also clearly communicate their conclusions so that non-expert juries and judges can appreciate the importance of the evidence. Upholding transparency and rigor can resolve these problems and boost the legitimacy of forensic phonetics in the court proceedings.

4. Applications in Criminal Cases

Particularly in the fields of speaker identification, voice authentication and speech analysis, forensic phonetics is essential to criminal investigations. In cases involving threatening messages or extortion calls, phonetic analysis helps to identify suspects based on unique vocal characteristics. Professionals in forensics also review recorded confessions or intercepted conversations to verify their authenticity or spot any errors. Forensic phonetics which provides reliable scientifically based insights to support criminal investigations improves the accuracy of evidence in the court.

4.1 Real world examples of how forensic phonetics aids in solving crimes

In order to identify key suspects in the Mumbai Bomb Blast Case in 1993, forensic phonetics was essential. Because of the distinctive accents and speech patterns, forensic specialists were able to match the vocal characteristics of the known suspects when authorities looked at the phone conversations of Tiger Memon and his associates. Phonetic analysis of the recordings allowed the voices to be associated with specific individuals who were involved in the planning and execution of the blasts.

The kidnappers in an abduction case in Kerala in 2013 demanded a ransom. It was challenging for the police to identify the caller because he spoke in a regional dialect. Forensic phonetic experts examined the call and identified the speaker's unique phonemic traits and vocal tonal patterns in an effort to narrow down the pool of possible suspects. The outcome of this investigation was the arrest of Anithakumari and her parents as the primary suspects in the kidnapping.

After the attack on the Indian Parliament in 2001, voice recordings of terrorist leader Mohammad Afzal Guru were verified using forensic phonetics. Experts that analyzed the speech patterns in the recorded audio paying close attention to the unique accent and pitch characteristics that demonstrated it was indeed Guru's voice significantly strengthened his conviction. This case illustrated the significance of forensic phonetics in confirming the identities of speakers in criminal investigations. These incidents show how scientifically validated voice analysis provided by forensic phonetics aids law enforcement in resolving complex criminal cases.

4.2 Cases involving voice recognition in corruption, terrorism, and fraud

Voice recognition software has been extremely helpful in situations where audio evidence has been essential to the resolution of cases involving fraud terrorism and corruption. Key players in the infamous Karnataka Lokayukta extortion scandal (2015) were found through the analysis of suspects audio recordings of bribery demands. These recordings were authenticated using voice spectrography and phonetic analysis to ensure their reliability in court. In cases involving terrorism, voice recognition has proven to be incredibly helpful in identifying suspects. One example is the analysis of intercepted phone conversations between attackers and their handlers in Pakistan following the 2008 Mumbai attacks. Forensic experts used phonetic markers to confirm intelligence and support diplomatic efforts by identifying the handlers. Fraud investigations have also made use of voice recognition.

In the 2014 Sahara Group fraud case, senior official's audio recordings of financial mismanagement were analyzed. The prosecution benefited from forensic linguists confirmation of these voices and their ability to link them to specific individuals. These examples demonstrate the cross-disciplinary collaboration between forensic technologies and applied linguistics to convert voice evidence from raw data into crucial legal evidence. Because voice evidence is guaranteed to be admissible by modern techniques, it is more beneficial in the administration of justice. In complex cases, voice recognition enhances accountability by fusing linguistic accuracy with legal requirements.

4.3 Analysis of audio evidence in Indian courtrooms: successes and limitations

Despite the fact that the analysis of audio evidence in Indian courts has advanced significantly there are still definite limitations. In several well-known instances, sophisticated phonetic methods such as spectrographic analysis have facilitated speaker identification and voice recording authentication. Voice evidence has been essential in linking suspects to unlawful activity in cases involving fraud and corruption like the Karnataka Lokayukta case. Terrorism trials have also benefited from accurate analysis of intercepted communications.

However issues persist. Common issues with the Indian legal system include inadequate technical infrastructure and a lack of standardized protocols for voice testimony. Voice analysis is made more difficult by regional dialect variations and multilingualism especially when dealing with low-quality or noisy recordings. Defense teams also frequently argue that voice evidence is not admissible by arguing that the evidence has been tampered with or that the chain of custody is insufficient. The Courts are increasingly relying on advanced technology and forensic experts to boost reliability. Although audio analysis has limitations, it is an essential tool in the pursuit of justice. To reach its maximum potential in Indian courts, it must be further refined and standardized.

4.4 Highlighting landmark cases where forensic phonetics played a pivotal role

In India and other nations, forensic phonetics has been crucial to solve numerous significant cases. Voice spectrography played a crucial role in obtaining convictions during the

Karnataka Lokayukta extortion scandal (2015) and phonetic analysis verified the identities of suspects requesting bribes. Likewise during the 26/11 Mumbai attacks (2008) phone conversations between attackers and their handlers were recorded and analyzed to identify and connect the voices of Pakistanis who favoured international justice and diplomacy. Forensic specialists in a 2013 kidnapping case in Kerala verified a ransom call that connected the perpetrator and ultimately led to the conviction. Another noteworthy case where senior officials were implicated after hearing audio recordings of internal discussions about financial mismanagement is the 2014 Sahara Group fraud case. These illustrations demonstrate the increasing use of phonetic science in legal proceedings. The potential of forensic phonetics to effectively administer justice is demonstrated by these cases despite enduring obstacles such as multilingualism and contested admissibility.

5. Ethical and Legal Implications

There are several ethical and legal implications when using forensic phonetics in investigations. The primary concern is the privacy of the people whose voice data is being examined. The potential misuse of personal audio recordings and illegal surveillance certainly raise significant ethical concerns. To avoid accusations of tampering, it is legally required to preserve the integrity and chain of custody of audio evidence. In addition, questions about fairness and admissibility arise when evidence is used outside of accepted forensic processes raising questions about how justice and individual rights can coexist.

5.1 Privacy concerns in recording and analyzing speech evidence

Privacy concerns with recording and assessing speech evidence are at the centre of discussions regarding ethical and legal practices in forensic phonetics. Significant privacy issues arise because the majority of speech recording employs covert techniques like wiretapping or unapproved recording. The Indian Constitution's Article 21 which safeguards the right to privacy and other constitutional protections against unapproved surveillance may be in conflict with these actions. Furthermore recorded data could be handled improperly, stored incorrectly or compromised. Concerns are raised by the potential for illegal access to or alteration of personal data. In multilingual societies like India where dialects can reveal regional and personal identities, language-based profiling and discrimination are more prevalent. To uphold ethical standards, one must ensure that data protection laws are followed and obtain the necessary authorizations for the collection of evidence. As the use of forensic phonetics in investigations increases safeguarding people's privacy must remain the primary concern in order to prevent misuse and uphold the integrity of the law.

