

## **Impact Analysis of Free Milk Program on Increasing Human Capital Indeks In Indonesia: Literature Study With Comparison Of Implementation In India**

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### **Abstract**

*Improving the quality of human resources (HR) is a critical element of Indonesia's long-term development agenda. The Human Capital Index (HCI) is used as a key measure of a nation's HR capacity, encompassing health, education, and workforce skills. A higher HCI signifies a stronger potential for economic growth and social development. One of the essential factors in boosting HCI is children's nutrition, as it directly influences their physical and cognitive development. Programs like free school milk distribution, which have been implemented in various countries such as Indonesia and India, aim to enhance children's nutritional status, thereby improving their learning outcomes, long-term health, and future productivity. This study examines the impact of Indonesia's free milk program on improving HCI by conducting a comprehensive literature review. It also compares the implementation and effectiveness of similar programs in India to identify best practices. The study highlights several challenges faced by Indonesia, including limited infrastructure, funding constraints, and insufficient public awareness, all of which hinder the program's success. In contrast, India's successful milk distribution programs, supported by strong government policies, public-private partnerships, and extensive community engagement, provide valuable lessons for Indonesia. The research suggests that by adopting India's strategies, such as improving distribution networks, increasing funding, and enhancing public education on nutrition, Indonesia could significantly strengthen its free milk program. The findings offer policymakers practical recommendations to improve child nutrition and, consequently, Indonesia's HCI, leading to stronger economic growth and social progress in the future.*

**Keywords:** *Human Capital Index, child nutrition, free milk program*

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## **INTRODUCTION**

The improvement of human resources (HR) quality is one of the main priorities in Indonesia's development agenda. A key indicator used to measure the quality of a country's human resources is the Human Capital Index (HCI), which includes components such as health, education, and workforce skills. A high HCI signifies that a country has a qualified workforce capable of significantly contributing to economic growth and social development, particularly in supporting the productivity of future generations (Media Indonesia, 2020). Despite Indonesia's efforts to improve its HCI, the country still faces challenges in addressing malnutrition and its impact on cognitive development, which is crucial for ensuring a competitive workforce in the future.

One critical factor that underpins human resource development is children's nutrition, as it forms the foundation for their physical and cognitive growth. Malnutrition in childhood can lead to long-term adverse effects on educational attainment, workforce productivity, and economic development. According to UNICEF (2021), Indonesia continues to face a double burden of malnutrition, with issues of undernutrition and obesity existing simultaneously. Inadequate nutrition during childhood affects cognitive abilities and hinders a child's ability to learn effectively, limiting their potential to contribute meaningfully to society and the economy.

To address these challenges, various countries have implemented programs aimed at improving children's nutritional status, with one notable initiative being the free milk program

in schools. Such programs are designed to ensure children receive adequate nutrition, thereby enhancing their learning abilities, long-term health, and future productivity. Studies have demonstrated that school-based nutrition programs not only improve attendance and academic performance but also contribute to better overall health outcomes

India's GiftMilk program is an exemplary case of a successful school milk initiative. This program, supported by both public and private sectors through Corporate Social Responsibility (CSR) initiatives, ensures the distribution of milk to schools while leveraging technology for transparency and accountability. A web-based platform is used to monitor real-time distribution, ensuring efficient resource utilization and minimizing discrepancies. The positive outcomes of the GiftMilk program were acknowledged by the State Government of Jharkhand, which subsequently adopted it as a state policy (International Dairy Federation, 2023). This demonstrates how integrating technology and multi-stakeholder collaboration can enhance the effectiveness of nutritional programs.

In Indonesia, similar programs have been implemented on a smaller scale, but their impact and sustainability remain limited. For instance, initiatives to provide supplementary nutrition to school children have faced challenges such as logistical constraints, inconsistent funding, and inadequate monitoring mechanisms (Sekiyama et al., 2018). Learning from the successes and challenges of other countries, such as India, can provide valuable insights for improving the design and implementation of Indonesia's school-based nutrition programs.

This study aims to analyze the impact of the free milk program on improving Indonesia's HCI through a comprehensive literature review. Additionally, the study will compare the implementation of similar programs in India to evaluate their successes and challenges and identify best practices that can be adapted to the Indonesian context. The results of this research are expected to provide concrete recommendations for policymakers in developing effective nutritional programs to enhance the quality of Indonesia's human resources in the future.

## **RESEARCH METHODS**

This study employs a descriptive qualitative approach, aiming to provide a comprehensive overview of the effectiveness of free milk distribution programs in improving human resource quality through enhanced child nutrition. The selection of a qualitative approach is rooted in its capacity to provide an in-depth understanding of complex social phenomena, as noted by (Maxwell, 2016) who emphasizes that qualitative research is particularly suitable for exploring processes, perspectives, and contextual factors.

