



BRILL

PERSPECTIVES ON GLOBAL DEVELOPMENT
AND TECHNOLOGY 22 (2023) 149–170

PERSPECTIVES
ON
GLOBAL
DEVELOPMENT
AND
TECHNOLOGY
brill.com/pgdt

Commemorating 50 Years of Publication of *Small Is Beautiful* by E. F. Schumacher: Adding Women to “Small = Beautiful”

Roli Varma | ORCID: 0000-0002-4084-0448

Carl Hatch Endowed Professor, School of Public Administration,
University of New Mexico, Albuquerque, NM, USA
varma@unm.edu

Received 6 August 2023 | Accepted 29 January 2024 |

Published online 12 April 2024

Abstract

Fifty years ago, Schumacher in his celebrated book, *Small Is Beautiful*, argued that the Western model of mass production, which relies on high-cost, capital-intensive, and labor-saving technology, was not suitable for developing countries to improve their economic conditions and living standards. Instead, Schumacher proposed an alternative path of development that emphasized low-cost, small-scale, and labor-intensive technology. Considering persistent unemployment in developing countries, Schumacher's model of alternative development remains relevant for the vast majority of their people. However, he failed to include women in his model and held traditional views on gender roles. His understanding of the economic role of women did not align with the women's movements, which sought equal access to education and employment. By using a case study of India, this article argues that it is often poor women who are the “agents” of *Small Is Beautiful*. Through low-cost small businesses, they are uplifting themselves and their families out of poverty and contributing to society's well-being.

Keywords

alternative development – appropriate technology – decolonial feminism – eco-feminism – intermediate technology – microfinancing

1 Introduction

Ernst Friedrich Schumacher's (1973) book *Small Is Beautiful: Economics as if People Mattered* – ranked among the 100 most influential books published since WWII by *The Times Literary Supplement* in 1995 – was well-received in many developing countries worldwide for its alternative approach to economic development and modernization. In the early 1960s, India's first prime minister, Jawaharlal Nehru, invited Schumacher to assess the country's resources, including its material, capital, and human resources. Schumacher recommended “intermediate technology” for India's economic development, which was welcomed by the government. Mahatma Gandhi, considered the father of modern India and known for his non-violent resistance against British colonial rule, advocated for technology appropriate to the basic needs of people (Bakker 1990). Many middle-class Indian activists holding employment as scientists, engineers, technologists, policy analysts, journalists, and teachers also promoted appropriate technology for the country's development (Varma 2001). For followers of Gandhi and appropriate technology activists, Schumacher's ideas became a countercultural phenomenon that challenged the prevailing Western model of industrialization and modernization in India.

Since India's independence in 1947, there is hardly any disagreement that Schumacher's ideas have not significantly influenced the government's approach to utilizing land, energy, and other resources, developing technologies, launching industries, and establishing corresponding institutions. His ideas conflicted with Nehru's vision of building a modern, industrialized Indian economy. Nehru (1985) believed that India had to catch up with the scientific and technological advances made in the West to avoid remaining weak and vulnerable to foreign domination. He sought to address production and distribution problems by planning the economy under a democratic socialist ideology while retaining parliamentary processes to ensure individual freedom. India focused on heavy investment in industries producing basic and heavy goods to achieve national self-reliance. Before 1990, India exercised strict control over its economic development through licenses and regulations, which were abolished by the liberalization reforms of 1991 (Adhia 2015). Since then, India has implemented policies to provide a favorable business environment for both national and multinational corporations.

In the last three decades, India has undergone economic reforms that are widely considered transformative by mainstream organizations. According to the Cato Institute, India used to be a poor, slow-growing country; however, it now has the world's third-largest gross domestic product (GDP) in terms of purchasing power parity (Aiyar 2016). The World Bank (2023) views

India as a rising economic powerhouse with an average annual GDP growth of six percent to seven percent since the turn of the twenty-first century. The International Monetary Fund (2023) predicts that India will be the world's fastest-growing economy in 2023. It is proposed that India has made significant progress in transitioning from an agrarian economy to a manufacturing and service-based economy. The service sector now accounts for over 55 percent of GDP, while the industrial and agricultural sectors make up 26 percent and 18 percent, respectively.

Despite India's significant economic growth, 60 percent of its 1.4 billion people live on less than \$3 a day. According to economic historian Ashoka Mody (2023), India's economy is fundamentally broken. It has failed to generate enough jobs to meet labor demand and has not provided adequate healthcare and education to its population. After 75 years of independence from Britain, the reality is that there are "two Indias." The Indian economy has polarized into a highly productive, modern, and globally integrated formal sector, employing about ten percent of the labor force, and a low-productivity sector consisting of agriculture and urban informal activities, engaging 90 percent of the labor force (Adhia 2015:22). Socially, India has a small upper stratum and a large lower stratum of people, with the top ten percent of the population holding 77 percent of the total national wealth. Notably, approximately 42 percent of India's workforce is employed in agriculture, 32 percent in services, and 25 percent in industry (Majid 2019). These factors indicate that Schumacher's model of alternative development based on intermediate technology remains relevant for a vast majority of Indians, especially those at the bottom in urban areas and living in rural India.

Yet, Schumacher's (1973) model of alternative development had some limitations. He failed to include women in his model and held traditional views on gender roles. Although Schumacher acknowledged the work of multiple women, his theory was only directed towards men. According to him, "Women, on the whole, do not need an 'outside' job, and the large-scale employment of women in offices or factories would be considered a sign of serious economic failure" (p. 53). His concept of men's role in the workplace perpetuates gender norms by encouraging men to adhere to dominant ideals of masculinity, while expecting women to conform to subordinate roles. Such ideals and behaviors are socially constructed and have been identified as hegemonic masculinities (Connell 2005). They promote traits such as domination, aggression, competitiveness, and the exertion of control over women within a patriarchal social order prevalent in a society.