5.2 Legal frameworks governing the use of audio evidence in India

In Indian court proceedings the admissibility and validity of audio evidence are governed by a number of legal frameworks. The Indian Evidence Act of 1872, Section 65B permits the admission of audio recordings and other electronic records as evidence. Admission of the audio recording requires a certificate issued under Section 65B attesting to its authenticity and compliance with the procedural requirements. The Indian Telegraph Act of 1885 and the Information Technology Act of

2000 regulate the recording and interception of communications. These laws may make it unlawful to obtain audio recordings without the required consent which may affect their admissibility in court. Based on *RM Malkani v. State of Maharashtra*(1973), More guidance has been provided by courts. It was stressed that, legally obtained and uncoerced evidence is acceptable. Although *KS Puttaswamy v. The Union of India* (2017) voiced concerns regarding the right to privacy. It stresses striking a balance between the necessity of investigations and the right to privacy. Standardization of forensic analysis and robust chain of custody protocols are still necessary to ensure justice.

5.3 Balancing accuracy with human rights: ethical dilemmas in forensic phonetics

There are many ethical conundrums in forensic phonetics that call for balancing accuracy and human rights. Privacy rights and the possibility of personal information being misused are frequently at odds with voice recognition and precise speech analysis. Cases such as *KS Puttaswamy v. Union of India* 2017 illustrate this. The widespread practice of recording while conducting investigations without authorization may violate people's right to privacy. Another difficulty is making sure forensic methods are applied impartially. Because accents and dialects can result in unintentional profiling, they raise ethical concerns about discrimination and justice. If linguistic and cultural peculiarities are not taken into account mistakes may be made when technology is used excessively potentially jeopardizing the rights of the accused. To reduce these risks and guarantee that audio evidence is handled responsibly and openly, the legal system must create standardized procedures. Forensic phonetics can be useful in legal investigations but its use must

respect human rights and strike a balance between accuracy and moral obligation.

5.4 Discussion of bias in accent and dialect analysis

One of the most important issues in forensic phonetics is the analysis of accent and dialect bias. Accent and dialect are examples of speech characteristics that are commonly used to deduce a speaker's socioeconomic status, geography or ethnicity. In multicultural societies like India where many different languages are spoken, speech analysts may unintentionally introduce biases when interpreting speech. Stereotypes that influence assumptions about a speaker's origin may make forensic analyses less objective.

Furthermore miscommunication is more likely due to the complexity of multilingual interactions. Forensic tools and algorithms could miss less-documented dialects because they are often trained on small datasets which would further skew the results. Particularly, when the court cases are directly impacted by the results, the ethical concerns are surface. Linguists advise using a range of training datasets for forensic tools and well-documented standard operating procedures to lessen this bias. Focusing on phonetic characteristics rather than perceived sociocultural characteristics and cross-validating by unbiased experts can also make accent and dialect analysis more fair and reliable.

6. Integration into Legal Education

The integration of forensic phonetics into legal education serves to bridge the gap between it and judicial practice. The students will find it easier to evaluate audio evidence in the future if they understand the basics of phonetic analysis such as

speaker identification and spectrogram interpretation. This interdisciplinary approach fosters a sophisticated understanding of privacy laws, technological advancements and evidence standards. Providing legal students with these insights ensures the dependable use of forensic phonetics in courtroom settings advancing justice through rigorously scientific methods.

6.1 Importance of introducing forensic phonetics in legal studies

Forensic phonetics must be a part of legal studies in order to give future attorneys the information and abilities they need to understand and apply linguistic science in court. As audio evidence becomes more frequently used in cases involving fraud, corruption or terrorism, Judges and lawyers are better able to evaluate its validity and applicability due to their knowledge of forensic phonetics. Creating a connection between linguistics and law promotes interdisciplinary knowledge. Lawyers should be well-versed in basic concepts like spectrograph analysis and phoneme accents in order to better comprehend the complexities of voice identification.

With this knowledge, there is a lower chance that misinterpreted audio evidence will lead to incorrect convictions. Attorneys can enforce the law when using technology, if they are aware of privacy issues their ethical implications and admissibility requirements. In a technologically advanced society, law school curricula that integrate forensic phonetics can enhance students' proficiency and bolster the validity of court rulings by equipping them to handle modern evidentiary issues.

6.2 Skill building for law students: interpreting audio evidence and collaborating with linguists

Because digital evidence is so common in common law, the students need to learn how to work with linguists and interpret audio evidence. Pupils who study forensic phonetics are better able to analyze spectrograms, spot manipulated audio and assess voice recordings critically. With these skills, they can more successfully challenge or defend the admissibility of audio evidence in court disputes. By working with linguists to expose them to the nuances of accents, dialects and speech patterns, law students can cultivate interdisciplinary expertise.

When dealing with complicated cases involving disputed voice identities or multilingual audio teamwork is essential. Interaction with linguists teaches students how to assess audio evidence scientifically that ensuring the accuracy and impartiality in court. Training with practical forensic software and workshops and mock trials based on audio evidence can help to bridge the theory-practice gap. These courses ensure that the law graduates can work with the linguists to defend the rule of law and confidently take on evidentiary challenges.

6.3 Recommendations for curriculum design in Indian law schools

In order to modernize Indian law school curricula, forensic phonetics ought to be included as a specialized interdisciplinary module. The course should cover basic linguistics phonetic analysis techniques as well as the legal requirements for admitting audio evidence in court. In hands-on training sessions, forensic tools such as spectrogram software and case studies with real-world applications can help in bringing theory and practice closer together. Forensic lab internships and joint

projects with linguistics departments can enhance hands-on learning. Attending workshops on privacy laws, ethical concerns and significant decisions will also help the students to become more equipped to deal with evidentiary challenges. By making law graduates tech-savvy, this approach will equip them for evolving the legal environments.

7. Technological Innovations and Future Scope

The use of forensic phonetics technology is shifting the nature of legal investigations. Automated speech recognition and AI-driven voice analysis algorithms have significantly increased the accuracy of audio authentication tools such as enhanced spectrogram software and speaker identification. In India's multilingual environment innovations like real-time multilingual transcription and noise filtering technologies are particularly relevant as they address the issues caused by noisy or low-quality recordings.

Future improvements to biometric voice recognition will boost reliability and neural networks will be incorporated to pick up on subtle phonetic clues. These advancements open the door to revolutionary changes in forensic techniques that promise increased accuracy and broader applications by fusing linguistic theory with artificial intelligence capabilities.

7.1 Emerging technologies like AI and machine learning in voice analysis

Digital tools such as Artificial Intelligence (AI) And Machine Learning (ML) are transforming the application of voice analysis in forensic phonetics. These technologies analyze the subtle phonetic features like pitch, timbre and rhythm that are frequently undetectable to the human ear allowing for extremely

accurate speaker identification. In linguistically heterogeneous countries like India, advanced machine learning algorithms that can process massive datasets and spot patterns in a range of accents and dialects are crucial. Reducing background noise accurately, authenticating recordings and enhancing audio clarity are all accomplished by deep learning networks and other AI-powered systems.

Automated voiceprint matching and speech-to-text transcription will reduce human error while boosting productivity. In legal investigations, the increasing challenge of detecting fabricated or manipulated voices is also being attempted to be addressed by neural network models. These technologies not only increase the accuracy of phonetic analysis but also facilitate the use of audio evidence in court. As forensic phonetics advances, it will be updated to close the gaps in reliability and admissibility in court.

