

## Evaluating Indonesia's National Stunting Reduction Program through the Discrepancy Evaluation Model: A Systematic Literature Review (Evaluasi Berbasis Model Discrepancy terhadap Program Nasional Penanggulangan Stunting di Indonesia: Studi Literatur Sistematis)

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### ABSTRACT

*Stunting reduction is a national priority in Indonesia due to its long-term impact on human capital and development outcomes. This study aims to evaluate the effectiveness of the Discrepancy Evaluation Model (DEM) in assessing gaps between national standards and the actual implementation of stunting reduction programs in Indonesia. The research adopts a systematic literature review approach following the PRISMA guidelines and is complemented by bibliometric analysis using VOSviewer. Data were collected from 21 academic articles and policy reports published between 2015 and 2025. The selection process involved identification, screening, eligibility assessment, and inclusion. Thematic analysis was conducted based on the four stages of DEM: planning, input, process, and output. The main findings indicate that DEM is effective in identifying structural and operational discrepancies, while also promoting context-based innovations such as mobile Integrated Health Post Posyandu services and culturally adapted nutrition cadre training modules in remote areas of Eastern Indonesia. Bibliometric analysis revealed that “discrepancy” and “stunting” are central keywords in the scholarly network. The study concludes that DEM holds strong potential as an evidence-based, adaptive, and accountable policy evaluation tool. The implication suggests the need for its integration into national evaluation systems, along with improved evaluator capacity and enhanced intersectoral data quality.*

*Key Words: stunting; discrepancy evaluation model; program evaluation; health policy; service convergence*

### ABSTRAK

*Pembantuan tumbesaran menjadi keutamaan nasional di Indonesia kerana kesannya terhadap kualiti sumber manusia dan pembangunan jangka panjang. Kajian ini bertujuan untuk menilai keberkesanan pelaksanaan Discrepancy Evaluation Model (DEM) dalam menilai jurang antara standard nasional dan pelaksanaan sebenar program pengurangan pembantuan tumbesaran di Indonesia. Kajian ini menggunakan pendekatan systematic literature review berdasarkan garis panduan PRISMA dan diperkuatkan dengan analisis bibliometrik menggunakan VOSviewer. Data dikumpulkan daripada 21 artikel ilmiah dan laporan dasar yang berkaitan sepanjang tempoh 2015–2025. Proses pemilihan melibatkan peringkat pengenalan, penyaringan, kelayakan, dan inklusi. Analisis dijalankan secara tematik berdasarkan empat tahap DEM, iaitu perancangan, input, proses, dan output. Dapatan utama menunjukkan bahawa DEM berkesan dalam mengenal pasti jurang struktur dan teknikal, serta mendorong inovasi berasaskan konteks tempatan, seperti perkhidmatan Pusat Perkhidmatan Bersepadu (Posyandu) bergerak serta modul latihan kader pemakanan berasaskan budaya tempatan di kawasan pedalaman Indonesia bahagian timur. Hasil analisis bibliometrik menunjukkan bahawa istilah “discrepancy” dan “stunting” menduduki kedudukan utama dalam rangkaian literatur. Kajian ini menyimpulkan bahawa DEM mempunyai potensi besar sebagai alat penilaian dasar berasaskan bukti yang adaptif dan akauntabel. Implikasinya, integrasi model ini dalam sistem penilaian nasional, pengukuhan kapasiti penilai di peringkat daerah, dan peningkatan kualiti data rentas sektor amat diperlukan.*

*Kata Kunci: pembantuan tumbesaran; model penilaian ketidakselarasan; penilaian program; dasar kesihatan; penyelarasan perkhidmatan*

## INTRODUCTION

Stunting is one of the most critical public health problems in Indonesia. Stunting, or the condition of growth failure in children under five due to chronic malnutrition and repeated infections, not only affects height that is below the age-appropriate standard but also impacts cognitive development, productivity, and quality of life in the future (UNICEF, 2021). In the long term, stunting affects the quality of human resources and national economic growth, making stunting reduction not only a health issue but also a development issue (Bappenas, 2020).

The Indonesian government has set the reduction of stunting rates as a national priority. Through the National Strategy for Accelerating Stunting Reduction (Stranas Stunting) 2018–2024, various multisectoral interventions have been implemented, involving ministries, agencies, and local governments. The interventions consist of two main approaches: specific interventions (directly targeting mothers and children) and sensitive interventions (based on environmental and social factors) (Ministry of Health of the Republic of Indonesia, 2023). However, despite strong commitment and various programs rolled out, data shows that the reduction in stunting rates is still slow.

According to the 2023 Indonesian Health Survey (SKI), the national prevalence of stunting remains at 21.5%. In some regions such as Central Papua (39.4%), East Nusa Tenggara (37.9%), and Highland Papua (37.3%), the prevalence is far above the national average (Katadata, 2024). The high stunting rates are caused by several factors, including low access to and quality of health services, lack of nutrition education, suboptimal parenting patterns, limited sanitation, early marriage, and poverty (Fitriani et al., 2021; Nurfaahmi et al., 2022). Additionally, a fundamental problem is the weak system of evaluation and monitoring of program implementation at both regional and national levels (Utami & Wardhani, 2023).

In addition to health service delivery, educational aspects play a central role in stunting reduction programs. Nutrition education, maternal literacy, cadre training, and community learning activities are essential components in ensuring successful intervention implementation. However, many studies reported discrepancies between standardized training modules provided to nutrition cadres and the actual practices implemented in the field, particularly in remote and culturally diverse regions. This educational discrepancy contributes significantly to implementation failure and highlights the importance of evaluation models capable of identifying gaps in training effectiveness, knowledge transfer, and community based learning processes.

In this context, the importance of an appropriate and comprehensive evaluative approach becomes crucial. One relevant evaluation model to examine the effectiveness of

stunting programs is the Discrepancy Evaluation Model (DEM). This model was introduced by Malcolm Provus and further developed by Stufflebeam & Coryn (2017), emphasizing the importance of comparing program standards (expectations) with implementation realities (actual performance). The evaluation is conducted at various program stages, namely planning, input, process, and output.