This article examines the "women question" within Schumacher's theory of alternative development in contemporary India. It discusses how Schumacher's

theory is being realized by low-income women in India. Increasingly, women have been involved in small-scale work, including home-based businesses. Through microfinance and low-cost small businesses, they are uplifting themselves and their families out of poverty, while simultaneously benefiting society at large. The article proposes that women in India are the “agents” of *Small Is Beautiful*. Additionally, it suggests the inclusion of a theory of women empowerment within Schumacher’s theory of alternative development for developing countries.

The examination of the women’s question in the Indian context necessitates a comprehensive analysis of power within the social and structural framework. Rather than perceiving power solely as an individual attribute or possession, this approach recognizes it as an intricate network of relationships, hierarchies, and systems intricately woven into India’s social fabric. It further acknowledges that power is not distributed evenly, but is influenced by various factors, including class, caste, gender, religion, and ethnicity. It takes the impact of historical legacies, colonialism, and post-colonial developments on power dynamics into account.

Issues related to gender contributes to the social-structural understanding of power in India. Gender-based power imbalances shape the distribution and exercise of power within Indian society. Traditional societal norms dictate that women’s primary roles are that of wives and mothers, perpetuating the stereotype that their place is solely within the confines of their homes. India’s social system has been described as “patrifocal” (Mukhopadhyay 1994). Under this system, women are subordinated within the family structure; inheritance follows the patrilineal line; residency is typically patrilocal; gender-based distinctions exist in family roles; marriages are often controlled by the family; and women are expected to adhere to the values of chastity, domesticity, and obedience.

Decolonial and eco-feminist theories have emerged as a critique of patriarchal structures and development in developing countries, focusing on the perspectives of marginalized groups. Decolonial feminist perspective aims to deconstruct power hierarchies, challenge dominant knowledge systems, and address the intersecting oppressions faced by women (Lugones 2010). It actively questions and challenges the prevailing narratives and practices within the Western feminist movement. It critiques Western feminist theories that claim to represent the voices of subaltern women – those who are socially, politically, and culturally marginalized and oppressed by dominant power structures – but ultimately overshadow their lived experiences (Spivak 1988). Decolonial feminist theory asserts that Western feminism fails to consider

the unique socio-cultural, political, and historical contexts in which women from different regions navigate their lives. It emphasizes the necessity for a contextual and nuanced feminist analysis that considers the specific experiences and challenges faced by women from the Global South (Mohanty 2003). Moreover, it argues against generalizations that create a singular, homogenous “third-world” identity (Narayan 1997). This perspective holds that women from developing countries will not achieve liberation through speech within existing systems of power, as doing so would require adopting the language and terms imposed by dominant groups, thereby reinforcing their subjugation rather than challenging it. Eco-feminism draws upon the basic premise of decolonial feminism, while incorporating principles from both environmentalism and feminism. This approach emphasizes the interconnectedness between the exploitation of women and the degradation of the environment (Shiva 1988). According to eco-feminism, the dominant global economic system, which is characterized by capitalist and patriarchal structures, is accountable for perpetuating social and ecological injustices. It argues that women and nature are frequently marginalized and exploited within this system, and that the fights for gender equality and environmental sustainability are deeply intertwined.

2 Schumacher on Alternative Development

In the global economic distribution of nations, the United Nations has classified Western countries as developed, while most countries in Africa, Asia, and Latin America are categorized as developing. This classification is primarily based on economic indicators such as GDP, gross national product (GNP), per capita income, level of industrialization, standard of living, technological infrastructure, and overall economic maturity. Developing countries generally have a lower standard of living, a weaker industrial base, inadequate infrastructure, and a low Human Development Index, which is a scale that measures a country’s economic and human potential. Therefore, it is not surprising that developing countries often look to industrialized nations for solutions to their economic and social challenges. After attaining independence from foreign domination after World War II, many developing countries implemented developmental policies aimed at emulating the industrialization strategies of Western countries (Drucker 1959; Rostow 1960). While the specifics of these policies differed among developing countries, the underlying approach typically involved the introduction of Western industries and technologies with

the hope that they would stimulate economic growth and, thus, social development. However, the effectiveness of this approach has been a subject of debate among scholars.

Schumacher raised concerns about developing countries imitating Western economies on two grounds. Firstly, he objected to the Western industrial production model, which relies heavily on non-renewable sources of energy. Since these energy sources are finite, they cannot be replaced once depleted, leading to the eventual exhaustion of the world's energy reserves. Additionally, Western industrial production involves the reckless exploitation of natural resources, contributing to the ongoing environmental crisis. While the substitution of fossil fuels with nuclear energy can address the issue of scarcity, it also creates significant environmental and ecological problems on an unprecedented scale. Accordingly, Schumacher (1973) declared, "One of the most fateful errors of our age is the belief that the problem of production has been solved. This illusion ... is mainly due to our inability to recognize that the modern industrial system, with all its intellectual sophistication, consumes the very basis on which it has been erected" (p. 19).

Secondly, Schumacher questioned the applicability of Western economies to developing countries. He argued that the West has created large industries by utilizing advanced technology in capital-rich but labor-scarce societies, whereas developing countries have abundant labor but scarce capital, making it challenging for them to establish similar industries. Consequently, these industries make only a small contribution to employment in developing countries. Schumacher pointed out that developing countries have adopted different production methods in their traditional and advanced sectors in an attempt to imitate the West. He believed that the benefits of the modern sector's growth have not diminished development issues, but instead deepened the divide between the small industrial sector and the large rural areas. According to him, "The successful industrial development in the cities destroys the economic structure of the hinterland, and the hinterland takes its revenge by mass migration into the cities" (p. 158). He maintained that the Western idea of "trickle-down" economics was failing to generate adequate employment opportunities for impoverished people in rural areas. Schumacher shared Gandhi's philosophy that Western-style industrialization would lead to the displacement of a large number of rural laborers in developing countries without providing adequate employment opportunities.

