

Towards A Long-Living Golden Generation : The Packaged High-Sodium Food Excise Scheme In Indonesia

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Article Information	Abstract
Article history: Received : June 30, 2026 Revised : July 7, 2026 Accepted : August 29, 2026 Available online : September 15, 2026	<i>The purpose of this study is to analyze the feasibility of implementing excise on high-sodium packaged food and to propose an effective excise scheme. Additionally, this study aims to assess the potential state revenue that could be generated from the excise on such products. This study employs a qualitative method conducted through the collection and analysis of various literature sources, including books, scientific articles, news reports, and other relevant materials related to the subject matter. The literature reviewed also includes examples from countries that have implemented sodium food taxation policies. Packaged foods exceeding sodium benchmarks could generate around Rp8.5 trillion in excise revenue, based on instant noodles, processed meats, and snacks alone. Expanding the excise to other high-sodium packaged foods could further increase revenue while supporting public health goals. Effective policy design and implementation will be key to maximizing both fiscal and social benefits. The implementation of excise taxes on high-sodium packaged foods in Indonesia could effectively reduce sodium consumption and related health risks, following successful international examples. The potential revenue of IDR 8.5 trillion offers fiscal benefits that could support health and social programs, making this policy both a public health and economic strategy. This study presents an analysis concerning the imposition of excise on currently non-taxed objects, namely high-sodium packaged foods. The analysis is conducted with reference to prevailing regulations, particularly those governing excise, and comprehensively examines the potential adverse impacts that may arise should the consumption of these objects remain unregulated. Furthermore, the study evaluates the prospective state revenue that could be realized through the implementation of the proposed excise policy.</i>
Keywords: Excise Tax; High-Sodium Packaged Food; Sodium Consumption; Public Health; State Revenue; Fiscal Policy; Food Taxation.	
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1. Introduction

Excessive sodium intake is a major modifiable risk factor for hypertension and cardiovascular disease. The World Health Organization (WHO) recommends an adult intake below 2,000 mg of sodium per day, equivalent to less than 5 grams of salt, yet population intake remains above this level in most countries (World Health Organization, 2023). In Indonesia, model-based estimates have placed average salt intake at approximately 8.5 grams per person per day, while the 2023 Indonesian Health Survey reported measured hypertension in 30.8% of adults. These conditions make sodium reduction both a public-health priority and a policy-design problem. For consistency, this article uses the term "high-sodium packaged foods" for packaged products whose sodium content exceeds the applicable category-specific benchmark; "salt" is used only when a source reports salt intake or a salt equivalent.

The Indonesian burden is not limited to individual health outcomes. Farameita et al., (2022) and Rahma & Baskari (2019) associate sodium intake above 2,000 mg per day with a higher prevalence of hypertension, while National Health Insurance data recorded 4,533,574 advanced outpatient visits for hypertension in 2019. Treatment expenditure, avoidable use of health services, premature illness, and productivity losses create costs that are shared by households, employers, and the publicly financed health system. The resulting divergence between the private price of high-sodium products and their broader social cost provides the bridge from the public-health problem to the fiscal-policy question examined in this study.

Pigouvian taxation provides the principal theoretical foundation for that bridge. A Pigouvian tax seeks to incorporate an external social cost into the market price of the activity or product that generates it (Pigou, 1920). Applied to high-sodium packaged foods, an excise tax may operate through two related channels: a higher relative price can reduce or redirect consumer purchases, and a tax linked to a sodium threshold can encourage manufacturers to reformulate products to avoid the levy. If those responses reduce population sodium exposure over time, lower blood pressure and cardiovascular risk may follow. The strength of each channel, however, depends on tax pass-through, consumer price responsiveness, substitution toward untaxed products, and producers' capacity to reformulate; consequently, the health effect cannot be assumed from the existence of the tax alone.

International evidence supports the plausibility of these mechanisms but is not uniform. Graber (2020), in a systematic review of salt and high-sodium food taxes, found that fiscal measures could reduce purchases or consumption and encourage reformulation, although much of the evidence came from modelling and a limited number of real-world policies. Hyseni et al., (2017) likewise found that upstream structural interventions and multi-component sodium-reduction strategies generally produced larger population effects than information-only approaches. In Hungary, a natural-experiment analysis associated the Public Health Product Tax with a 3.4% reduction in the quantity of processed food consumed and a 1.1% increase in unprocessed food, with stronger responses among lower-income households

(Biro, 2015). Together, these findings indicate potential behavioral and reformulation effects while also showing that policy outcomes vary with product coverage, rates, market responses, and accompanying interventions.