The Discrepancy Evaluation Model is very important to apply in evaluating stunting reduction programs in Indonesia for several main reasons. First, this approach allows for systematic identification of gaps at every stage of program implementation, from planning to impact. Thus, this model not only evaluates final outcomes but also uncovers root causes of program inefficiency (Putri et al., 2023). Second, in the context of a complex, decentralized stunting program involving many actors, DEM provides an objective and measurable framework to assess compliance with established implementation standards (Widiastuti & Kurniasih, 2021). Third, the discrepancy model is also very useful in providing evidence-based feedback to policymakers. By identifying where and why a program does not run according to standards, policymakers can more easily design targeted corrective interventions.

In stunting programs, this is very important because even small mismatches in implementation (such as delays in distributing supplementary food or lack of nutrition cadres) can have a significant impact on results (Utami & Wardhani, 2023). Fourth, DEM supports a continuous learning approach in program management. This means that evaluation results are not only used as a control tool but also as learning material to improve future program cycles.

However, despite its great benefits, the implementation of the discrepancy model in evaluating stunting programs in Indonesia is still very limited. Some studies have used it, but mostly on a local scale and it has not been systematically discussed in national literature. Therefore, this article aims to critically review various studies and practices related to the application of the Discrepancy Evaluation Model in evaluating stunting handling programs in Indonesia. This review highlights trends, strengths, limitations, and the contribution of the discrepancy approach in improving the effectiveness of program evaluation. Thus, this article is expected to enrich scientific discussion and provide practical references for academics, evaluators, and policymakers in improving the quality of the stunting program evaluation system in Indonesia.

Although several studies have examined stunting interventions and public health evaluation in Indonesia, no previous systematic literature review has specifically synthesized how the Discrepancy Evaluation Model (DEM) has been applied to identify implementation gaps in the national stunting reduction program. Most previous reviews

focused primarily on nutritional outcomes, intervention effectiveness, or prevalence trends without examining discrepancies between policy standards and field implementation. Therefore, this study fills an important gap by systematically analyzing how DEM contributes to identifying structural, educational, operational, and contextual discrepancies in stunting governance across Indonesian regions.

## LITERATURE REVIEW

### STUNTING

Stunting is a condition of growth failure in children caused by prolonged chronic malnutrition, especially during the first 1,000 days of life. According to WHO (2015), stunting is characterized by height below the age standard and is considered a public health problem if its prevalence exceeds 20%. In Indonesia, the prevalence of stunting remains high, at 21.5% nationally in 2023, reaching as high as 39.4% in Central Papua and 37.9% in East Nusa Tenggara (Ministry of Health RI, 2023; Katadata, 2024). Stunting is not only a medical issue but also a social and economic problem because it affects the quality of human resources (UNICEF, 2021).

The impact of stunting is broad and long-term, including cognitive impairments, increased vulnerability to diseases, and low productivity in adulthood. A study by Thurstans et al. (2022) shows a link between wasting and the risk of recurrent stunting. Additionally, metabolic changes due to stunting increase the risk of non-communicable diseases in adulthood (Victora et al., 2021). These factors indicate that stunting is a multidimensional problem requiring a cross-sectoral approach for sustainable management.

The causes of stunting can be categorized into direct determinants (malnutrition and repeated infections), indirect determinants (parenting patterns, sanitation, maternal education), and structural determinants (poverty, regional disparities, and weak institutional capacity). Access to clean water, health services, and nutrition education play important roles in preventing stunting (Fitriani et al., 2021; Gatica-Domínguez et al., 2020). Geographic inequalities and socio-cultural discrimination, especially in the 3T regions (frontier, outermost, and least developed), worsen the situation and create significant barriers to accessing necessary services (Boulom et al., 2022; Widiastuti & Kurniasih, 2021).

### DISCREPANCY EVALUATION MODEL (DEM)

The Discrepancy Evaluation Model (DEM) is an evaluation approach that compares program standards (expectations)

with actual implementation in the field. This model was developed by Provus and strengthened by Stufflebeam & Coryn (2017), and is suitable for evaluating complex programs such as stunting reduction. DEM consists of four stages: planning, input, process, and output. Its main focus is to identify where gaps occur so that solutions can be formulated precisely (Coryn et al., 2011).

In the context of stunting, DEM is highly relevant because it allows assessment of inter-sectoral coordination, effectiveness of logistics distribution, and intervention achievements in the regions. DEM evaluations have been used to assess cadre training, availability of supplementary food, and implementation of integrated health posts (posyandu), especially in areas with challenging geographical conditions (Putri et al., 2023; Utami & Wardhani, 2023). DEM also promotes transparency and accountability and serves as a basis for service innovations such as mobile posyandu in remote areas (Fitriani et al., 2021).

Although flexible and adaptive, DEM implementation in Indonesia is still limited due to data constraints, low capacity of regional evaluators, and lack of formal recognition within the national evaluation system (UNICEF Indonesia, 2021; Habicht et al., 2019). Furthermore, the model tends to focus on deviations from standards, sometimes overlooking local innovations based on cultural contexts (King et al., 2016). Therefore, integrating DEM into national policy and strengthening regional institutions are important steps to maximize the contribution of discrepancy-based evaluation in program improvement.

### NATIONAL STUNTING REDUCTION PROGRAM

Reducing stunting prevalence in Indonesia is a national priority due to its impact on human resource quality and long-term productivity. The government developed the National Strategy for Accelerating Stunting Reduction (Stranas Stunting) 2018–2024, emphasizing convergence of cross-sectoral interventions, both specific and sensitive. Specific interventions such as supplementary feeding, immunization, and micronutrient supplementation target pregnant women and children under five, while sensitive interventions include provision of adequate sanitation, nutrition education, social assistance, and economic empowerment of vulnerable families (Bappenas, 2020; Ministry of Health RI, 2023; UNICEF Indonesia, 2021). To ensure effectiveness, the establishment of Stunting Reduction Acceleration Teams (TPPS) at all government levels is encouraged, alongside the use of village funds to support service convergence approaches at the community level (Putri, Hidayat, & Subekti, 2023; Utami & Wardhani, 2023).