In place of Western-style industrialization, Schumacher championed the idea that "small is beautiful." He argued that developing countries would face fewer severe problems if they employed labor-intensive techniques of

production that could absorb the unemployed and underemployed members of the labor force. He viewed appropriate technology as a solution to multiple economic and social issues. According to him, the characteristics of appropriate technology included being small-scale, inexpensive, ecologically sound, requiring minimal energy input, having a low pollution rate, being non-violent to nature, decentralized, simple, labor-intensive, compatible with human needs, and allowing for the reversible use of materials.

It could be argued that one reason developing countries lag in terms of technological development is due to their reliance on indigenous technology for production. Such technology shares many features with what Schumacher proposed, namely the use of “labor-intensive” technology, the creation of “small-scale” establishments, and the reliance on “local” materials. However, he did not believe that indigenous technology alone would be sufficient to improve rural economic conditions. Instead, he proposed “intermediate technology,” which he saw as more productive than indigenous technology and less expensive than advanced Western technology. Schumacher believed that intermediate technology could promote the gradual development of developing countries while still meeting the needs of ordinary people. He identified intermediate technology as a “£100-technology” (p. 169). He established a comparison between the cost of equipment per workplace, labeling the technology used in developing countries as a “£1-technology,” and the technology employed in Western countries as a “£1000-technology.” He believed that the use of £1-technology caused developing countries to stagnate, while £1000-technology from the West led to the destruction of indigenous social and economic structures, leaving poor people worse off than before.

Schumacher emphasized the importance of critically examining technology’s role in society. He recognized that technological development is not a neutral process but is intertwined with social dynamics. In an industrial society, the dominant technology often reinforces authoritarian and hierarchical structures. However, Schumacher envisioned the possibility of a different kind of technology, one that is grounded in non-authoritarian and non-hierarchical relationships. He advocated for “a technology with a human face” (p. 138). This concept implies the need for technology that prioritizes human well-being, fosters equality, and respects human dignity. By questioning the prevailing technological paradigm, Schumacher invited society to engage in a broader discussion about the purpose and consequences of technological advancement. He encouraged considering alternative approaches that prioritize human values, social justice, and sustainability. Schumacher’s perspective on technology diverges from the prevalent belief that technology is neutral,

operating independently and without any predetermined bias, intention, or value system. Schumacher held that technology is not neutral, but rather carries inherent social and political biases.

Schumacher's assertion that appropriate technology could serve as the economic foundation of developing countries, like India, deserves scrutiny (Varma 2003). Firstly, Schumacher proposed a technological fix to mitigate the negative impact of Western-style industrialization and modernization in developing countries, without adequately addressing underlying political, economic, or social causes. By advocating for technological solutions to address social problems, Schumacher implicitly suggested that implementing necessary reforms take a backseat. Furthermore, emphasizing technological fixes without addressing underlying social, economic, and political issues can lead to unintended consequences and unequal distribution of benefits. Secondly, although Schumacher was critical of the use of modern technology in developing countries, he did not condemn the role played by multinational corporations (MNCs) in technology transfer. Instead, he advocated for the West to transfer intermediate technology. This inadvertently resulted in promoting technological dependence of developing countries on the West. Furthermore, it provided a theoretical justification for the transfer of secondhand and outmoded technologies by MNCs to those countries. Finally, developing countries have often been depicted by the West as backward, traditional, and lacking scientific and technical advancements, leading to a condescending attitude. As a result, there is a strong desire to rapidly industrialize and modernize. People in developing countries are eager to experience the advancements and benefits that the West has enjoyed for a significant period. Suggesting that they should not aspire to have sophisticated technical products or that developing countries should not strive to emulate industrialized nations is merely an ethnocentric viewpoint. There is no valid reason why modern industries, advanced technologies, and scientific knowledge should exclusively be concentrated in the West, and they should be distributed fairly.

Despite some limitations, Schumacher's theory of alternative development based on intermediate technology remains highly relevant in today's developing countries. This relevance stems from persistent issues such as mass unemployment, rural-to-urban migration, and the emigration of both skilled and unskilled labor from developing to developed countries. Only a small percentage of the population resides in a handful of large urban centers in developing countries that receive significant developmental attention, while the vast majority lives in rural areas and small towns that often miss out on such progress. Schumacher's assertion that the impoverished populations of developing countries cannot be effectively aided through Western-style industrialization

and modernization continues to hold true. There is a pressing need for alternative development strategies tailored to the specific circumstances of developing countries. While high-technology solutions may be impressive, they often fail to address the needs of the poor and prove unrealistic in terms of cost. Developing countries are likely to benefit from exploring production methods supported by appropriate technology that align with their economic and social conditions.

In the mid-1960s, Schumacher co-founded the Intermediate Technology Development Group (ITDG), which established partnerships with other like-minded organizations championing labor-intensive innovations on a small scale in various developing countries. ITDG made significant progress in India, where the Gandhian tradition had already laid the groundwork for the emergence of the appropriate technology movement.

In the early 1970s, the Ministry of Industry in India established a cell for appropriate technology. This initiative was followed by the establishment of several research centers for appropriate technology in leading technical institutes across India, funded by the central government. These centers initiated work on technologies appropriate to rural India, particularly in the areas of energy efficiency, environmental conservation, waste management, and hand-operated machines. Such efforts led to the upscaling of various technologies aimed at promoting sustainability and addressing key environmental challenges. These initiatives included the development and widespread adoption of heat-efficient and smoke-reducing stoves, solar rice cookers, water control devices, sanitation systems, alternatives to chemicals in agriculture, indigenous seed conservation, and biogas production for energy generation. Khadria and Mishra (2022) noted “AMUL” (a brand of milk products) as one of the most celebrated examples of appropriate technology, on which a full-length national award-winning Hindi feature film called “Manthan” (the churning) was made in 1976.