Indonesia has primarily relied on non-fiscal measures, including Ministry of Health Regulation No. 30 of 2013 on sugar, salt, and fat information and health messages for processed and ready-to-eat foods. Labeling and education remain important, but their effects depend on consumers noticing, understanding, and acting on the information. International reviews therefore treat fiscal measures as complements to - rather than substitutes for - sodium benchmarks, clear labels, public education, procurement standards, and monitoring (Hyseni et al., 2017; World Health Organization, 2024). A coherent Indonesian strategy should consequently combine price incentives with measures that make lower-sodium choices available and identifiable.

The legal basis also requires explicit examination. Article 2 of Law No. 39 of 2007, amending Law No. 11 of 1995 on Excise, permits excise on goods whose consumption must be controlled, circulation must be supervised, use creates negative impacts for society or the environment, or use warrants a state levy for fairness and balance. High-sodium packaged foods may satisfy the consumption-control and negative-impact criteria because excessive sodium intake contributes to hypertension and cardiovascular disease. Legal compatibility, however, is only a starting point: an operational policy must also specify measurable product thresholds, the taxable unit, the liable party, verification procedures, and enforcement arrangements (Law No. 39 of 2007 Concerning Amendments to Law No. 11 of 1995 Concerning Excise, 2007).

The study is timely because it connects three policy dimensions that are often considered separately. From a public-health perspective, it addresses a preventable risk factor with substantial healthcare consequences. From a regulatory perspective, it tests whether WHO's category-specific sodium benchmarks can support an administrable excise base. From a fiscal perspective, it assesses the potential for an additional excise object and an indicative revenue stream, while retaining consumption control - not revenue maximization - as the primary policy objective. This integration is important because a tax that raises revenue but fails to change prices, purchasing, or product composition would not fulfil its central health rationale.

Existing Indonesian research does not yet provide this integrated assessment. Istiqomah et al. (2021) documented sodium content in processed foods available in Indonesia, while Riansyah et al., (2024) examined the feasibility of excise as an option for controlling high-sodium processed foods and reducing cardiovascular disease. These studies establish the health and product-content problem, but they do not jointly develop a category-based excise design, test its compatibility with Indonesian excise law, estimate indicative fiscal potential, and assess implementation implications. The novelty of the present study lies in combining these legal, public-health, fiscal, and administrative perspectives within one Indonesia-specific policy framework.

Accordingly, this study aims to: (1) evaluate the public-health and legal rationale for excising high-sodium packaged foods; (2) develop an evidence-informed excise design covering the tax base, sodium thresholds, liable parties, and rate structure; (3) estimate the indicative revenue potential for selected product categories; and (4) assess the principal implementation, behavioral, and distributional implications. The guiding question is whether, and under what design conditions, an excise on high-sodium packaged foods could serve as a feasible consumption-control instrument in Indonesia. The study does not claim to measure the tax's realized causal effect, because the proposed policy has not yet been implemented.

2. Method

This study uses a qualitative prospective policy-analysis design supported by an integrative literature review. An integrative review was selected because the research question requires synthesis of heterogeneous evidence, including epidemiological studies, fiscal-policy evaluations, legal materials, market data, and official technical guidance, rather than aggregation of a single empirical outcome. The approach follows the principles of transparent problem definition, searching, evaluation, analysis, and synthesis described by Whitemore & Knafl (2005) and Snyder, (2019). It is therefore a structured integrative review, not a Systematic Literature Review or meta-analysis.

A structured, non-exhaustive search was conducted through Google Scholar, PubMed, and ScienceDirect, supplemented by the official repositories of WHO, the Indonesian Ministry of Health, BPJS Kesehatan, UNDP, and the Indonesian legislation database. Searches combined terms including "sodium" OR "salt" with "tax", "excise", "health tax", "fiscal policy", "packaged food", "reformulation", "consumer behavior", and "Indonesia". The main publication window was January 2005 to June 2026; seminal theoretical works and binding laws issued outside this window were retained. Sources in English or Indonesian were considered, and reference lists of key reviews were examined to identify additional relevant studies.

Sources were included when they provided evidence directly relevant to at least one analytical domain: the health burden of excess sodium, sodium content or consumption in Indonesia, behavioral or reformulation effects of food taxes, international high-sodium food policies, Indonesian excise law, administrative feasibility, or fiscal implications. Peer-reviewed studies, systematic reviews, official statistics, legislation, government reports, and documents from recognized international organizations were prioritized. Duplicate records, sources without identifiable authorship or institutional responsibility, unsupported opinion pieces, and sources without a direct connection to the research question were excluded. News reports were used only for contextual information and were triangulated against primary or official materials wherever possible.