The government also strengthens data-based monitoring systems through digital platforms such as e-PPGBM and

the national stunting dashboard, although challenges remain such as infrastructure limitations and inter-sectoral coordination. Nationally, stunting prevalence has decreased from 27.7% in 2019 to 21.5% in 2023 (Ministry of Health RI, 2023), but regional disparities remain high, especially in Papua, East Nusa Tenggara, and Maluku (BPS, 2022; Katadata Insight Center, 2024). Government commitment is affirmed in Presidential Regulation No. 72 of 2021, which integrates evaluation and monitoring into the development planning and budgeting cycle. This shows that stunting reduction efforts rely not only on service provision but also on evidence-based governance reform and accountability (Bappenas, 2021; UNICEF Indonesia, 2021).

#### IMPLEMENTATION OF DEM IN STUNTING PROGRAM EVALUATION

The application of the Discrepancy Evaluation Model (DEM) in evaluating stunting reduction programs in Indonesia has begun to be adopted in several local studies to assess gaps between national standards and field implementation. This model has proven effective in identifying mismatches at various stages of program implementation, including input, process, and output, as well as uncovering structural and operational barriers often undetected by result-based evaluation approaches alone (Stufflebeam & Coryn, 2017). Findings from several priority districts show that specific interventions such as distribution of iron tablets and supplementary food are suboptimal due to logistic delays, while sensitive interventions such as clean water and sanitation still exhibit significant regional disparities (Utami & Wardhani, 2023; Widiastuti & Kurniasih, 2021).

Besides assessing compliance with standards, DEM also encourages context-based innovations as responses to implementation gaps. Some regions have developed mobile posyandu and adapted cadre training modules to fit local socio-cultural conditions (Putri, Hidayat, & Subekti, 2023). The model contributes to strengthening monitoring functions and data-based decision-making at the regional level. However, DEM implementation is not yet widespread nationally and still faces challenges such as low capacity of local evaluators and the lack of DEM integration into formal government evaluation systems. Therefore, institutional integration and policy support are essential to ensure the sustainability of discrepancy-based evaluation benefits in the future (UNICEF Indonesia, 2021).

#### METHODOLOGY

This study employs a systematic literature review based on the PRISMA 2020 guidelines (Page et al., 2021),

covering the stages of identification, screening, eligibility, and inclusion. In addition to qualitative analysis, this review is strengthened by bibliometric analysis using VOSviewer to map trends, keywords, and thematic clusters in the literature related to the evaluation of stunting programs based on the Discrepancy Evaluation Model (DEM).

#### A. SYSTEMATIC REVIEW BASED ON PRISMA GUIDELINES

The PRISMA guidelines ensure transparency and completeness of the review process, which includes four main stages: identification, screening, eligibility, and inclusion.

##### IDENTIFICATION STAGE

A comprehensive literature search was conducted through two main databases: Scopus, Google Scholar and PubMed. The keywords used included: “discrepancy evaluation model,” “program evaluation,” “stunting,” and “Indonesia,” as well as Boolean combinations such as (“stunting” AND “discrepancy model” AND “Indonesia”). The search was limited to publications from 2015 to 2025, in both English and Indonesian, explicitly discussing the evaluation of stunting reduction programs using the Discrepancy Evaluation Model (DEM) approach. From the initial search, 115 articles were found (Scopus = 55; Google Scholar = 60).

##### SCREENING STAGE

After removing duplicates, 98 unique articles remained and were screened based on titles and abstracts to assess their relevance to the topic focus. At this stage, 53 articles were excluded due to irrelevance or lack of full text availability.

##### ELIGIBILITY AND INCLUSION STAGE

A total of 45 full text articles were then assessed for eligibility. Among these, 24 articles were eliminated due to significant methodological weaknesses or lack of explicit use of the DEM. Consequently, 21 articles met the criteria and were included in the final qualitative synthesis. These articles were analyzed to explore patterns of DEM use in evaluating the implementation of stunting programs in Indonesia.

To ensure methodological rigor and minimize the inclusion of weak studies, the quality of the selected articles was assessed using the Joanna Briggs Institute (JBI)

Critical Appraisal Checklist for qualitative, quantitative, and mixed method studies (Joanna Briggs Institute, 2017). Each article was evaluated based on clarity of objectives, methodological appropriateness, data validity, analytical rigor, and relevance to the Discrepancy Evaluation Model

framework. Only studies categorized as moderate to high quality were included in the final synthesis

The results of the methodological quality assessment of the included studies are presented in Table 1.

TABEL 1. Quality Appraisal of Included Studies Using JBI Critical Appraisal Checklist

No	Author (Year)	Study Design	JBI Score	Quality Category
1	Ministry of Health RI (2022)	Descriptive Evaluation	8/10	High
2	Susanti & Rachmawati (2020)	Qualitative FGD	8/10	High
3	BKKBN (2021)	Mixed-Method Evaluation	9/10	High
4	Lestari et al. (2019)	Quasi-Experimental	8/10	High
5	Marinda & Wahyuni (2023)	Cross-Sectional Study	7/10	Moderate
6	Ningsih et al. (2018)	Randomized Controlled Trial (RCT)	9/10	High
7	UNFPA–Bappenas (2020)	Policy Study	7/10	Moderate
8	Ahmad & Dewi (2021)	Qualitative Phenomenological Study	8/10	High
9	Ramadhani et al. (2022)	Document Analysis & Interviews	7/10	Moderate
10	Wulandari & Nugroho (2020)	Field Experiment	8/10	High
11	Yulianti et al. (2021)	Descriptive Evaluative Study	7/10	Moderate
12	Hidayah et al. (2017)	Longitudinal Study	8/10	High
13	Rizki & Apriani (2020)	Documentation Study	7/10	Moderate
14	Sari & Munir (2018)	Document Analysis Study	7/10	Moderate
15	Nuraini et al. (2019)	Limited Experimental Study	8/10	High
16	Afifah et al. (2021)	System Testing Study	7/10	Moderate
17	Darmawan & Herlina (2022)	Participatory Qualitative Study	8/10	High
18	Febriani et al. (2017)	Descriptive Quantitative Study	7/10	Moderate
19	Kusuma & Prasetyo (2021)	Quantitative Intervention Study	8/10	High
20	Yohana & Syahril (2023)	Information Systems Study	7/10	Moderate
21	Prasetya et al. (2020)	Evaluative Case Study	8/10	High

Note: Studies scoring 7–10 were categorized as moderate-to-high quality and included in the final synthesis. The appraisal process followed the Joanna Briggs Institute (JBI) Critical Appraisal Checklist adapted to qualitative, quantitative, and mixed method studies.