Such technological initiatives in India are in line with Schumacher’s concept of intermediate technology as they exhibit higher productivity than traditional methods while remaining more affordable than Western technology. Moreover, they effectively cater to the needs of underprivileged individuals, which aligns with Schumacher’s primary development goals. Since the late 1990s, however, the appropriate technology efforts have experienced a decline, primarily attributed to the Indian government’s focus on globalization and the removal of restrictions on the influx of foreign technologies. This change in focus reflects a broader strategy aimed at integrating India into the global economy and leveraging its potential as a competitive player in the international market. Consequently, the appropriate technology efforts appear to

have lost momentum, largely due to the prevalence of neoliberal ideologies. They are considered as a temporary solution until India achieve full industrialization and modernization.

3 Indian Women Shaping Schumacher's Vision

In the essay on Buddhist economics in *Small Is Beautiful*, Schumacher outlined the three functions of work: providing individuals with an opportunity to develop their abilities, encouraging them to transcend ego-centeredness through collaboration, and producing the goods and services necessary for a fulfilling existence. However, it is worth noting that Schumacher did not adequately consider the legitimate need for women to have fulfilling work alongside their parenting responsibilities. While Schumacher is widely regarded as a forward-thinking philosopher, his approach to women's issues lacked progressiveness. By failing to incorporate women into his vision of alternative development in developing countries, Schumacher reinforced gender hierarchies and the subjugation of women. His approach upheld and reinforced the prevailing form of masculinity that is culturally idealized and considered the norm within society. There is a need to challenge his philosophical outlook that favored men and rectify the issue of male dominance. Only then can we create a more inclusive and egalitarian society.

In India, women have transcended traditional boundaries and actively participated in various movements as a response to social, cultural, and economic challenges. The historical record demonstrates that women have spontaneously joined mass actions in significant numbers (Kumar 2002). Through their participation in these movements, women have not only raised awareness about their concerns, but also exerted influence on policy changes. Furthermore, such movements have empowered women to assert their rights and claim spaces in diverse areas of life, contributing to their overall empowerment and societal progress.

For example, women protested against dam construction that led to the displacement of numerous local communities. In 1979, the government approved the Sardar Sarovar Project, which aimed to construct 30 large dams and over 3000 medium and small dams along a stretch of over 1300 kilometers of the Narmada River, spanning across three states. The primary rationale was to provide irrigation and drinking water and produce electrical power. However, this project resulted in the submergence of homes, villages, cultivable lands, and forests, causing significant environmental disruption. Officially, it has displaced over 250,000 people (Mallick 2021). The government did not provide

suitable alternative land for those displaced by the dams. Consequently, strong opposition to dam development emerged, led by the Narmada Bachao Andolan (Narmada Save Movement). In 1993, the movement successfully compelled the World Bank to withdraw its financial support from the project, followed by the withdrawal of foreign investors.

Similarly, the issue of deforestation had become a prominent concern specifically for rural women, affecting them in a disproportionate manner due to the social division of labor within families. The consequences of deforestation had forced rural women to travel longer distances and dedicate more hours to collecting fuel, fodder, and water (Mishra and Mishra 2012). As a result, their availability for wage labor had diminished, leading to an extended working day. Undoubtedly, these circumstances had significant negative impacts on their health. In response to the plans of contractors to fell the trees, women mobilized in the forests, singing and embracing the trees as a means of safeguarding them from destruction. This movement became known as the Chipko (Hug Tree) movement (Mallick 2021). The idea of embracing a tree by women as a means of protection had a profound impact nationally and internationally.

Schumacher's critique of the Western model of industrialization for developing countries did not anticipate the differential impacts it would have on men and women, nor did it foresee the subsequent protests by women. Decolonial and eco-feminist perspectives have emerged precisely because they challenge and reject Western-centric models of development, acknowledging their tendency to disregard the specific needs and perspectives of women. These frameworks draw attention to the detrimental consequences of globalization, neo-colonialism, and capitalist systems on women in postcolonial contexts. They emphasize the importance of addressing gender inequalities and promoting more inclusive and sustainable development, aspects that Schumacher overlooked in his analysis. For instance, eco-feminism recognizes the interconnectedness between the exploitation of nature and the subjugation of women. Using the case of the Chipko movement, Vandana Shiva (1988) has asserted that women engage with the environment in a spiritual, nurturing, and intuitive manner. Consequently, the domination and oppression of women have coincided with the domination and degradation of the environment. This intimate relationship equips women with unique ways of perceiving the world that challenge the prevailing patriarchal worldview.

However, some claims made by eco-feminism are problematic, particularly when they dichotomize women as inherently caring and nurturing in contrast to men. It is important to recognize that gender roles and associations with nature vary across cultures and are not universal. Even in the case of India, the close association between women and natural resources is often observed

among marginalized women in rural areas, while women from more privileged backgrounds may not share the same level of environmental consciousness. Moreover, there is a risk in essentializing women's nature as determined by biology. Historically, such biological determinism has been used to justify the exploitation of women and promote the superiority of certain races based on perceived biological traits. This kind of essentialism is similar to the claims made by Lawrence Summers, the former president of Harvard University, whose speech on January 14, 2005, suggested that the scarcity of women in certain disciplines could be attributed to innate differences in mathematical ability (Hemel 2005).