Relevant information was recorded in an evidence matrix containing the source, jurisdiction, study or document type, policy instrument, taxable product or sodium threshold, rate

structure, reported consumer response, producer response, health or fiscal outcome, administrative feature, and stated limitation. The material was analyzed using directed qualitative content analysis and comparative policy analysis. Evidence was coded into five themes: public-health necessity, legal compatibility, behavioral mechanism, fiscal design, and implementation risk. Convergent findings were synthesized, while differences in methods, settings, and policy coverage were retained as limitations rather than treated as directly comparable causal estimates.

The proposed excise framework was developed by translating the synthesized evidence into policy-design criteria. Candidate design elements were assessed against: (1) consistency with Article 2 of the Indonesian Excise Law; (2) the ability to target products exceeding a measurable WHO category-specific sodium benchmark; (3) the likelihood of creating consumer and producer incentives; (4) administrative verifiability and enforceability; (5) proportionality and distributional fairness; and (6) compatibility with complementary labeling, education, and reformulation policies. International cases were used as comparative evidence, not copied mechanically, and each feature was retained only when its underlying mechanism was considered transferable to Indonesia.

The Indonesian contextual analysis used three groups of evidence. Social and health conditions were identified from sodium-consumption research, the 2023 Indonesian Health Survey, and BPJS Kesehatan service and expenditure data. Economic conditions were assessed through packaged-food consumption patterns, price and product-size information, industry and company data, and the risk of disproportionate burdens on lower-income consumers. Legal and institutional conditions were assessed from the Excise Law, existing labeling rules, WHO sodium benchmarks, and the monitoring tasks that a new excise object would create. These contextual factors directly informed the proposed tax base, threshold, liable party, rate form, monitoring requirements, and complementary safeguards. The resulting framework is a prospective policy proposal; it does not constitute an ex-post evaluation of an implemented Indonesian tax.

3. Results and Discussion

3.1 Sodium Consumption in Indonesia

Indonesia has experienced a significant shift towards increased salt consumption, primarily due to the rising intake of packaged foods. The Indonesian population consumes sodium at levels that exceed the recommended limits. This increase in sodium intake is largely driven by demographic changes and evolving lifestyle patterns within society (World Health Organization, 2024). In 2023, the World Health Organization (WHO) published a study titled South-East Asia Region Sodium Benchmarks for Packaged Foods. This report included an analysis of daily salt intake among the Indonesian population. The following table presents the daily salt consumption in Indonesia, categorized by food type:

Table 1. Daily Salt Consumption of the Indonesian Population

Food Category	Salt Consumption (grams per day)
Cereals	2.15
Legumes	0.67
Vegetable Products	0.66
Poultry and Livestock Products	0.58
Fish Products	0.56
Snacks	0.48
Egg Products	0.35
Bakery Products	0.16
Meat Products	0.14
Beverages	0.08
Fruit Products	0.02
Dairy Products	0.01

Source: World Health Organization (2023)

Istiqomah et al., (2021) conducted a study on sodium intake among the Indonesian population using data from the 2014 Individual Food Consumption Survey (Survei Konsumsi Makanan Individu - SKMI). Data collection was performed using a 1x24-hour food recall method, which revealed the percentage of Indonesians whose sodium intake exceeded the recommended threshold of 2000 mg per day. The analysis of sodium consumption by age group is presented in the following table:

Table 2. Daily Salt Consumption Data

Age Group	Sodium Intake < 2000 mg/day	Sodium Intake > 2000 mg/day
0-59 months	75.4%	24.6%
5-12 years	44.8%	55.2%
13-18 years	44.3%	55.7%
19-55 years	45.2%	54.8%
> 55 years	52.8%	47.2%

Source: Istiqomah et al., (2021)

Based on this daily salt consumption data, it is evident that sodium intake among the Indonesian population significantly exceeds the recommended levels. The World Health Organization (WHO) recommends sodium intake of less than 2000 mg per day, which is equivalent to less than 5 grams of salt per day. However, a substantial proportion of the Indonesian population consumes salt beyond the recommended limit, indicating the need to modify dietary habits to achieve better health standards.

The food category contributing the highest sodium intake is cereals, while snacks contribute approximately 0.48 grams of salt per day. The high salt intake from various types of daily consumed foods suggests that many commonly eaten Indonesian foods contain considerable amounts of sodium. Excessive salt consumption is associated with increased risk of several health conditions, particularly those related to the vascular system.