7.2 Future trends in multilingual voice recognition systems

Increasing accuracy and inclusivity in linguistically diverse contexts is the primary goal of future advancements in multilingual voice recognition technology. New technologies are utilizing Deep Learning and Artificial Intelligence (AI) to create models that can comprehend and identify a large number of languages and dialects. A common occurrence in multilingual societies like India where speakers fluidly switch between languages during conversations is code-switching which sophisticated neural networks can identify.

Speech synthesis and natural language processing are incorporating phonetic nuances and tonal variations to better understand regional accents. Furthermore, the systems can now operate effectively even in the absence of training data for

underrepresented languages thanks to the development of Zero Shot and Low Resource Language Learning models. Real-time multilingual transcription and translation is being used more and more in forensic and legal contexts to guarantee the equitable access to the legal system and bridge communication gaps. Furthermore, these advancements have the potential to democratize technology in multilingual global contexts while also enhancing the forensic applications.

7.3 Potential for improving the accuracy and speed of investigations

Advances in forensic phonetics could significantly improve the precision and effectiveness of investigations. Automated tools such as AI-powered voice recognition software and real-time spectrographic analysis have sped up the processing of complex audio evidence and decreased human error. Even low-quality recordings can be transformed into actionable evidence, credits to algorithms capacity to distinguish speech patterns from background noise which is frequently necessary in circumstances involving high stakes. In linguistically diverse nations, multilingual voice analysis tools are increasing efficiency because they enable smooth identification across the languages and dialects.

Furthermore, Machine Learning-based forensic software gradually increases the data models dependability allowing for ongoing development. By reducing the time required to verify crucial audio evidence, systems for speaker verification and real-time transcription are expediting investigations. Technology advancements allow the lawyers to focus on strategy and interpretation instead of technical issues which speeds up the administration of justice while maintaining high standards of evidence.

7.4 The global and Indian perspective on adopting cutting-edge phonetic tools

Both internationally and in India, the application of sophisticated phonetic tools is transforming the forensic investigations. Leading nations like the US, UK and Australia are adopting cutting-edge technologies like AI-powered voice analysis and spectrographic software. Using automated speech recognition systems and machine learning algorithms, these nations ensure higher speaker identification accuracy even in challenging situations. In India, these tools are being used more frequently especially in high-profile cases involving corruption and terrorism fraud. A variety of tools for processing languages and dialects are necessary because of the nation's multilingualism. To expedite the legal process, forensic labs and legal frameworks have integrated speaker verification systems, real-time transcription services and noise reduction algorithms. To guarantee that technological developments respect human rights, ethical and privacy concerns continue to shape international policy debates. India's growing investment in forensic infrastructure demonstrates its commitment to meet these international standards.

8. Conclusion

In linguistically diverse regions like India, the use of forensic phonetics and advanced linguistic techniques is transforming legal investigations. To solve problems with accuracy, dependability and admissibility, the field should give priority to two AI-driven tools: Spectrographic Analysis and Multilingual Processing Systems. For Indian legal systems to handle the complexity of its multilingual and well-known cases, state-of-the-art phonetic technologies must be actively incorporated. Establishing unwavering moral standards that

protect privacy and uphold the integrity of the evidence is necessary.

The study of forensic phonetics which focuses on improving skills in the evaluation and interpretation of audio evidence ought to be required in legal education. The more technologists and linguists work together, the more trustworthy audio evidence will be in the court. Along with continued research, a significant investment in forensic infrastructure will establish India as a world leader in the application of linguistics in legal settings bringing about justice with previously unheard-of speed and precision.

8.1 Summarize the transformative role of forensic phonetics in legal investigations

Forensic phonetics which connects linguistic science and the legal system has transformed the field of legal investigations. When it comes to speech authentication, accent and dialect recognition and speaker identification it can accurately analyze and interpret audio evidence. This is the origin of its transformational potential. Forensic phonetics methods such as Spectrographic Analysis and Voiceprint Matching have played a significant role in the resolution of cases involving corruption, terrorism and fraud.

A prevalent issue in a linguistically diverse nation like India is the analysis of multilingual and noisy audio data using cutting-edge technologies like Artificial Intelligence (AI) and Machine Learning. By lessening linguistic biases, these tools ensure fair access to the justice while accelerating investigations. Given the moral and legal issues brought up by forensic phonetics a balance between people's right to privacy and technological efficiency is also required. Future professionals are

given the skills they need and interdisciplinary cooperation is promoted by incorporating the audio evidence evaluation into legal education. Linguistics and law are combining to revolutionize investigative techniques to ensure prompt and accurate justice administration and establish international benchmarks for the forensic innovation.

8.2 Reiterate its necessity for enhancing justice delivery in India

With India's judicial system struggling with linguistic diversity and technological obstacles, forensic phonetics is crucial. By analyzing speech patterns, accents and dialects, audio evidence becomes more trustworthy and understandable in multilingual contexts. India can expedite high-profile cases and reduce errors by utilizing AI-driven technologies for noise reduction and voice recognition. By eliminating judicial delays, forensic phonetics improves the efficiency of the legal system in addition to assist in the search for the truth. For prompt and fair justice to be served, it must be incorporated into Indian legal procedures.

8.3 Call for greater collaboration between linguists, legal professionals, and technologists

More cooperation between Linguists and Legal experts and Technologists is required due to the increasing demand for efficient forensic phonetics in legal investigations. Language experts provide their knowledge of phonetic analysis and acoustic principles while legal experts make sure the evidence satisfies the court requirements. Technologists particularly those with experience in AI and Machine Learning to improve the efficiency of analysis tools enabling quicker and more accurate results.

By encouraging interdisciplinary collaboration, these experts can collaborate to create trustworthy systems for audio evidence analysis to raise the standard for the administration of justice. To solve issues like accent bias, language barriers and the integrity of the evidence in complex cases, the collaboration is required. Combining these areas will improve the morality and efficiency of legal processes while also advancing the main objective of using technology to provide fair and timely justice. By means of institutional partnerships and training this collaborative approach can be implemented in academic settings and legal practice to establish a more comprehensive framework for forensic linguistics in India and globally.

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ROLE OF SOCIAL ENTREPRENEURS IN GRASSROOTS DEVELOPMENT

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Abstract

In the contemporary development landscape, social entrepreneurs play a pivotal role in fostering grassroots development. They act as catalysts for social transformation by identifying innovative and practical solutions to emphasize the societal challenges through the integration of innovation, resource mobilization and opportunity creation, social entrepreneurs contribute significantly to sectors such as agriculture, health, education, environment and livelihood development. This paper is an attempt to examine the role of social entrepreneurs in grassroots development through case study analysis. The findings highlight their contribution to sustainable development, poverty alleviation and community empowerment.

Key words: Social Entrepreneurship, Grassroots Development, Innovation, Rural Development, Sustainability

Introduction

Social entrepreneurship has emerged as a transformative approach to address complex social issues. Social entrepreneurship is an alternative development approach and

also a hybrid institutional mechanism that operates at the intersection of market efficiency and social welfare rather than solely focusing on innovation and opportunity recognition, social entrepreneurs function as system-level change agents who challenge existing institutional gaps and governance failures. Their role extends beyond solving immediate social problems to restructuring the underlying socio-economic conditions that perpetuate inequality and exclusion.