As pointed out earlier, Schumacher envisioned women working solely at home. However, the traditional view that women's place is primarily within the home does not accurately reflect the reality of women's participation in various spheres of life in India. Since India's independence, there have been significant changes and advancements in terms of women's education and their participation in the workforce. These developments have provided increasing opportunities for women to pursue education and explore various fields. According to data from 2021–22, India's Labor Force Participation Rate (LFPR) indicates the percentage of individuals above 15 years of age who are part of the labor force, was 77.2 percent for males and 32.8 percent for females (Deol 2023). This data highlights that there is still a significant gender disparity in labor force participation, with women having a lower representation. This gap indicates the need for further progress to enhance women's financial independence and expand their scope of opportunities in the workforce.

Early on Indian women's movements recognized that access to money was a significant barrier to women's economic empowerment. In the 1970s, the Self Employed Women's Association (SEWA) established credit programs to organize informal sector female workers, enhance women's income, and address broader gender issues by fostering solidarity among women. Since the 1980s, microfinance has emerged as a powerful force for women's empowerment in India (Mayoux 2000). Microfinance refers to the provision of financial services, such as small loans, savings, and insurance, to individuals who lack access to traditional banking services (Khurshed et al. 2021). It has played a significant role in enabling women to access credit and savings facilities, which, in turn, has empowered them to start or expand small businesses, invest in education, improve housing conditions, and fulfill other essential needs. Microfinance institutions recognize that women are more likely to invest their resources in the well-being of their families and communities and are better at repaying their loans than men (D'Espallier et al. 2011). This not only benefits individual women, but also contributes to broader poverty reduction and community development efforts.

Microfinance has played a significant role in fostering entrepreneurship among women (Goyal and Parkash 2011). It provides women with the necessary capital to invest in equipment, inventory, raw materials, and other essential resources required for their enterprises. Often, microfinance programs provide business training and skill development to women. Through these programs, women gain insights into financial literacy, business planning, marketing strategies, bookkeeping, and other crucial aspects of entrepreneurship. Many microfinance initiatives also adopt a group lending model, where women come together to form self-help groups. These groups not only provide financial support but also create a sense of community and solidarity among women entrepreneurs (Davidson and Sanyal 2017). Sahu (2014) found that women who belonged to self-help groups were more financially secure and more involved in household decisions than women who did not participate.

The impact of microfinance extends beyond economic empowerment. As women become financially independent and successful entrepreneurs, they experience a boost in confidence and improve their social status (Kar 2018). Their achievements challenge traditional gender norms and stereotypes, paving the way for greater gender equality in their families and communities. With increased decision-making power, women can actively contribute to important choices and shape the direction of their households and communities. Although microfinance programs face multiple challenges (Guerin and Kumar 2016; Kar 2018; Taylor 2011), it is essential to recognize that these obstacles do not undermine the transformative potential they hold for impoverished women.

While it is true that Schumacher did not address women's issues in his vision of alternative development, his overall views on human development and sustainable economics offer a broader perspective on the role of women in developing countries. Schumacher emphasized the significance of human-scale development, which prioritized the well-being of individuals and communities over mere economic growth. He advocated for a holistic approach to development, taking into account social, cultural, and environmental factors. Indeed, the promotion of localism and community empowerment was a fundamental aspect of Schumacher's notion of alternative development. He promoted decentralized economic systems that prioritize local resources, skills, and knowledge. This approach aimed to give communities greater control over their own development and foster inclusivity and participation. Within this context, Schumacher's conception can uphold the significant role that women can play as agents of change within their local communities.

Schumacher's framework would recognize the invaluable role that women in India are playing in sustainable development with micro-finance initiatives. Women are contributing to sustainable development in multiple areas.

As primary caregivers and providers of food, water, and energy within households, women know the importance of sustainable resource use. They are often involved in activities such as water harvesting, forest conservation, and sustainable agriculture. Through self-help groups, women have successfully implemented eco-friendly practices, protected biodiversity, and promoted sustainable livelihoods. Women have embraced renewable energy technologies such as solar panels, biogas plants, and improved cookstoves. These technologies not only reduce reliance on fossil fuels, but also enhance energy access, improve indoor air quality, and reduce carbon emissions. Women-led enterprises in the renewable energy sector have emerged, providing clean energy solutions and creating employment opportunities.

Similar to Schumacher, decolonial and eco-feminist theories raise questions about the imposition of a one-size-fits-all approach often observed in Western-centric models of development. Unlike Schumacher, however, these theories offer a critical perspective on patriarchal norms and practices that perpetuate gender inequalities and marginalize women. Most importantly, decolonial and eco-feminist perspectives engage in a critique of Western feminism, highlighting its tendency to make universal claims that may not be applicable or relevant in non-Western contexts. This critique stems from the recognition that Western feminism frequently fails to acknowledge the diverse experiences and struggles of women in different cultural, social, and historical settings. By challenging the assumption of a single, homogenous feminist framework, decolonial and eco-feminist theories encourage a more nuanced understanding of gender issues and the importance of context-sensitive approaches to address them.

In the case of India, the country has experienced significant influence from Western ideologies, a legacy stemming from the era of British colonialism, and continuing with the post-colonial capitalist development. During both periods, the Indian knowledge system has been disparaged as archaic, while the Western viewpoint has been upheld as the modern and superior form of comprehension. The establishment of colonial hierarchies further reinforced this notion by classifying colonizers as human and relegating Indian people to an inferior status. Likewise, Western feminism has been molded within the framework of modernity, presenting tradition as a contrasting force to progress. Anchored in the concept of liberal modernity as the primary avenue for women's liberation, Western feminism has labeled alternative approaches, particularly those associated with Indian culture, as traditional. In contrast, decolonial feminism draws upon the knowledge forged by female scholars, intellectuals, and activists. Similarly, eco-feminism advocates the vital role of

women as stewards of the environment and their traditional knowledge in sustainable agriculture and resource management.