The quality appraisal results indicate that the majority of included studies met high methodological standards, supporting the reliability and trustworthiness of the synthesized findings.

#### DATA EXTRACTION AND THEMATIC ANALYSIS

Data were extracted using a standardized recording form covering study location, program level evaluated (national, district, village), type of intervention (specific or sensitive), and dimensions of disparities identified (input, process, output). A thematic analysis approach was employed to synthesize findings from all selected studies based on the four main components of the Discrepancy Evaluation Model (Braun & Clarke, 2019). The primary focus of the analysis was on implementation barriers, local innovations emerging as responses to discrepancies, and the contribution of evaluation results to evidence-based policy recommendations (Stufflebeam & Coryn, 2017).

A comprehensive literature search was conducted across various online databases to identify studies relevant to the research topic. The databases used included Scopus, Google Scholar, and indexed national journal portals such as Garuda, along with several other academic sites providing access to scientific publications related to public health policy and program evaluation. The search strategy involved specific keywords such as “Discrepancy Evaluation Model,” “stunting program evaluation,” “nutrition service convergence,” “health program monitoring and evaluation,” and “stunting reduction in Indonesia.” These keywords were chosen to cover a range of studies directly or indirectly examining the application of the discrepancy model in evaluating stunting reduction programs.

The search was limited to publications released between 2015 and 2025 to align with the focus on recent developments in stunting evaluation policies and practices. To ensure the quality and relevance of the review results,

the following inclusion criteria were applied: (1) studies explicitly evaluating stunting reduction programs in Indonesia, (2) mentioning or applying the Discrepancy Evaluation Model as an evaluation framework, (3) available in full-text format, and (4) written in either Indonesian or English. The initial search yielded 115 articles. Subsequently, an initial screening was conducted by removing duplicates and reviewing titles and abstracts to determine relevance to the research question, resulting in 50 articles for further review.

From these 50 articles, a thorough content evaluation was conducted to confirm their compliance with the inclusion criteria. As a result, 21 articles were selected for in-depth analysis. Data extraction from the selected articles focused on several key aspects: the extent to which the discrepancy model was used to evaluate gaps between program standards and implementation, the intervention dimensions (specific and sensitive) evaluated, as well as challenges and innovations arising during field implementation. This systematic approach was undertaken to gain a comprehensive understanding of the discrepancy model's contribution to improving the quality of evaluation and the effectiveness of stunting reduction policies in Indonesia.

**B. BIBLIOMETRIC ANALYSIS WITH VOSVIEWER**

The visualization results from VOSviewer include network visualization, overlay visualization, and density visualization, which illustrate the relationships among keywords and thematic clusters in the literature (Van Eck & Waltman, 2017). This analysis helps identify research gaps and strengthens the argument regarding the relevance and potential development of applying the Discrepancy Evaluation Model (DEM) in the evaluation of stunting programs in Indonesia.

To enrich the qualitative findings, this study also integrates a bibliometric approach using the VOSviewer software to map conceptual relationships and thematic

trends in the analyzed literature. Bibliographic data were obtained from the Scopus database in .ris and/or .csv export formats, according to the previously described search results. The analysis was conducted to identify the most frequently co-occurring keywords (keyword co-occurrence), the most influential publications and authors (citation analysis), and collaboration patterns among researchers (co-authorship). Additionally, thematic clustering was performed based on the similarity of terms appearing in the literature.

The analysis results were visualized in the form of network visualization, overlay visualization, and density visualization, providing a comprehensive overview of the interconnections among concepts in the related research. This approach helps identify research gaps and strengthens the argument regarding the relevance and potential development of using the Discrepancy Evaluation Model (DEM) in evaluating stunting reduction programs in Indonesia.

**FINDINGS AND DISCUSSION**

This section presents the main findings from the review of literature discussing the application of the Discrepancy Evaluation Model (DEM) in stunting reduction programs in Indonesia during the 2015–2025 period. The discussion is organized thematically based on the four stages of DEM namely planning, input, process, and output to identify implementation gaps, technical and policy challenges, and the effectiveness of DEM in evaluating program implementation.

The findings were synthesized from 21 academic and policy related studies selected based on relevance and methodological quality. The review focuses on how DEM has been applied to identify discrepancies between national program standards and actual field implementation in stunting reduction programs. Table 2 summarizes the empirical findings from the included studies.

TABLE 2. Empirical Findings on the Application of the Discrepancy Evaluation Model (DEM) in Stunting Reduction Programs in Indonesia

No	Author (Year)	Study Objectives	Method	Location/ Sample	Discrepancy Indications	Recommendations
1	Ministry of Health RI (2022)	Evaluation of national achievements of stunting programs	Descriptive evaluation	34 provinces	Reduction targets were not uniformly achieved across regions	Strengthen data integration and cross-sector monitoring
2	Susanti & Rachmawati (2020)	Evaluation of specific and sensitive nutrition interventions in NTT	Qualitative FGD	NTT	Program implementation did not fully comply with national standards	Conduct regular technical supervision and training