The data utilized in this research are derived from secondary sources, including scholarly articles, official government reports, reputable websites, and other relevant publications. These sources were chosen to ensure a comprehensive and credible foundation for analysis. According to (Merriam, 2009), secondary data allow researchers to contextualize their findings within existing knowledge, thereby enhancing the validity of qualitative inquiries.

A comparative literature review methodology is applied to evaluate the implementation of free milk distribution programs in Indonesia and India. This method involves systematically comparing policies, supporting infrastructure, private sector involvement, and community participation in both countries. (Chigbu et al., 2023) underscores that comparative literature reviews are effective for identifying patterns, gaps, and best practices across different contexts, making them highly applicable for this study's objectives. Moreover, the inclusion of India as a comparative case is based on its successful implementation of the GiftMilk program, which provides valuable lessons for Indonesia.

The data are analyzed using content analysis, which aims to extract key themes relevant to the research topic from the existing literature. These findings are then compared to assess the effectiveness of free milk programs in improving the Human Capital Index, particularly in terms of child nutrition, in both countries. The results of this study are expected to provide evidence-based policy recommendations to enhance the implementation of nutrition programs in Indonesia.

To further enrich the analysis, this research also investigates the challenges and obstacles faced during the implementation of these programs. Challenges such as logistical constraints, funding issues, and accountability mechanisms are explored to understand the barriers to effective program delivery. These insights aim to identify best practices that can be adapted to enhance Indonesia's own nutritional initiatives.

## **RESULT AND DISCUSSION**

### **Challenges in Improving Indonesia's Human Capital Indeks**

According to the World Bank report, in 2018, Indonesia ranked 87th out of 157 countries with a Human Capital Index (HCI) score of 0.53. This indicates that a child born in Indonesia is expected to achieve 53% of their productivity potential if they receive optimal education and healthcare (Kementerian Perindustrian, 2023). To improve HCI, one of the measures taken is through nutrition enhancement programs.

According to (Haratua et al., 2023), Indonesia has a high stunting rate. WHO data shows that Indonesia ranks third in Southeast Asia for stunting prevalence. This presents a major challenge for the government in managing human resources to remain productive and competitive in the era of the Fourth Industrial Revolution.

Nutrition is a key factor influencing a child's brain development. Research conducted by indicates that the coverage of exclusive breastfeeding in Indonesia has not yet reached the target of 80%. The lack of public awareness to provide exclusive breastfeeding for newborns up to six months of age results in lower cognitive/IQ development and increases the risk of stunting by 1.3 times (Ulaa et al., 2020). Health issues like these have a significant impact on a country's HCI level (Sanda et al., 2022).

Although Indonesia's HCI has improved in recent years, the country still faces significant challenges, particularly related to child health and nutrition. Some of the key issues hampering Indonesia's HCI include:

1) **Regional Nutritional Disparities:**

While urban centers in Indonesia show improving health and nutrition indicators, rural and remote areas continue to face high rates of stunting and wasting in children under five. The 2018 Basic Health Research (Riskesdas) data reported a national stunting prevalence of 30.8%, with the highest rates in provinces such as East Nusa Tenggara, far above the national average of 20% (Asriani et al., 2022). These disparities are driven by uneven access to healthcare services, nutrition programs, and education, all crucial components of human capital development.

2) **Limited Access to Nutritional Support:**

Despite the commendable efforts of Indonesia's Free Milk Program, it struggles to reach the most vulnerable populations due to infrastructural limitations. Rural communities often lack consistent access to quality nutrition, including milk, which is essential for children's growth and cognitive development.

3) **Program Design and Implementation Gaps:**

The Free Milk Program in Indonesia faces structural challenges, including insufficient funding, poor coordination among government agencies, and a lack of public awareness. These issues create significant gaps in program coverage, especially in remote areas where milk distribution is challenging.

4) Weak Public Health Infrastructure:

Indonesia's public health infrastructure, particularly in rural areas, remains underdeveloped. The distribution of milk and other essential nutrition services is hindered by poor roads, a lack of cold storage facilities, and insufficient healthcare personnel. This reduces the effectiveness of the Free Milk Program and limits its potential to contribute to improving Indonesia's HCI.

### **Free Milk Distribution in India: Implementation, Policies, and Distribution**

India provides an instructive case study in the successful implementation of milk distribution programs. Under the Midday Meal Scheme, many Indian states have integrated milk distribution into their daily school meal programs. States like Gujarat and Karnataka have demonstrated how government-supported milk distribution, in collaboration with dairy cooperatives such as Amul, can achieve broad coverage and ensure sustained nutrition for schoolchildren (Hoque, 2023):

1) Government Policy and Institutional Support:

India's success in milk distribution stems from robust governmental policies designed to combat child malnutrition and support education. The National Programme of Nutritional Support to Primary Education, commonly known as the Midday Meal Scheme, targets millions of children, providing both nutrition and education support (Andhra Pradesh, n.d.). The addition of milk to this program in many states has improved nutrition outcomes significantly, particularly in terms of addressing protein and calcium deficiencies.