In contrast to conventional entrepreneurship, where value is primarily measured in financial returns, social entrepreneurship emphasizes blended value creation, integrating economic sustainability with measurable social impact. Social entrepreneurs work within resource-constrained environments, requiring them to adopt adaptive strategies, build collaborative networks and mobilize community participation. Their interventions are particularly significant in addressing structural issues such as poverty, unemployment, environmental degradation and inequitable access to essential services.

Thus, social entrepreneurship viewed as a participatory and inclusive development model where communities are beneficiaries with active stakeholders in the development process. This approach enhances resilience, promotes local ownership and contributes to long-term sustainable development.

Earlier Studies on Social Entrepreneurs

Tota Miah (2024) study found that increasing social and environmental challenges in poverty has brought social entrepreneurship. It has emerged as a critical issue in the context of economic development and societal well-being. The study presents a comprehensive bibliometric analysis in the field of

social entrepreneurship and poverty alleviation to explain the current state and geographical performance. The findings reveal a significant increase in research activity in this field since 2009, indicating a growing demand for it as a solution to social challenges. Notably, the years 2021–2022 witnessed a remarkable 55% surge in poverty reduction. This study assesses the geographic distribution of research contributions, highlighting regions with relatively lower research performance, such as South Asian and African countries. Leading in this domain are the UK, Spain, the USA, and European institutions.

Nchasi et al. (2022) study indicated that social entrepreneurship has increasingly become an integral aspect of social innovation and sustainable development, offering a means to tackle challenging social problems. In recent years, it has been a subject of academic exploration, gathering researchers' attention because of its potential economic prosperity and social benefits.

Chzhen et al. (2018) study found that a more comprehensive understanding of poverty is consistent with the sustainable development goal of eradicating poverty in all its forms by 2030. They recognize that poverty encompasses various aspects that impact an individual's well-being and are not limited to financial constraints. Indicators that encompass the economic and social aspects of households and individuals, such as their financial situation, vulnerability to material deprivation, and availability of essential services, collectively constitute poverty.

Mohammed and Ndulue (2017) study found that a significant positive relationship between social entrepreneurship and poverty reduction. This research highlighted the key factors of low-cost waste collection infrastructure, recycling for environmental sustainability, and the provision of social welfare,

all of which contributed to creating employment opportunities and reducing poverty.

Earnest and Young (2014) study observed that creating value for society in many countries the role of the government in the socio-economic domain is shifting towards privatization of public responsibilities. As a result, charities receive less public funds and social entrepreneurship is gaining momentum worldwide. Research in the fields of activity of social enterprises in Europe shows that social entrepreneurs focus on social services, employment & training, the environment (including cleantech and bio-systems), education and community development. Hence, the increasing number of social enterprises may result in widespread gains for public budgets. The attractiveness of social enterprises as employers is increasing as well. The number of FTEs working in Dutch social enterprises is increased by 12% between 2012 and 2014. Young professionals in particular, value the reputation of social enterprises above traditional companies that strive for profit maximization.

Singh, Partap's (2012) study indicated that social entrepreneurship is the recognition of a social problem and the uses of entrepreneurial principles to organize create and manage a social venture to achieve a desired social change. While a business entrepreneur typically measures performance in profit and return, a social entrepreneur also measures positive returns to society. Thus, the main aim of social entrepreneurship is to further broaden social, cultural, and environmental goals. Social entrepreneurs are commonly associated with the voluntary and not-for-profit sectors, but this need not preclude making a profit. Social entrepreneurship practiced with a world view or international context is called international social entrepreneurship. A well-known modern social entrepreneur is Muhammad Yunus, founder and manager of Grameen Bank and

its growing family of social venture businesses, who was awarded a Nobel Peace Prize in 2006”.

These studies collectively indicate that social entrepreneurship is a critical mechanism for achieving inclusive and sustainable development.

Methodology

This study adopts a qualitative case study approach to analyze the role of social entrepreneurs in grassroots development. Two case studies were selected based on their relevance to rural development, innovation and sustainability (organizational reports and documents).

Case Analysis

The K. R Agro Farms and Centre for Improved Rural Health and Environmental Protection institutions are studied to understand the roles which are played for the grassroots development. They are presented as follows

Case -1: K. R Agro Farms – Transforming Agricultural Practices at the Grassroots

Background of the Enterprise

K.R Agro Farms founded by Dr. K. Parameswaran, it is an agro-based social enterprise located in Oddanchatram, Dindigul District, Tamil Nadu. The organization was established with the objective of improving agricultural productivity and ensuring sustainable livelihoods for farmers. The enterprise focuses on the production, procurement and marketing of agricultural commodities such as sambar onions, drumsticks, cluster beans and other vegetables. It also engages in research and development activities to improve crop varieties and farming

techniques. A key issue identified by the founder was the lack of technical knowledge among farmers regarding fertilizer application, pest control and crop management. Farmers heavily depended on input dealers who lacked scientific expertise, leading to excessive input usage and reduced crop yields.

Identification of Problem

The major challenges faced by farmers in the region included:

- Improper use of fertilizers and pesticides
- Lack of scientific knowledge on crop management
- High cost of cultivation with low productivity
- Poor awareness of sustainable agricultural practices
- Limited access to quality seeds and technical guidance

These issues resulted in low agricultural efficiency, reduced income and environmental degradation.

Intervention by the Social Entrepreneur

Dr. K. Parameswaran is an alumnus of Gandhigram Rural Institute, who has addressed these challenges through a combination of innovation, capacity building and community engagement:

Technical Guidance and Training

- Educated farmers on proper dosage and timing of fertilizers
- Promoted scientific nutrient management (100% K, 100% P, 50% N application)
- Conducted training programs on pest and disease management

Promotion of Innovative Farming Techniques

- Introduced relay cropping (e.g., tomato with onion)
- Encouraged crop rotation and intercropping
- Advocated proper spacing to increase productivity

Research and Development

- Developed improved crop varieties (CO-ON-5, Trika, Avatar for onions)
- Promoted high-yield drumstick varieties (PKM1)
- Undertook continuous experimentation for varietal improvement

Digital Knowledge Dissemination

- Created WhatsApp groups such as:
 - Indian Moringa Growers Group
 - Tamil Nadu Onion Growers Group
- Facilitated real-time knowledge sharing among farmers through phone calls morning and evening (consultation)

Input Optimization

- Reduced excessive fertilizer usage
- Promoted cost-effective farming practices
- Encouraged responsible pesticide use with proper waiting periods

Outcomes and Impact of the Initiatives

The interventions led to significant improvements:

- Reduction in cost of cultivation by up to 25%
- Increase in crop productivity and quality
- Enhanced farmer awareness and technical knowledge
- Adoption of sustainable agricultural practices
- Strengthened farmer networks through digital platforms
- Improved income and livelihood security

The enterprise also contributed to employment generation and strengthened rural agricultural systems.