However, it is important to note that in their critique of Western feminism, decolonial and eco-feminism sometimes overlook the internal gender hierarchies within marginalized communities. By primarily focusing on colonial oppression, they end up neglecting the ways in which patriarchal structures exist and persist within these communities, thereby reinforcing gender inequality. It is crucial to consider this point, as addressing gender inequality requires an intersectional approach that recognizes the complexities of power dynamics within and across different social groups.

For instance, the caste system has played a significant role in shaping power relations in India. Traditionally, the upper castes have held social, economic, and political power, while lower castes and marginalized communities have endured discrimination and faced limited access to resources and opportunities (Srinivas 1995). Studies show that caste influences social mobility, economic opportunities, resource accessibility, political representation, and everyday social interactions (Gupta 2000). In a study of a village, André Béteille (2012) found that economic factors, such as land ownership, occupation, and resource access intersected with caste to create distinct class divisions. Furthermore, caste impacts individual identities, social cohesion, and perpetuates social inequalities. The intersectionality between gender and caste is an important aspect that is often missing from decolonial and eco-feminism. While Schumacher's work addressed poor people in India, it did not explicitly explore the specific dynamics of caste either.

Schumacher advocated for the importance of technical changes in improving living conditions, reducing poverty, and fostering overall development in underprivileged communities. He believed that implementing intermediate technologies was crucial and considered them superior to indigenous technologies. The core of his argument was rooted in the potential of appropriate and context-specific technological solutions to address the specific needs of marginalized communities. Schumacher's concept of intermediate technologies recognized the importance of considering factors such as the use of local production resources, environmental impacts, social relationships associated with production, and the characteristics of the products themselves. While it is true that intermediate technologies may not always result in immediate productivity, they can sometimes remain dormant for extended periods. Nonetheless, Schumacher argued that even small-scale technical changes would have a significant impact, especially when implemented within the ongoing developmental efforts aimed at uplifting underprivileged communities.

In contrast to Schumacher, decolonial and eco-feminism perspectives prioritize the value and relevance of indigenous knowledge systems, cultural practices, and decision-making processes in development initiatives for women. They illustrate how the dominance and cultural imposition of the colonizers disrupted traditional belief systems, cultural practices, and the self-perception of the colonized. They suggest that the colonizers' propagated notions of superiority infiltrated the consciousness of the colonized, leading to self-depreciation, internalized oppression, and a loss of self-esteem. They emphasize the need to address the specific needs and experiences of indigenous women within development initiatives while considering the broader social, economic, and political contexts in which they reside. They place emphasis on integrating indigenous knowledge, ecological sustainability, and gender equality in development initiatives. Both theories acknowledge the significance of indigenous self-determination and sovereignty in determining their own development paths.

While decolonial and eco-feminist perspectives advocate for the recognition and promotion of indigenous knowledge, it is crucial to consider the practical outcomes and impacts of such efforts, particularly in improving the status of women in India in the long run. Highlighting the need to recognize different knowledge systems, particularly those from colonized and indigenous communities, is not sufficient on its own to bring about concrete changes in the conditions of women. In fact, microfinance is seen as a form of structured colonization and gendered oppression (Quinless and Adu-Febiri 2019).

The preservation and promotion of traditional Indian systems as an alternative to Western science and technology in development pose additional challenges. It is indeed crucial to acknowledge that not all aspects of traditional India are desirable, particularly when they perpetuate discrimination, inequality, and harm. While it is important to appreciate and preserve certain cultural practices, it is equally necessary to critically examine and challenge those that have negative consequences. Ashish Nandy (1988), a postcolonial scholar, attempted to contextualize 'sati' (widows burning themselves alive on the funeral pyres of their husbands) within a framework of cultural relativism, which seeks to understand cultural practices in their own cultural contexts. However, in doing so, he downplayed the severity and oppressive nature of the practice towards women. The condemnation and abolition of sati, along with other progressive social changes in India such as the eradication of untouchability, the rejection of endogamy, banning of child marriage, and the condemnation of harmful practices like witchcraft and quack medicine highlight the importance of questioning and challenging traditional practices that perpetuate discrimination and harm. Furthermore, in traditional India

women had limited property rights and educational opportunities. Gender-based violence including dowry-related abuse continue to prevail in India.

Most importantly, the promotion of indigenous knowledge has indeed led to exploration and examination of the connections between Hindu religion and ancient Indian science and technology. Through the promotion of indigenous knowledge, efforts have been made to explore and interpret ancient texts, uncovering scientific principles, mathematical concepts, astronomical observations, and engineering techniques that were prevalent in ancient India. However, it is important to approach these explorations with a critical lens. While there are undoubtedly remarkable contributions to science and technology from ancient India (Dharmpal 2000), it is crucial to distinguish between mythological narratives and verifiable historical facts. Careful examination, scholarly analysis, and evidence-based research are necessary to separate factual scientific knowledge from symbolic or metaphorical interpretations within religious texts.

For instance, India's Prime Minister Narendra Modi's government has been actively involved in efforts to establish a Hindu nation-state. As part of this agenda, they have raised questions about the Western-centric approach to science education and attempted to replace it with assertions that highlight the virtues of ancient "Hindu science" (Kaushik 2020). For example, Modi suggested that the elephantine head of the Hindu god Ganesh is evidence of plastic surgery being performed 2,000 years ago in India. Additionally, a new engineering textbook has been introduced that endorses the idea of pre-twentieth-century Indian aircraft, along with claims that ancient India possessed knowledge of batteries and electricity. In 2014, a separate Ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy) was established, independent of the Ministry of Health, with a focus on alternative medicine. The Modi government has sponsored academic and industry research into bovine products and introduced bovine engineering into curricula. They have also appointed individuals with questionable scientific credentials to prominent academic and administrative positions (Kumar 2019). It should be pointed out that the promotion of such pseudoscientific claims by the government poses a threat to scientific progress, development, and education as they discourage critical thinking and have the potential to impede India's aspirations to integrate into the global economy, which they themselves would like to accomplish.