2) Public-Private Partnerships:

One of the unique strengths of India's milk distribution programs is the involvement of dairy cooperatives, such as Amul (Kaur, 2011). These cooperatives work with the government to ensure a steady and reliable supply of milk. The collaboration between public bodies and private dairy companies has enabled a robust distribution network that reaches even remote areas.

3) Wide Distribution Network:

India's dairy sector, especially in Gujarat, operates a vast network of cooperative societies and dairy farms, with systems like the Gujarat Cooperative Milk Marketing Federation (GCMMF) and Banaskantha's Banas Dairy playing critical roles in ensuring extensive milk distribution across both rural and urban areas (Chaudhari et al., 2021). This extensive infrastructure ensures that nutritional programs are effective and sustainable.

4) Incorporating Nutrition Education:

Alongside the provision of milk, India has also introduced educational initiatives to promote the importance of nutrition. These programs aim to raise awareness among children and their families about the long-term benefits of a balanced diet, further enhancing the overall impact of the milk distribution initiative (Misra et al., 2024).

India's holistic approach, which integrates government support, private sector involvement, and community engagement, has resulted in a more comprehensive and effective nutrition program that addresses child malnutrition and supports human capital development.

### **Challenges of Implementing the Free Milk Program in Indonesia**

In contrast to India, Indonesia has faced significant challenges in rolling out its Free Milk Program. Some of the most pressing obstacles include:

1) Funding Constraints:

One of the primary challenges for Indonesia's Free Milk Program is its limited financial resources. While India's program benefits from stable government funding and contributions from the private sector, Indonesia's program struggles to secure adequate financing, leading to irregular distribution and limited coverage.

2) **Infrastructure Deficits:**

Indonesia's vast geography and underdeveloped transportation and healthcare infrastructure make it difficult to ensure the consistent delivery of milk to remote areas. The lack of infrastructure is a significant barrier to effective program implementation. Indonesia's underdeveloped infrastructure, especially in transportation, poses major challenges for delivering services and goods, including in remote areas (Ray & Ing, 2016).

3) **Insufficient Dairy Industry Development:**

Unlike India, which benefits from a mature dairy industry, Indonesia's dairy sector is relatively underdeveloped. This limits the availability of locally produced milk, forcing the government to rely on imports or donations, which complicates program logistics and sustainability. Indonesia's dairy sector produces only 30% of its national demand, requiring reliance on imports, particularly from Australia and New Zealand, complicating sustainability (Acharya et al., 2020).

4) **Public Awareness and Cultural Barriers:**

There is a lack of widespread awareness about the importance of milk and proper nutrition in Indonesia. Many communities, particularly in rural areas, are unaware of the benefits of the Free Milk Program. Cultural preferences for other forms of food and drink also affect the uptake of the program. Awareness of milk quality among smallholder dairy farmers is low, with many unaware of key milk quality parameters. Cooperatives play a crucial role in improving this awareness (Fadillah et al., 2023).

5) **Limited Coverage and Access:**

The Free Milk Program in Indonesia has not yet been scaled to cover the entire country. While it has been successful in some urban areas, it has yet to reach many of the most vulnerable populations in rural and impoverished regions

## CONCLUSION

Indonesia faces significant challenges in improving its Human Capital Index (HCI), particularly with regards to child health and nutrition. High stunting rates, low coverage of exclusive breastfeeding, and uneven access to healthcare and nutrition programs have all hindered progress. According to data, rural and remote areas suffer from higher rates of stunting, contributing to substantial regional disparities. Additionally, the lack of infrastructure, such as inadequate healthcare facilities and poor logistics, exacerbates the difficulty in reaching vulnerable populations. Public awareness of the importance of proper nutrition remains insufficient, particularly in rural communities, which limits the effectiveness of existing government programs like the Free Milk Program. Despite efforts by the government to tackle these issues, such as various nutrition programs, the impact remains limited due to the systemic challenges outlined.

To overcome these obstacles, several strategic actions are required. First, the government should invest in strengthening healthcare infrastructure, particularly in rural and remote regions, to improve access to essential services and nutritional support. Building facilities for milk distribution, improving transportation networks, and ensuring the provision of cold storage facilities would help address current logistical barriers. Additionally, public-private partnerships,

similar to those in India's successful milk distribution programs, should be fostered to ensure the availability and sustainable supply of milk, especially in underserved areas.

Another crucial step is to increase public awareness about nutrition, emphasizing the importance of exclusive breastfeeding and proper child nutrition for cognitive development. Education campaigns should be tailored to local needs, with a focus on the long-term benefits of healthy nutrition practices. Furthermore, the government must increase funding for nutrition-related programs and create incentives for the development of a robust local dairy industry, reducing reliance on imports and enhancing sustainability. Regular monitoring and evaluation of these programs will be vital to measure their success and make necessary adjustments.

By implementing these changes, Indonesia can make significant strides in improving its HCI, reducing stunting rates, and developing a more competitive and productive workforce for the challenges of the Fourth Industrial Revolution.

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