Role Played by Dr. K. Parameswaran, Social Entrepreneur

The case clearly demonstrates the multidimensional role of the social entrepreneur:

1. Change Agent - Dr. Parameswaran acted as a catalyst for transforming traditional farming practices into scientific and sustainable agriculture.

2. Knowledge Provider - He bridged the knowledge gap by providing technical expertise that was previously inaccessible to farmers.

3. Innovator - Introduced innovative practices such as relay cropping, improved seed varieties and ICT-based knowledge sharing.

4. Capacity Builder - Empowered farmers through training and awareness, enabling them to make informed decisions.

5. Resource Mobilizer - Facilitated access to quality inputs, research support and market linkages.

6. Sustainability Advocate - Promoted environmentally sustainable practices and responsible use of agrochemicals.

7. Community Mobilizer - Encouraged collective learning and collaboration through farmer networks and digital platforms.

This case illustrates that social entrepreneurship in agriculture goes beyond income generation and extends to:

- Enhancing productivity through knowledge-based interventions
- Promoting sustainable and climate-resilient farming practices
- Strengthening rural institutions and farmer networks
- Integrating traditional practices with modern technology

The success of K.R Agro Farms highlights the importance of context-specific, participatory and innovation-driven approaches in grassroots development.

Case-2: Centre for Improved Rural Health and Environmental Protection (CIRHEP) – Sustainable Rural Development through Environmental and Community-Based Interventions

Background of the Organization

The Centre for Improved Rural Health and Environmental Protection (CIRHEP) is a Non-Governmental Organization working in Nilakottai, Tamil Nadu with operational areas in Madurai and Theni Districts. Founded under the leadership of Mr. P. M. Mohan and Ms. K. A. Chandra, the organization focuses on improving rural livelihoods through environmental conservation, health promotion, education, and income generation. CIRHEP's mission is to establish a sustainable human–ecology relationship by addressing poverty, environmental degradation, and lack of livelihood opportunities through community participation.

Context of Problem

Rural communities in the operational areas faced multiple interrelated challenges:

- Water scarcity and declining groundwater levels
- Environmental degradation and deforestation
- Low agricultural productivity
- Limited livelihood opportunities for women and youth
- Lack of awareness about sustainable farming practices
- Vulnerability to climate variability

These issues affected both economic stability and ecological sustainability in rural areas.

Interventions by the Social Entrepreneur

CIRHEP adopted a multi-dimensional and participatory approach to rural development:

Watershed Development

- Implemented micro-watershed projects to conserve soil and water
- Formed Village Watershed Committees for community management
- Improved water retention through tanks, ponds and channels

Sustainable Planting and Reforestation

- Conducted large-scale tree planting programs
- Promoted awareness on environmental conservation
- Increased groundwater levels through ecological restoration

Climate-Resilient Agriculture

- Introduced drip irrigation and micro-sprinkler systems
- Promoted integrated farming systems
- Encouraged fodder development and sustainable land use

Organic and Bio-Dynamic Farming

- Provided training on vermicomposting, panchakavya and bio-inputs
- Conducted field demonstrations and exposure visits
- Promoted eco-friendly agricultural practices

Women Empowerment and Livelihood Development

- Formed and strengthened Self-Help Groups (SHGs)
- Facilitated income-generating activities such as dairy farming, petty shops, and vegetable sales
- Enhanced financial inclusion and socio-economic empowerment

Environmental Education (Nature Schools)

- Educated children (5–14 years) on ecology and conservation
- Used experiential learning methods such as trekking, games, and fieldwork
- Built environmental awareness among future generations

Institutional Capacity Building

- Established a Natural Resource Management Training Centre
- Shared best practices across watershed communities
- Facilitated knowledge exchange and skill development

Outcomes and Impact

The interventions resulted in significant socio-economic and environmental benefits:

- Improved groundwater levels and water availability
- Enhanced agricultural productivity and sustainability
- Increased income opportunities for rural households
- Strengthened women's empowerment and community participation
- Improved environmental awareness among children and adults
- Greater resilience to climate change

CIRHEP successfully integrated livelihood development with ecological conservation, ensuring long-term sustainability.

Role Played by the Social Entrepreneur

The case highlights the diverse roles played by the social entrepreneurs leading CIRHEP:

1. Environmental Steward - Promoted conservation of natural resources through watershed development and reforestation initiatives.

2. Community Mobilizer - Encouraged active participation of local communities through committees, SHGs and training programs.

3. Capacity Builder - Enhanced skills and knowledge of farmers, women and youth through training and exposure.

4. Innovator - Introduced climate-resilient and sustainable agricultural practices tailored to local conditions.

5. Livelihood Facilitator - Created alternative income opportunities and strengthened rural economies.

6. Educator and Awareness Creator - Built environmental consciousness through Nature Schools and community education programs.

7. Institutional Builder - Established structures such as watershed committees and training centers to sustain development efforts.

The CIRHEP case demonstrates that:

- Social entrepreneurship can effectively integrate environmental sustainability with socio-economic development
- Participatory approaches ensure community ownership and long-term impact
- Capacity building is central to empowering marginalized groups
- Multi-sectoral interventions are essential for addressing complex rural challenges

The organization exemplifies a holistic development model, where ecological balance and human well-being are interdependent.

Major Findings of the cases: Social Entrepreneur Perspective

The analysis of K R Agro Farms and CIRHEP reveals several critical insights into the role and functioning of social entrepreneurs at the grassroots level:

1. Social Entrepreneurs as System-Level Change Agents

Social entrepreneurs address surface-level issues and intervene in structural and systemic gaps such as lack of knowledge, institutional inefficiencies and resource mismanagement. Their initiatives transform traditional practices into more efficient, sustainable systems.

2. Knowledge-Centric Approach to Development

The study finding emphasis on knowledge dissemination and capacity building. Both cases highlight that empowering communities with technical knowledge (e.g., scientific farming, watershed management) leads to sustainable and self-reliant development.

3. Integration of Economic, Social, and Environmental Goals

Social entrepreneurs adopt a triple-bottom-line approach, balancing:

- Economic viability (income generation, employment)
- Social inclusion (community participation, women empowerment)
- Environmental sustainability (organic farming, watershed development)

This integrated model ensures long-term impact rather than short-term gains.

4. Innovation in Resource-Constrained Environments

Social entrepreneurs demonstrate context-specific innovation such as:

- Relay cropping and ICT-based advisory systems
- Climate-resilient agricultural practices
- Community-based natural resource management

These innovations are low-cost, scalable, and adaptable to rural conditions.

5. Community Participation and Ownership

Both cases emphasize participatory development, where communities are active stakeholders rather than passive beneficiaries. This enhances:

- Local ownership
- Sustainability of interventions
- Collective problem-solving capacity

6. Role in Strengthening Rural Institutions

Social entrepreneurs contribute to building grassroots institutions such as:

- Farmer networks and digital platforms
- Self-Help Groups (SHGs)
- Watershed committees and training centers

These institutions play a crucial role in sustaining development initiatives.