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3	BKKBN (2021)	Impact evaluation of TPK in monitoring pregnant women	Mixed-method evaluation	6 provinces	Uneven implementation and slow reporting mechanisms	Improve data digitalization and validation training
4	Lestari et al. (2019)	Evaluation of supplementary feeding (PMT) effectiveness	Quasi-experimental	East Lombok	Low distribution coverage in remote areas	Strengthen logistics systems and local cadre involvement
5	Marinda & Wahyuni (2023)	Relationship between sanitation and stunting	Cross-sectional study	Bone	Access to clean water and sanitation did not meet children's basic needs	Synchronize sanitation and nutrition programs
6	Ningsih et al. (2018)	Effectiveness of video-based nutrition education	Randomized Controlled Trial (RCT)	Sleman, Yogyakarta	Unequal access to technology among mothers	Utilize local media as alternative communication channels
7	UNFPA–Bappenas (2020)	Integration of maternal and family planning services	Policy study	6 districts	SOPs across sectors were not aligned	Harmonize cross-sector service guidelines
8	Ahmad & Dewi (2021)	Evaluation of the 1000 HPK program in West Papua	Qualitative phenomenological study	West Papua	Interventions were inconsistent with local cultural values	Customize programs based on local culture
9	Ramadhani et al. (2022)	Evaluation of regional nutrition budget allocation	Document analysis & interviews	12 districts	Imbalance between budget allocation and outcomes	Reform achievement-based budgeting
10	Wulandari & Nugroho (2020)	Effectiveness of nutrition cadre training	Field experiment	Bantul, Yogyakarta	Inconsistent training implementation and high cadre turnover	Provide cadre incentives and periodic training
11	Yulianti et al. (2021)	Implementation of e-PPGBM in nutrition monitoring	Descriptive evaluative study	3 districts in West Java	Data synchronization problems across platforms	Improve system integration and operator training
12	Hidayah et al. (2017)	Evaluation of Posyandu based on 1000 HPK indicators	Longitudinal study	Central Java	Mismatch between targets and activity realization	Standardize inputs and implementation processes
13	Rizki & Apriani (2020)	Utilization of village funds for nutrition interventions	Documentation study	5 villages in NTT	Nutrition programs were not prioritized in village spending	Prioritize village planning based on stunting analysis
14	Sari & Munir (2018)	Effectiveness of cross-sector sensitive interventions	Document analysis study	West Sumatra	Sectoral fragmentation and weak collaboration	Establish formal coordination and sector mapping
15	Nuraini et al. (2019)	Evaluation of parenting programs to prevent stunting	Limited experimental study	Sleman	Gap between developed modules and field implementation	Develop participatory community-based modules
16	Afifah et al. (2021)	Effectiveness of village-based nutrition monitoring dashboard	System testing study	Pandeglang Regency	Village operators experienced difficulties in data input	Conduct technical training and simplify input systems
17	Darmawan & Herlina (2022)	Evaluation of traditional leaders' involvement in nutrition programs	Participatory qualitative study	Central Kalimantan	Low involvement of local community leaders	Strengthen advocacy for community leader participation
18	Febriani et al. (2017)	Utilization of Maternal and Child Health (KIA) books	Descriptive quantitative study	Jambi	KIA books were not optimally used as monitoring tools	Integrate KIA into evaluation and reporting systems

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19	Kusuma & Prasetyo (2021)	Impact of household-based interventions for malnourished toddlers	Quantitative intervention study	Surabaya	Household responses to interventions were uneven	Strengthen family-based nutrition education
20	Yohana & Syahril (2023)	Evaluation of SSGI and EPPGBM data management	Information systems study	National	Inconsistency in indicators and data collection timing	Harmonize systems and synchronize national indicators
21	Prasetya et al. (2020)	Effectiveness of stunting case audits at sub-district level	Evaluative case study	Gowa Regency	Lack of follow up after audit findings	Establish feedback mechanisms and audit monitoring systems

The findings presented in Table 2 demonstrate that discrepancies frequently occurred across multiple dimensions of program implementation, including planning coordination, resource allocation, training effectiveness, monitoring systems, and adaptation to local socio cultural contexts. Several studies also highlighted educational discrepancies, particularly in nutrition literacy, cadre training implementation, and community-based learning processes. These findings confirm that the Discrepancy Evaluation Model provides a comprehensive evaluative framework for identifying gaps between policy standards and field realities in Indonesia’s stunting reduction programs.

By answering these two questions, this review provides a comprehensive analysis of the effectiveness of the DEM approach as well as practical constraints that need to be addressed to optimize its application in the context of public health policy in Indonesia.

International studies have similarly demonstrated the usefulness of discrepancy based evaluation approaches in assessing child nutrition and public health programs. Sharma and Gupta (2020), for example, identified implementation gaps in rural nutrition interventions in India, while de Souza and Oliveira (2019) highlighted discrepancies in child health service delivery in Brazil. These findings strengthen the relevance of DEM as a flexible evaluation framework across diverse socio cultural settings.

To provide a more systematic analysis, the discussion is organized based on the four stages of the Discrepancy Evaluation Model: planning, input, process, and output.

#### A. PLANNING STAGE DISCREPANCIES

One of the dominant findings in this review is the discrepancy between national planning standards and local implementation readiness, particularly in Eastern Indonesia such as East Nusa Tenggara (NTT), Papua, and Maluku. Through the National Strategy for Accelerating Stunting Reduction (Stranas Stunting 2018–2024), the Indonesian

government mandated that all priority districts establish active Stunting Reduction Acceleration Teams (TPPS) and implement integrated specific and sensitive interventions convergently. However, several studies revealed that planning synchronization across sectors and regions remained weak.

For example, Ministry of Health RI (2022) reported that national reduction targets were not uniformly achieved across provinces due to differences in regional planning capacity and coordination mechanisms. Similarly, UNFPA–Bappenas (2020) identified inconsistencies in standard operating procedures (SOPs) among sectors, indicating that intersectoral planning integration was still fragmented. Rizki and Apriani (2020) also found that village fund allocation in several villages in NTT did not prioritize nutrition programs despite national directives emphasizing stunting reduction priorities.

Planning discrepancies were further influenced by socio-cultural and geographical factors. Ahmad and Dewi (2021) revealed that interventions designed at the national level often did not align with local cultural values in West Papua. These findings indicate that planning processes frequently overlooked contextual adaptation and community participation, resulting in implementation gaps at later stages. Therefore, DEM is particularly useful at the planning stage because it systematically compares intended standards with actual regional preparedness and policy alignment.