Decolonial and eco-feminism perspectives recognize the historical role of colonialism in imposing dominant religious systems on Indian communities and suppressing their indigenous and spiritual practices. They advocate for the recognition and revitalization of Indian spiritual traditions, allowing Indian people to practice and express their beliefs freely. They need to figure out how

to decide which practices of Indian traditions ought to be discarded and which ones should be preserved. Most importantly, decolonial and eco-feminism perspectives share certain aspects with Hindu nationalism, which is on the rise in India. Proponents of Hindu nationalism argue that it functions as a means of cultural resistance against colonial influences and Western feminism. But, Hindu nationalism also relies on traditional gender roles that prescribe specific expectations for women, such as caretaking responsibilities within the household, the preservation of cultural and religious practices, and the upholding of family honor. This emphasis on prescribed roles limits women's autonomy and restrict their opportunities for personal and professional growth outside of these assigned roles.

Schumacher also proposed a return to religious truth and emphasized the importance of religion in shaping individuals' values and ethics, as well as the overall well-being of developing countries. He argued that the pursuit of material wealth alone could not bring true fulfillment; instead, developing countries needed to address the spiritual dimension of human existence. He advocated for integrating a spiritual and moral foundation alongside economic and technological advancements. His ideas primarily revolved around economics, social development, and the role of religion in shaping values and ethics. While emphasizing the significance of religion and spirituality in addressing developmental challenges, there is no evidence to suggest that he advocated for pseudoscientific beliefs or practices.

4 Conclusion

Schumacher's economic philosophy centered around human-scale development, sustainable economics, localism, and community empowerment for developing countries. While he did not extensively address women's issues, his perspectives indirectly support the notion of gender equality and women's empowerment. By emphasizing the importance of small scale and local participation, as well as respect for nature, Schumacher's ideas lay the groundwork for supporting the vital developmental role that women in India are playing. By using a case study of marginalized women in India, this article has expanded upon Schumacher's concepts of alternative development. It has shown that the active involvement of women is an essential component of achieving a sustainable and just economic system where both people and the planet truly matter. Schumacher and decolonial and eco-feminism perspectives converge in their criticism of the adoption of Western-centered development and modernization. Unlike Schumacher, decolonial and eco-feminism perspectives

primarily focus on women. However, decolonial and eco-feminism tend to romanticize an idealized past, making it unclear how they would effectively improve the status of women in India. In traditional India, women were subject to various forms of oppression and discrimination, which were deeply rooted in patriarchal norms, religious beliefs, and social customs that prevailed in different regions and communities.

In contrast to decolonial and eco-feminism, Schumacher's perspective, although it does not explicitly incorporate women, offers practical strategies and policies to empower women and help them achieve developmental goals.

Acknowledgements

This is a revised version of the paper presented at the "Workshop on 50 Years of E. F. Schumacher's Small Is Beautiful," Oxford, UK, June 9, 2023. This research was partially supported by the National Science Foundation (Grant 1937849).

References

- Adhia, Nimish. 2015. "The History of Economic Development in India since Independence." *Education About ASIA* 20(1):18–22.
- Aiyar, Swaminathan S. A. 2016. "Twenty-five Years of Indian Economic Reform." Policy Analysis CATO Institute, October 16. Retrieved August 29, 2023. (Cato.org/sites/cato.org/files/pubs/pdf/pa803.pdf).
- Bakker, J. I. 1990. "The Gandhian approach to swadeshi or appropriate technology: A conceptualization in terms of basic needs and equity." *Journal of Agricultural Ethics* 3:50–88. (<https://doi.org/10.1007/BF02014480>).
- Béteille, André. 2012. *Caste, Class, and Power: Changing Patterns of Stratification in a Tanjore Village*. Oxford: Oxford University Press.
- Connell, Raewyn W. 2005. *Masculinities*. California: University of California Press.
- D'Espallier, Bert, Isabelle Guerin, and Roy Mersland. 2011. "Women and Repayment in Microfinance: A Global Analysis." *World Development* 39:758–772. (<https://doi.org/10.1016/j.worlddev.2010.10.008>).
- Davidson, Thomas and Paromita Sanyal. 2017. "Associational Participation and Network Expansion: Microcredit Self-help Groups and Poor Women's Social Ties in Rural India." *Social Forces* 95(4):1695–1724.
- Deol, Taran. 2023. "Women and Men in India 2022: Sex ratio improves but female participation in workforce still low." DownToEarth, March 17. Retrieved August 29,