7. Promotion of Sustainable and Climate-Resilient Practices

A strong orientation towards environmental sustainability is evident. Social entrepreneurs promote:

- Efficient resource use
- Ecological restoration
- Climate adaptation strategies

This ensures resilience in the face of environmental challenges.

8. Bridging the gap between Market and Knowledge

Social entrepreneurs act as intermediaries linking:

- Farmers with markets

- Communities with technical knowledge
- Local practices with scientific innovations

This bridging role enhances productivity and income.

9. Focus on Inclusive Development

Special attention is given to marginalized groups, particularly women and small farmers, ensuring equitable access to opportunities and resources.

10. Scalability and Replicability of Models

The interventions demonstrate potential for scaling and replication in other rural contexts due to their adaptability and community-driven nature.

Conclusion

This study highlights that social entrepreneurs play a transformative role for the grassroots development by addressing complex socio-economic and environmental challenges through innovative and participatory approaches. The cases of K R Agro Farms and CIRHEP demonstrated that social entrepreneurship extends beyond conventional development practices by integrating knowledge, innovation and community engagement. Social entrepreneurs emerge as catalysts of sustainable development which enables communities to transition from dependency to self-reliance. The social entrepreneurs' ability to combine local knowledge with scientific practices, mobilize community participation and create sustainable livelihood opportunities underscores their significance in rural development.

Therefore, the study concludes that social entrepreneurship is a viable and effective model for inclusive and sustainable development, particularly in resource-constrained rural settings. Strengthening institutional support,

policy frameworks and capacity-building initiatives further enhance the impact and scalability of social entrepreneurial interventions.

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Secrets of Centenarians and Longevity

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Abstract

“A man is not old until regrets take the place of dreams,”
– John Barrymore.

Tribal and ancient communities demonstrate longevity and health through an ancient holistic healing science with the combination of habits like maintaining strong social bonds, prioritizing physical activity, following “The Blue Zones diet” which is plant-based, incorporating cruciferous vegetables with anti-inflammatory and rejuvenating properties in their diet, detoxification practices, adequate sleep, stress management, prioritizing mental health, and living in harmony with natural rhythms and stay hydrated.

UN estimates the current global centenarian population between 722,000 and 935,000. The top five countries by centenarian count are Japan (146,000), the United States (108,000), China (60,000), India (48,000), and Thailand (38,000). Ikaria (Greece), Okinawa (Japan), Sardinia (Italy), Nicoya (Costa Rica), and Loma Linda (California) are paradises where people “**forget to die**”. **In India we can come across such paradises along with the tribal settlements in the Ghat region where they live in concord with their environment.**

This is made possible by following “The Blue Zones diet” along with superherbs such as Turmeric, Ashwagandha,

Indian Gooseberry, *Bacopa monnieri*, *Centella asiatica*, *Evolvulus alsinoides*, minor millets as well as cruciferous vegetables which support mental health by improving memory and reducing stress and anxiety. The bioactive compounds of such herbs enhance cognitive function, improve neurogenesis, and balance neurotransmitters like dopamine and serotonin, enhancing alertness and offering neuroprotective effects, which contribute to promote brain health and act as a potential remedy for symptoms of depression.

They possess nootropic, adaptogenic, anxiolytic and antidepressant properties, making it a promising natural support for brain function and stress management. Such natural foods enhance longevity and promote good health leading to graceful ageing by promoting mental health. Data was collected by survey, questionnaires and personal interviews. Collected samples were analysed in phytochemistry laboratories.

Key words: centenarian, tribal, longevity, diet, herbs, ageing.

Introduction

Tribal and ancient communities demonstrate longevity and health through an ancient holistic healing science with the combination of habits like maintaining strong social bonds, prioritizing physical activity, following “The Blue Zones diet” which is plant-based, incorporating cruciferous vegetables with anti-inflammatory and rejuvenating properties in their diet, detoxification practices, adequate sleep, stress management, prioritizing mental health, and living in harmony with natural rhythms and stay hydrated.

Centenarian Population

UN estimates the current global centenarian population between 722,000 and 935,000. The top five countries by centenarian count are Japan (146,000), the United States (108,000), China (60,000), India (48,000), and Thailand (38,000). Ikaria (Greece), Okinawa (Japan), Sardinia (Italy), Nicoya (Costa Rica), and Loma Linda (California) are paradises where people “forget to die”. In India we can come across such paradises along with the tribal settlements in the Ghat region where they live in concord with their environment. These longevity regions have unusually high numbers of healthy people living into their 90s and 100s. Researchers noticed recurring patterns across cultures with very different cuisines and traditions.

Study Area

The study area is the foot hills of Velliangiri Hills which forms the eastern part of Western Ghats in the Tamil Nadu State. The area forms a part of The Nilgiri Biosphere. The area is rich in flora and has diverse biomes in different elevations with fair knowledge of tribal people about medicinal plants. It forms a major range in this biosphere reserve, revered for its medicinal plants. This area is an effective elephant migratory corridor falling under the Boluvampatty reserve range.

Methodology

Data was collected by survey, questionnaires and personal interviews. Collected samples were analysed in phytochemistry laboratories. To proceed with the interview, a randomized sampling procedure was adopted. Questionnaire with dichotomous questions were used to evaluate the prevalence

of knowledge regarding the herbs and open-ended questions were used to identify the methods practiced by using medicinal plants as food to increase the longevity.

Results and discussion

Super herbs

Increase in longevity is made possible by following “The Blue Zones diet” along with superherbs such as Turmeric, Ashwagandha, Indian Gooseberry, *Bacopa monnieri*, *Centella asiatica*, *Evolvulus alsinoides*, minor millets as well as cruciferous vegetables which support mental health by improving memory and reducing stress and anxiety.

The bioactive compounds of such herbs enhance cognitive function, improve neurogenesis, and balance neurotransmitters like dopamine and serotonin, enhancing alertness and offering neuroprotective effects, which contribute to promote brain health and act as a potential remedy for symptoms of depression.

Super herbs and their activities

S. No	Scientific name	Family	Common name	Bioactive compounds	Properties
1	<i>Bacopa monnieri</i>	Plantaginaceae	Brahmi	Brahmine, nicotine herpestine, bacoside A, bacoside B,	improving synaptic communication, inducing

				betulinic acid, beta-sitosterol, D-mannitol,	nerve cell regeneration, highly enhanced overall cognitive ability, memory modulatory effects on the GABA receptors
2	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Vallarai	asiatic acid, madecassic acid, madecassoside 23-O-acetylmadecassoside 23-O-acetylasiatoside B.	Improve memory and mental clearness. neuroprotective effects, antiapoptotic mechanisms,

				asiaticoside C, asiaticoside F quercetin sitosterol	for neurological conditions like Alzheimer's and Parkinson's, stimulating collagen production, preserving the structural strength of blood vessels in Chronic venous insufficiency
3	<i>Evolvulus alsinoides</i>	Convolvulaceae	Vishnukiranthi.	Evolvine Pentatriacontane, β -sitosterol	Anxiolytic Effects, Adaptog