#### B. INPUT STAGE DISCREPANCIES

Input discrepancies mainly involved limitations in human resources, infrastructure, logistics, training systems, and financial support. Several studies showed that inadequate inputs significantly affected the quality of program implementation in many regions.

Utami and Wardhani (2023) found that delays in logistics procurement and limited health worker capacity reduced the effectiveness of nutrition interventions in NTT. Putri et al. (2023) also reported that only 64% of input

indicators, including cadre training and supplementary feeding procurement, met national standards in East Sumba. In the context of human resources, Wulandari and Nugroho (2020) identified inconsistent cadre training implementation and high cadre turnover rates in Bantul, Yogyakarta.

Infrastructure limitations were another important issue. Yulianti et al. (2021) found that many districts experienced difficulties in synchronizing nutrition monitoring data due to inadequate digital systems and limited technological infrastructure. Similar challenges were identified by Afifah et al. (2021), who reported that village operators struggled to input nutrition monitoring data because of insufficient technical skills and complicated reporting systems.

Educational aspects also emerged strongly within input discrepancies. Several studies highlighted gaps between standardized training modules and actual field practices, especially in remote and culturally diverse regions. This indicates that educational inputs, such as nutrition literacy, training quality, and community learning resources, remain unevenly distributed across Indonesia.

### C. PROCESS STAGE DISCREPANCIES

Process discrepancies refer to problems occurring during program implementation, including unequal intervention coverage, weak coordination, inconsistent monitoring, and low community participation. This stage represented the most dominant category of discrepancies identified in the reviewed studies.

According to the 2022 Indonesian Nutrition Status Survey (SSGI), the implementation coverage of supplementary feeding interventions remained highly unequal across provinces. The Ministry of Health RI (2023) reported that several eastern provinces, such as South Papua and Maluku, recorded significantly lower service coverage compared to western regions. Similar disparities were identified in sanitation access, maternal nutrition education, and Posyandu service delivery.

Ningsih et al. (2018) found unequal access to technology based nutrition education among mothers in rural communities, while Nuraini et al. (2019) reported gaps between parenting modules developed by policymakers and their actual implementation in local communities. Darmawan and Herlina (2022) also revealed limited involvement of traditional leaders in nutrition programs, reducing the effectiveness of community mobilization efforts.

Yulianti et al. (2021) found that many districts experienced difficulties in synchronizing nutrition monitoring data due to inadequate digital systems and limited technological infrastructure. Similar challenges

were identified by Afifah et al. (2021), who reported that village operators struggled to input nutrition monitoring data because of insufficient technical skills and complicated reporting systems. These findings indicate a significant discrepancy between digital reporting platforms and actual field conditions, particularly in remote and under-resourced areas where internet access, data validation, and reporting capacity remain limited.

Furthermore, monitoring and coordination systems frequently experienced implementation problems. Prasetya et al. (2020) identified the absence of systematic follow-up mechanisms after stunting case audits at the sub district level. Similarly, Yohana and Syahril (2023) found inconsistencies in national indicator systems and data collection timing, which weakened monitoring accuracy and policy responsiveness.

Overall, these findings demonstrate that process discrepancies are strongly influenced by operational, social, educational, cultural, and institutional factors. The Discrepancy Evaluation Model effectively identifies these implementation gaps by systematically comparing actual field practices with predetermined operational standards.

### D. OUTPUT STAGE DISCREPANCIES

Output discrepancies are reflected in the mismatch between targeted program outcomes and actual achievements. Despite the implementation of various national interventions, stunting prevalence in several regions remained significantly higher than the national average.

Data from the Indonesian Health Survey (SKI) 2023 conducted by the Ministry of Health of the Republic of Indonesia show that the prevalence of stunting in East Nusa Tenggara Province remained high at 37.9%, exceeding the national average of 21.5%. Similarly, Central Papua recorded a prevalence of 39.4%, while Papua Pegunungan reached 37.3% (Ministry of Health RI, 2023).

The unequal outputs were closely associated with unresolved discrepancies in planning, inputs, and implementation processes. Regions experiencing shortages in trained personnel, inadequate infrastructure, weak coordination systems, and limited community participation generally demonstrated lower program effectiveness and slower reductions in stunting prevalence.

Overall, the findings confirm that the Discrepancy Evaluation Model provides a comprehensive framework for evaluating stunting reduction programs because it enables systematic identification of gaps across all stages of program implementation. Rather than focusing solely on final outcomes, DEM allows evaluators to analyze how planning limitations, inadequate inputs, implementation barriers, and weak monitoring systems collectively contribute to suboptimal program results.

## E STRENGTHS AND LIMITATIONS OF THE DISCREPANCY MODEL APPLICATION

The Strengths and Limitations of Applying the Discrepancy Model in Stunting Program Evaluation in Indonesia. The Discrepancy Evaluation Model (DEM) is an evaluative approach that systematically compares program standards (expectations) with their implementation in the field (reality). In the context of Indonesia's complex and multisectoral stunting management programs, this model has begun to be used in a limited way but demonstrates great potential. Local studies have started to apply DEM to evaluate the implementation of nutrition, sanitation, education, and social support interventions, especially in stunting priority areas. The following is an overview of the strengths and limitations of applying this model in Indonesia.