2023. (<https://www.downtoearth.org.in/news/health/women-and-men-in-india-2022-sex-ratio-improves-but-female-participation-in-workforce-still-low-88300>).
- Dharmal. 2000. *Indian Science and Technology in the Eighteenth Century: Some Contemporary European Accounts*. Goa: Other India Press.
- Drucker, Peter. 1959. *The Landmarks of Tomorrow*. New York: Harper & Harper.
- Goyal, Meenu and Jai Parkash. 2011. "Women Entrepreneurship in India: Problems and Prospects." *International Journal of Multidisciplinary Research* 1(5):195–207.
- Guerin, Isabelle and Santosh Kumar. 2016. "Market, Freedom and the Illusions of Micro credit: Patronage, Caste, Class and Patriarchy in Rural South India." *Journal of Development Studies* 53(5):741–754. (<https://doi.org/10.1080/00220388.2016.1205735>).
- Gupta, Dipankar. 2000. *Interrogating Caste: Understanding Hierarchy and Difference in Indian Society*. New Delhi: Penguin India.
- Hemel, Daniel J. 2005. "Summers' Comments on Women and Science Draw Ire." *Crimson*, January 14. (<https://www.thecrimson.com/article/2005/1/14/summers-comments-on-women-and-science/>).
- International Monetary Fund. 2023. *World Economic Outlook: Navigating World Divergences*. Washington D.C.: Author. October 23, Retrieved August 29, 2023. (file:///Users/rolivarma/Downloads/text%20(1).pdf).
- Kar, Sohini. 2018. *Financializing Poverty: Labor and Risk in Indian Microfinance*. Stanford: Stanford University Press.
- Kaushik, Pitamber. 2020. "Modi's War on Science." *Counter Currents*, January 7. Retrieved August 29, 2023. (<https://countercurrents.org/2020/07/modis-war-on-science/>).
- Khadria, Binod and Ratnam Mishra. 2022. "Technological Transformation in India: The Debate between Appropriate and Frontier Technologies." Pp. 71–85 in *Handbook of Innovation & Appropriate Technologies for International Development*. Edited by Philippe Regnier, Daniel Frey, Samuel Pierre, Koshy Varghese, and Pascal Wild. United Kingdom: Edward Elgar Publishing.
- Khursheed, Ambreen, Ather Azim Khan, and Faisal Mustafa. 2021. "Women's Social Empowerment and Microfinance: A Brief Review of Literature." *Journal of International Women's Studies* 22(5):249–265.
- Kumar, Radha. 2002. *History of Doing: An Illustrated Account of Movements for Women's Rights and Feminism in India, 1800–1990*. Delhi: Kali for Women.
- Kumar, Sanjay. 2019. "In India, Hindu Pride Boosts Pseudoscience." *Science* 363(6428): 679–680.
- Lugones, Maria. 2010. "Toward a Decolonial Feminism." *Hypatia* 25(4):742–759. (<https://doi.org/10.1111/j.1527-2001.2010.01137.x>).
- Majid, Nomaan. 2019. "Structural Change and Employment in India." International Labour Organization, Working Paper No. 1. Retrieved August 29, 2023. (<https://>

- www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_735166.pdf).
- Mallick, Krishna. 2021. *Environmental Movements of India: Chipko, Narmada Bachao Andolan, Navdanya*. Amsterdam: Amsterdam University Press.
- Mayoux, Linda. 2000. "Micro-finance and the empowerment of women: A review of the key issues." International Labour Organization. Retrieved August 29, 2023. (https://www.ilo.org/wcmsp5/groups/public/@ed_emp/documents/publication/wcms_117993.pdf).
- Mishra, Aparimita and Deepak K. Mishra. 2012. "Deforestation and Women's Work Burden in the Eastern Himalayas, India: Insights from a Field Survey." *Gender, Technology and Development* 16(3): 299–328. (<https://doi.org/10.1177/0971852412459428>).
- Mody, Ashoka. 2023. *India Is Broken: A People Betrayed, Independence to Today*. Stanford: Stanford University Press.
- Mohanty, Chandra T. 2003. *Feminism without Borders: Decolonizing Theory, Practicing Solidarity*. Durham: Duke University Press.
- Mukhopadhyay, Carol C. 1994. *Women, Education and Family Structure in India*. New York: Routledge.
- Nandy, Ashish. 1988. "The Human Factor." *The Illustrated Weekly of India*, January 17, pp. 20–23.
- Narayan, Uma. 1997. *Dislocating Cultures: Identities, Traditions, and Third World Feminism*. New York: Routledge.
- Nehru, Jawaharlal. 1985. *Discovery of India*. Oxford: Oxford University Press.
- Quinless, Jacqueline M. and Francis Adu-Febiri. 2019. "Decolonizing microfinance: An Indigenous feminist approach to transform macro-debit into micro-credit." *International Sociology* 34(6):739–761. (<https://doi.org/10.1177/0268580919865103>).
- Rostow, Walt W. 1960. *The Stages of Economic Growth: A Non-Communist Manifesto*. Cambridge: Cambridge University Press.
- Sahu, Gagan B. 2014. "How Effective Is a Self-Help Group Led Microfinance Programme in Empowering Women? Evidence from Rural India." *Journal of Asian and African Studies* 50(5):542–558. (<https://doi.org/10.1177/0021909614548239>).
- Schumacher, Ernest F. 1973. *Small Is Beautiful: Economics as if People Mattered*. New York: Harper & Row.
- Shiva, Vandana. 1988. *Staying Alive: Women, Ecology, and Development*. New York: Zed Books.
- Spivak, Gayatri C. 1988. "Can the Subaltern Speak?" *Die Philosophin* 14(27):42–58. (<https://doi.org/10.5840/philosophin200314275>).
- Srinivas, Mysore N. 1995. *Social Change in Modern India*. Hyderabad: Orient Blackswan.
- Taylor, Marcus. 2011. "Freedom from Poverty is not for Free': Rural Development and the Microfinance Crisis in Andhra Pradesh, India." *Journal of Agrarian Change* 11(4):484–504. (<https://doi.org/10.1111/j.1471-0366.2011.00330.x>).

- Varma, Roli. 2001. "People's Science Movements and Science Wars?" *Economic and Political Weekly* 36(52):4796–4802.
- Varma, Roli. 2003. "E. F. Schumacher: Changing the Paradigm of Bigger Is Better." *Bulletin of Science, Technology & Society* 23(2):114–124. (<https://doi.org/10.1177/0270467603251313>).
- World Bank. 2023. "India Development Update." Washington D. C.: World Bank Group, April 4. Retrieved August 29, 2023. (<http://documents.worldbank.org/curated/en/099926004032338633/IDU05899cc410fae104e1708fed09a0345ca6f6c>).