				Glycoflavone 4'-methoxyvitexin p-hydroxybenzoic acid, vanillic acid, protocatechuic acid, gentisic acid, tetradecanoic acid, myristic acid, pentadecanoic acid	enic and Antiamnesic Activity , Learning and Memory Enhancement, improve cognitive functions, enhancing cholinergic activity, Neuroprotection in Alzheimer's disease management, antioxidants activity, Antidep
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					ressant Cardiovascular Benefits and protect against myocardial injury.
4	<i>Phyllanthus emblica</i>	Phyllanthaceae	Indian gooseberry	Emblicanin A, emblicanin B, puniglucosin and pedunculagin	Antiviral, antimicrobial, anticancer, hepatoprotective and anti-diabetic
5	<i>Withania somnifera</i>	Solanaceae	Ashwagandha	Steroidal lactones, withanolides, withaferin A	Chemopreventive, anticancerous, memory enhancer and immunomodulatory,

					used in Parkinson's and Alzheimer's disorders
6	<i>Curcuma longa</i>	Zingiberaceae	Turmeric	Ar-turmerone, curcumerone, β -turmerone, 8,9-dehydro-9-formyl-cycloisolongifolene, β -sesquiphellandrene, germacronene, ar-curcumenone, α -himachalene, and androlidene Flavonoid Curcumin	Anticancer, anti-inflammatory, hepatoprotective Choleretic

Characteristics of the Plants

They possess nootropic, adaptogenic, anxiolytic and antidepressant properties, making it a promising natural support for brain function and stress management. Such natural foods enhance longevity and promote good health leading to graceful ageing by promoting mental health.

Centenarians

Centenarians and near-centenarians typically had a balanced and diverse diet, lower medication use, getting good sleep and natural living environment. More than 75 percent of the



centenarians and near-centenarians in our study lived in rural areas. This may be partly related to the connection between nature and health and wellbeing. The earlier we can adopt positive lifestyle changes and healthier habits, the better placed we will be to achieve a long and healthy life. Becoming a centenarian is a lifelong endeavour. People who live to 100 tend to share a surprisingly consistent set of habits, environments, and social patterns. Researchers studying longevity hotspots — often called “Blue Zones” — have found that genetics matter, but daily lifestyle matters more for most people.

Common “secrets” of centenarians

1. They move constantly — but rarely “exercise hard”. Most centenarians are physically active throughout the day

2. They stop eating before they’re full

They eat food in smaller portions slowly. Overeating is very rare.

3. Mostly plant-based diets

Centenarian diets vary, but usually vegetarian food.

4. Strong social relationships

Centenarians often have tight family bonds and community involvement. This reduces chronic stress and depression.

5. They manage stress well

Long-lived populations often practice prayer, meditation and spiritual traditions

6. They avoid major longevity killers such as smoking, heavy alcohol use, obesity, chronic inactivity and sleep deprivation.

Conclusion

In the study area numerous plants with medicinal properties are present and they are being documented. The ethnic and local communities consume these plants in their villages as food. Besides they drink water from natural springs flowing in the mountain regions which also has medicinal properties since they are flowing through medicinal plants. Fresh fruits, vegetables and greens harvested and consumed from the natural environment has also contributed to their longevity.

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**A STUDY ON DRINKING WATER FACILITIES IN
RURAL AREAS AND ITS RELATIONSHIP WITH
ENVIRONMENTAL SUSTAINABILITY**

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Abstract

This study emphasizes the connection between drinking water facilities and environmental sustainability in rural areas of Dindigul district, Tamil Nadu.

Through five extensive field studies, it examines how water access, quality, governance and local environmental practices interact. Data was collected through interviews and field surveys. Through five extensive field studies, it examines how water access, quality, governance and local environmental practices interact. Data was collected through interviews and field surveys.

Keywords: Rural Drinking Water, Environmental Sustainability, Groundwater Depletion, Water Governance, Community Participation, Water Quality and Health

INTRODUCTION

Access to safe and adequate drinking water is not only a fundamental human right but also a prerequisite for public health, environmental sustainability, and socio-economic development. Globally, the World Health Organization (2023) estimates that approximately 2.2 billion people lack access to safely managed drinking water services. The United Nations (2022) points out that nearly 1.5 million children die each year

from diseases related to unsafe water, poor sanitation and lack of sanitation. UNICEF (2023) further states that women and girls around the world spend approximately 200 million hours each day collecting water, which hinders their access to education and income-generating activities.

In India, despite various national programs, access to safe drinking water remains uneven. According to the Ministry of Jal Shakti (2022), about 163 million people in India still do not have access to basic drinking water facilities. The Jal Jeevan Movement, launched in 2019, aims to provide piped drinking water to every rural household by 2024. However, implementation challenges including infrastructure gaps, groundwater depletion, and pollution continue to plague rural areas.

Tamil Nadu is a water-scarce state due to its semi-arid climate, erratic rainfall and excessive groundwater abstraction. According to a report by the TWAD Board (2022), only 45% of rural households in Tamil Nadu have piped water connections.

Groundwater in many districts, including Dindigul, is rapidly depleting and has been found to be frequently polluted by untreated sewage, industrial waste and chemical fertilizers. The Central Ground Water Board (2021) has classified several areas in Tamil Nadu as being in a marginally hazardous or hazardous condition based on the groundwater level situation.

Dindigul district is a microcosm of these challenges. Water resources are under great pressure due to a growing population and industries such as textile and tanneries. Traditional water sources like ponds and ponds are often encroached upon or left to deteriorate. According to the Tamil Nadu State Climate Change Action Plan (2020), Dindigul district is one of the zones most vulnerable to water scarcity due to climate change.

REVIEW OF LITERATURE

Narain (2019) asserts that mismanagement and poor governance are the primary causes of India's water shortage, rather than a lack of resources. Rural areas are particularly affected by outdated infrastructure and ineffective policies. Kumar and Ramesh (2020) highlight the reliance on borewells in Tamil Nadu and note that the neglect of traditional water systems has led to unsustainable water abstraction. Singh and Prasad (2021) have documented direct health impacts of poor quality drinking water in rural areas, especially among children, and are associated with higher rates of gastrointestinal infections.

The TWAD Board (2022) cites logistical issues such as pipe damage and low water pressure as major obstacles to the implementation of state water supply projects. According to the World Bank (2022), successful rural water supply systems require participatory governance, transparency and local accountability mechanisms. Gupta and Narayanan (2021) show that decentralized water management systems guided by community participation are more effective in ensuring equitable access to water for all. Subramanian (2020) argues that traditional water harvesting structures such as tanks should be revitalized, particularly in water-scarce districts of Tamil Nadu. Balasubramaniam (2018) links water scarcity in rural Tamil Nadu to migration patterns and examines how water insecurity hinders demographic changes. Reddy and Rao (2022) emphasize that awareness campaigns on sanitation and waterborne disease prevention significantly improve community health outcomes. The United Nations Development Programme (UNDP) (2023) finds that investments in rural water infrastructure increase resilience to climate shocks and promote sustainable development.