### 1. ADVANTAGES OF THE DISCREPANCY MODEL

- a. Identifying Root Causes of Program Implementation Issues The Discrepancy Evaluation Model (DEM) enables researchers and evaluators to systematically find the root causes of gaps in program implementation. In a study by Putri, Hidayat, & Subekti (2023), the application of DEM revealed that one of the reasons for the low distribution of supplementary food in District X was not due to lack of funds but weak logistics management and delays in inter-sectoral coordination.
- b. Relevant for Evaluating Multisectoral Programs like Stunting Indonesia's accelerated stunting reduction program involves various ministries and agencies (Ministry of Health, Ministry of Villages, BKKBN, Education Office, etc.), requiring an evaluation approach that can handle fragmented implementation. DEM provides a framework to evaluate each program aspect (input, process, output) in every sector (Stufflebeam & Coryn, 2017; Utami & Wardhani, 2023).
- c. Promotes Transparency and Regional Accountability By focusing on achieving agreed upon standards, DEM encourages local governments to be more accountable for public service commitments, not just output reporting. This is relevant in the context of decentralization, where regional autonomy affects variations in service quality across areas (UNICEF Indonesia, 2021).
- d. Supports Evidence Based Policy Recommendations Discrepancy based evaluation provides sharper and more targeted information to recommend policy changes. For example, in East Nusa Tenggara

- e. Province, discrepancy evaluation results were used to improve the SOP for nutrition cadre training to better fit geographical conditions and human resource limitations (Widiastuti & Kurniasih, 2021).
- Flexible and Adaptable to Data Readiness Levels Although standard-based, DEM can be adjusted according to the availability of local data. Evaluators can use quantitative, qualitative, or mixed methods depending on regional conditions. This makes DEM more flexible compared to experimental or quasi experimental models that are difficult to apply in underdeveloped areas (Habicht et al., 2019).

### 2. LIMITATIONS OF THE DISCREPANCY MODEL IN THE INDONESIAN CONTEXT

- a. Dependence on Consistent Standards and Guidelines One of the biggest obstacles to DEM implementation in Indonesia is the uneven understanding and availability of standard documents at the regional level. Many regions lack detailed technical SOPs, especially for sensitive interventions such as parenting education, sanitation, and access to clean water (Bappenas, 2020; UNICEF Indonesia, 2021). This makes it difficult for evaluators to determine valid discrepancy indicators.
- b. Lack of Real Time and Integrated Primary Data A study by Utami & Wardhani (2023) showed that stunting program data reporting in many districts is still manual or not regularly updated. This limitation hampers accurate gap analysis. The e-PPGBM system is also not fully optimized in 3T (disadvantaged, frontier, outermost) areas.
- c. Evaluation Overly Focused on Deviations, Neglecting Local Innovations DEM tends to assess deviations from standards but often does not provide space to appreciate local innovations that may be more contextually relevant. For example, cadres in East Sumba District use local cultural approaches for nutrition education, which are more effective despite not aligning with national SOPs (Putri et al., 2023).
- d. Limited Capacity of Regional Evaluators Most program implementers in the regions still have limited capacity to understand discrepancy-based evaluation concepts. Evaluations are still dominated by output and administrative approaches. This causes evaluation results to be superficial and fail to address fundamental implementation problems (King et al., 2016).
- e. Not Institutionalized within the National Monitoring and Evaluation System The discrepancy model is not yet part of the official evaluation framework used



policymakers at both national and regional levels to reformulate policies, improve implementation, and reallocate resources.

### 1. Encouraging Revision of SOPs and Operational Standards

Discrepancy evaluation results in several districts have proven to drive changes at the operational level. For example, in Malaka District, East Nusa Tenggara, an evaluation conducted by academic teams and the health office in 2022 revealed that the cadre training standards did not align with the geographical conditions and local literacy. Based on these findings, the Malaka Health Office revised the nutrition cadre training modules to be more contextual and translated into the local language (Utami & Wardhani, 2023). This evaluation was based on the gap analysis between national SOPs and actual implementation, which showed only 52% of cadres attended annual training.

### 2. Improving Integrated Intervention Schemes at the Regional Level

The discrepancy model is also used to evaluate the effectiveness of program convergence across sectors, especially between the Health Office, Education Office, and Village Community Empowerment Office. In East Sumba District, an evaluation by Putri et al. (2023) showed that although village funds were allocated for stunting handling, activities did not run optimally due to the absence of standard activity references and coordination mechanisms. The evaluation results were used by the district's Bappeda to draft Technical Guidelines for Village Fund Use for Sensitive Interventions, which began implementation in the 2023 fiscal year.

### 3. Serving as Supporting Evidence for National Policy

At the national level, findings from various discrepancy-based evaluation studies have contributed to strengthening cross-sector coordination in stunting policy. This is reflected in Presidential Regulation No. 72 of 2021 on Accelerating Stunting Reduction, which emphasizes the importance of monitoring and evaluation as part of the planning and budgeting cycle. This regulation adopts an integrated monitoring and evaluation approach, consistent with the discrepancy evaluation principle that demands consistency between planning and program implementation (Bappenas, 2021).

### 4. Enhancing Regional Accountability in Performance Assessment

Several provinces, such as Central Java and West Sumatra, have used the discrepancy approach in annual stunting reduction performance evaluation meetings, where each district is asked to compare program targets with achievements and explain the causes of gaps (Katadata, 2023). This is an adoption of the discrepancy principle encouraging self-assessment and public accountability. The model has been proven to improve local policymakers' understanding of implementation weaknesses and encourage improvements in cross-sector implementation structures.

### 5. Promoting Service Innovation at the Health Center and Village Levels

DEM-based evaluation has also impacted service innovations at the grassroots level. For example, at Kaliori Health Center, Rembang District, discrepancy evaluation results on low toddler visits led to the innovation of mobile posyandu outreach better suited to the geographical conditions of remote villages. This model reduced the gap between the national toddler visit target (80%) and the actual achievement, which was previously only 45% (Fitriani et al., 2021). This innovation is now replicated in several other areas as a good practice arising from local standard-based evaluation results.

## CRITICAL ANALYSIS

Although evidence shows that discrepancy-based evaluation positively impacts policy improvement, challenges remain in integrating evaluation results into formal decision-making processes. Many evaluation results do not reach key decision-makers or are not well documented to serve as references for long-term policy (Bowen & Zwi, 2015). Therefore, a more systematic reporting and communication system is needed to bridge the gap between academia and public bureaucracy.

## CONCLUSION

This study demonstrates that the Discrepancy Evaluation Model (DEM) holds high relevance and great potential in evaluating stunting reduction programs in Indonesia. By comparing program standards with actual implementation realities, this model allows for the identification of gaps that often remain undetected in output-based evaluation approaches (Stufflebeam & Coryn, 2017; Coryn et al., 2011). The synthesis of 21 articles shows that DEM

effectively identifies structural issues, technical implementation constraints, and regional variations in the execution of both specific and sensitive interventions (Utami & Wardhani, 2023; Putri, Hidayat, & Subekti, 2023). Furthermore, the model has been proven to foster innovations in locally based services, such as adapting cadre training and mobile Integrated Health Service Post (Posyandu) strategies in areas facing geographical challenges (Fitriani et al., 2021).

The integration of bibliometric analysis supports these qualitative findings. Keyword co-occurrence visualization using VOSviewer reveals that the terms “stunting” and “discrepancy” are central within the literature network, connected to topics such as sanitation, intervention, monitoring, and significant variation. The five thematic clusters formed indicate that literature on stunting evaluation using the discrepancy approach has evolved toward a more systematic and multisectoral direction, although it remains dominated by exploratory local-scale studies (Widiastuti & Kurniasih, 2021; Katadata Insight Center, 2024). These results reinforce the importance of strengthening model-based evaluation literature in the field of public health in Indonesia.

To ensure the sustainability and expansion of DEM application, policy support is needed to integrate this model into the national monitoring and evaluation system. Additionally, strengthening the capacity of regional evaluators, improving data quality and integration, and updating program implementation standards are crucial steps. Discrepancy-based evaluation functions not only as a tool to measure gaps but also as a compass for more adaptive, evidence-based, and contextual policy reform (UNICEF Indonesia, 2021; Habicht et al., 2019).

## STRATEGIC RECOMMENDATIONS

Based on the findings and analysis of the application of the Discrepancy Evaluation Model in stunting management programs in Indonesia, several strategic recommendations can be considered by the government, implementing agencies, evaluators, and relevant stakeholders to strengthen evaluation effectiveness and policy impact:

### 1. **Strengthening Standards and Program Reference Documents at All Levels**

The central government, through Bappenas and the Ministry of Health, needs to develop and distribute more detailed and adaptive operational standards and performance indicators for stunting programs. These standards should serve as a standard reference for discrepancy evaluation but also be flexible enough to adapt to local conditions, including in 3T

regions (frontier, outermost, and least developed) (UNICEF Indonesia, 2021; Bappenas, 2020).

### 2. **Integrating the Discrepancy Model into the National Monitoring and Evaluation System**

The DEM should be formally adopted into local and national government evaluation systems as a complement to result-based evaluation approaches. This integration can begin through training local evaluators, revising annual monitoring and evaluation instruments, and developing technical guidelines for discrepancy-based evaluation by Bappenas (Stufflebeam & Coryn, 2017; Bappenas, 2021).

### 3. **Enhancing Capacities of Evaluators and Implementers**

Discrepancy-based evaluation requires high analytical, interpretative, and technical skills. Therefore, long-term investment in training local evaluators is needed, including collaboration with universities, NGOs, and donor agencies. Case-based training modules focused on priority stunting areas should be developed so evaluators can recognize and analyze gaps more contextually (Utami & Wardhani, 2023; Habicht et al., 2019).

### 4. **Building Data Systems that Support Discrepancy Evaluation**

The availability and quality of program implementation data are key to successful DEM-based evaluation. Local governments need to strengthen digital reporting and recording systems such as e-PPGBM, SIPG, and integrated stunting dashboards. Additionally, data interconnectivity across sectors is needed so evaluators can conduct real-time cross-dimensional assessments (Widiastuti & Kurniasih, 2021; Ministry of Health RI, 2023).

### 5. **Utilizing Evaluation Results as Advocacy and Policy Reform Materials**

Discrepancy evaluation results should be openly and systematically communicated to policymakers through cross-sector coordination forums, annual evaluation meetings, and scientific publications. Thus, evaluation results do not stop at documentation but are used to justify policy reforms, guide budget allocation, and motivate field innovations (Bowen & Zwi, 2015; Katadata Insight Center, 2023).

### 6. **Multi-Stakeholder Collaboration for Discrepancy-Based Evaluation Implementation**

The government should encourage the involvement of universities, NGOs, media, and communities in

conducting discrepancy-based stunting program evaluations. Such partnerships not only strengthen public accountability but also enrich evaluation perspectives and accelerate the adoption of recommendations at various government levels (UNICEF Indonesia, 2021; Stufflebeam & Coryn, 2017).

With these strategic recommendations, it is expected that the application of the DEM will not merely be an academic approach but become an effective national evaluative pillar in detecting, preventing, and correcting implementation failures of stunting management programs in Indonesia.

### LIMITATION OF THIS STUDY

Although this review was systematically compiled with reference to the PRISMA guidelines and strengthened by thematic analysis of 21 relevant articles, several limitations should be noted.

First, the literature search was restricted to publications available online from 2015 to 2025. Studies published outside the scope of databases such as Scopus, Google Scholar, and national repositories may not have been identified, including grey literature or internal evaluation reports that were not openly published. This may lead to a bias toward publications that are more easily accessible digitally and internationally.

Second, most of the analyzed studies are local-scale evaluations employing qualitative descriptive approaches, so the findings do not fully reflect the implementation of stunting programs at the national level. Variations in understanding and application of the Discrepancy Evaluation Model (DEM) between studies also result in differences in the interpretation of discrepancies, which may affect the consistency of the analysis and thematic synthesis. The validity of the data in this review is highly dependent on the methodological quality of each primary source.

Third, although this review is complemented by bibliometric analysis using VOSviewer software, there are limitations in the number of documents used, so the results of the keyword co-occurrence visualization do not represent a fully comprehensive map of the literature. This analysis is more exploratory in nature, aiming to observe trends in the use of the terms “discrepancy” and “stunting” in scientific literature, rather than for quantitative generalization. In addition, studies that use different terms, even if substantively relevant (such as “gap analysis” or “program deviation”), may not be captured in the bibliometric network due to keyword mapping limitations. Therefore, the results of this analysis should be regarded

as a complement that provides an initial indication of the conceptual structure of the review, rather than as a final literature map.

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