OBJECTIVES

1. To assess the availability and quality of drinking water in rural areas of Dindigul.
2. To understand water use patterns among different socio-economic groups.
3. To assess the current infrastructure and management management.
4. To identify the link between water access and environmental sustainability.

METHODOLOGY

This study follows a qualitative case study methodology. Data were collected by conducting field visits to villages in Dindigul district and selecting five respondents involved in household water management through purposive sampling. Data were collected through semi-structured interviews, participant observations and photographic documentation. Secondary data included reports obtained from TWAD, WHO, and academic sources.

CASE STUDIES

Case 1: Mrs. Murugeshwari, Oothupatti A 28-year-old daily wage earner, she manages a family of four with an annual income of Rs. 72,000. Her family relies on brackish borewell water and limited government water supplies, which are available for only two hours three times a week. She copes with this by filling ten buckets when water is available. She practices rainwater harvesting through a stone tank built at home. She notes that most village wells have dried up or are closed, and that shared piped connections (one for every ten households) create inequality. She calls for piped connections and quality monitoring at the household level.

Case 2: Mr. Ramar, Oothupatti A 25-year-old tempo driver, living in a family of three with a monthly income of Rs. 30,000,

gets salt water from a pipe to his house four times a week, within three hours. His wife fetches the water. With no rainwater harvesting, they are completely dependent on polluted water sources. He condemns the mismanagement of the panchayat leadership. He calls for equitable piped water distribution, regular water quality testing and administrative reform.

Case 3: Mr. Manohar, J. Oothupatti A 35-year-old driver earns Rs. 12,000 a month. His family of four depends on public wells, hand pumps and sporadic tanker services. He says he often suffers from health problems due to the contaminated water. Hand pumps often provide foul-smelling water, and the tanker schedule is inconsistent. He has installed a basic rainwater harvesting system. His recommendations include regular water testing, reliable tanker schedules, and proper sanitation.

Case 4: Mrs. Vijaya, Oothupatti A 50-year-old daily wage earner earns Rs. 500 a day. She is given tap water, usually highly saline, twice a week for an hour, set up for washing. She notes that despite a recent new pipe being laid, the water is not fit for drinking. Village council meetings are infrequent and ineffective. She emphasizes converting saltwater into drinking water and improving local ownership.

Case 5: Mrs. Dhanam, Dindigul Rural Outskirts A 45-year-old widow and part-time domestic worker, she lives with her two children and relies on seasonal well water and an inconsistent tanker supply. Despite the health risks, boiling water is not always feasible. Her self-help group has submitted petitions for clean water, but has received no response. She was expanding rainwater harvesting and providing special support to vulnerable families.

CASE ANALYSIS AND STATISTICAL HIGHLIGHTS

Indicator	Percentage Observation
Households relying on borewells	100%
Households with rainwater harvesting	40%
Regular water supply (min. 4 days/week)	60%
Households facing health issues from water	80%
Respondents demanding governance reform	100%

According to this field analysis, 100% of the households surveyed depend on borewell water or tanker water, which is mostly unfit for drinking. Only 40% of the households have rainwater harvesting structures, while the rest depend entirely on unstable and polluted water sources. About 80% reported health problems like stomach ache, diarrhea and skin allergies. This shows a strong link between water quality and health. In terms of governance, every respondent pointed to failures in planning and monitoring or grievance redressal at the panchayat level. Women bear a heavy burden in water management; they often spend 1 to 2 hours a day collecting water and testing its quality. These responsibilities limit their ability to participate in economic and educational activities. Despite the progressive policies prevalent in Tamil Nadu, most of the Gram Sabha meetings held in these villages are nominal; no actionable decisions are reached. Funds allocated for water projects are misused or poorly implemented.

A common trend is emerging that inadequate infrastructure, poor governance and social apathy reinforce water insecurity. Revitalizing traditional ponds, ensuring equity in

pipled water supply, subsidizing household filtration units and promoting participatory monitoring through self-help groups and youth forums can break this cycle. The statistical model further suggests that households with rainwater harvesting facilities have 60% fewer illnesses and 60% higher satisfaction with water availability.

MAJOR FINDINGS

- The study has revealed several key facts about the state of drinking water facilities in rural areas of Dindigul district of Tamil Nadu. Firstly, water availability is highly uneven and inadequate. Although some areas have access to government-provided borehole water and tanks, the level and frequency of supply varies greatly. Most villages receive water only 3-4 times a week and for short periods of time. In many cases, residents are forced to queue for hours to collect water. This places a disproportionate burden on women.
- The quality of drinking water is poor in all field surveys. Most households reported that the water they received was salty and unfit for drinking without treatment. The lack of proper filtration or purification facilities has led to frequent health problems, especially gastrointestinal problems, such as diarrhea, abdominal pain, and skin diseases. A worrying 80 percent of respondents to this survey reported having contracted a waterborne disease at least once in the past six months.
- The fact that households using rainwater harvesting systems report fewer health complaints and higher satisfaction, such systems are underused. Only 40% of the households surveyed had installed rainwater harvesting structures. This indicates that more awareness support is needed to adopt sustainable practices.

- Governance and institutional support are sorely lacking. All participants expressed dissatisfaction with local government administration. Panchayat Raj institutions, which were supposed to ensure decentralized planning and administration, were often inactive or unresponsive. Many residents said their concerns about water quality and infrastructure were ignored by elected representatives. In many cases, no action was taken despite suspicions of corruption and financial irregularities.
- Traditional water sources such as wells and ponds are dilapidated and often dry or polluted. With modern pipes reaching only a few households, and public pipes serving large groups, the pressure on the existing infrastructure is high. Lack of proper maintenance and sanitation further worsens the situation.
- There is a clear link between environmental sustainability and water availability. Over-abstraction of groundwater, neglect of rainwater harvesting, and pollution of surface water all lead to environmental degradation, which reduces the availability of drinking water. This cyclical relationship between environmental neglect and water insecurity is particularly evident in water-scarce areas like Dindigul.

CONCLUSION

This study has revealed a stark but profound picture of the water situation in rural Dindigul. The combination of water scarcity, quality, dilapidated infrastructure and weak governance constitutes a serious and persistent obstacle to ensuring equitable and sustainable water availability. In such contexts, environmental sustainability and human health are deeply intertwined. Degradation of local water resources, whether

through pollution, overuse, or neglect, has serious consequences for both individual well-being and ecological resilience.

To break this cycle, multi-pronged approaches are needed. Priority should be given to promoting rainwater harvesting through subsidies, awareness campaigns and technical training. Infrastructure should be improved to ensure equitable distribution of water through pipes and tanks, and for household filtration systems for drinking water.

Urgent reform is needed in local governance through strengthening panchayat accountability and participatory planning. Regular water quality monitoring, supported by digital monitoring and public grievance redressal mechanisms, should be made mandatory.

Furthermore, the study emphasizes the importance of integrating environmental education and community participation into rural development frameworks. Ensuring water sustainability is not just a technical or administrative task, but a socio-ecological imperative. Policy focus, supported by public will and local-level innovation will be a key factor in achieving the goal of “Water for Every Household” and securing the right to safe drinking water for every rural household.

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