Exceeding the recommended daily salt intake may lead to diseases such as hypertension, heart disease, vascular dementia, impaired kidney function, increased risk of gastric cancer, hypercalciuria, and muscle cramps (Siloam Hospital, 2023). These conditions pose significant threats to public health and quality of life. Therefore, raising awareness about the dangers of excessive salt consumption and promoting healthier dietary patterns are crucial steps to improve overall health outcomes in Indonesia.

3.2 Sodium Benchmark by WHO

Based on the sodium benchmarks established by the World Health Organization (WHO) in 2024, there are 58 categories of packaged foods commonly consumed worldwide. These global sodium benchmarks provide substantial guidance for countries to set sodium targets for packaged foods available in their markets. The primary objective of implementing these sodium benchmarks is to encourage countries in the Southeast Asia region to adopt sodium reformulation targets, accelerate the process of setting national sodium targets, and promote product reformulation to reduce sodium content (World Health Organization, 2024).

In practice, these sodium benchmarks have not been fully implemented in Indonesia. A study by Istiqomah et al., (2021) found that several categories of packaged foods in Indonesia do not comply with the sodium benchmarks established by WHO. Many packaged foods still contain sodium levels that exceed the recommended thresholds. This presents a potential threat of excessive sodium intake among the Indonesian population. The sodium content in various packaged foods in Indonesia is presented in the following table:

Table 3. Sodium Levels in Indonesian Packaged Foods

Food Type	Average Sodium Content (mg/100g)	WHO Sodium Benchmark (mg/100g)	Difference (%)
Cheese	689.23	625	10.28
Processed Cheese	1207.6	720	67.72
Cereals	230	280	-17.86
Instant Noodles	1275.31	770	65.62
Biscuits and Crackers	307.08	265	15.88
Wafers	169.66	265	-35.98
Crackers	507.97	600	-15.34
White Bread	446.22	320	39.44
Sweet Bread	313.84	310	1.24
Processed Meat	711.58	540	31.77
Processed Chicken	621.46	600	3.58
Processed Fish	746.73	270	176.57
Chili and Tomato Sauces	1868.98	650	187.54
Sweet Soy Sauce	1334.06	N/A	-
Savory Snacks	736.83	500	47.37
Chips	387.44	500	-22.51
Extruded Snacks	564.6	520	8.58
Nuts and Processed Nuts	303.69	280	8.46

Source: Istiqomah et al. (2021)

Most packaged foods available in Indonesia still exceed the sodium benchmarks set by WHO. According to the study by Istiqomah et al. (2021), many packaged food products contain sodium levels that are significantly above the recommended standards. This indicates a lack of awareness and compliance among food producers regarding global health guidelines aimed at reducing the risk of sodium-related diseases such as hypertension and heart disease.

In addition to the lack of compliance with the recommended sodium benchmarks, this condition contributes to the increasing sodium intake from packaged foods. Many consumers remain unaware of the sodium content in the packaged foods they consume daily. The lack of clear labeling and insufficient public education about the dangers of excessive sodium consumption also contribute to the rising sodium intake within the community.

3.3 Salt Taxation in Other Country

Excessive sodium intake can have serious public health implications. WHO has set sodium limits to help reduce the risk of cardiovascular diseases, which are among the leading causes of death globally. Therefore, it is essential for governments, food producers, and the public to collaborate in reducing sodium levels in packaged foods and to raise awareness about the importance of consuming lower-sodium foods for better health outcomes.

In addition to applying sodium benchmarks for high-sodium foods, several countries have introduced taxation mechanisms targeting foods with high salt content. Some countries that have implemented salt taxes include:

Table 4. Salt Tax Implementation in Other Countries

Country	Year Implemented	Type of Tax	Tax Object	Rate
Hungary	2011	Public Health Product Tax	Salty snacks, condiments, mustard, tomato sauce, and salty vegetable seasonings (chopped or pureed)	HUF 250/kg
Fiji	2012	Import Fiscal Duty	MSG	32%
Mexico	2013	Food Tax	"Non-essential" foods, including salty snacks, candies, peanut butter, cereal-based processed products exceeding a calorie density threshold (>275 cal/100 g). Salty snacks include potato chips, corn chips, flour chips, fried pork rinds, ready-to-eat popcorn, microwave popcorn, crackers, peanuts, and seeds.	8%
Tonga	2015	Excise Tax / Consumption Tax	Imported instant noodles	T 2/kg (US \$0.90/kg) / 15%
Saint Vincent and the Grenadines	2016	Value Added Tax (VAT)	Salt, sugar, and other sugary drinks	15%

Source: Dodd et al. (2020)

3.4 Legal Feasibility under Indonesian Excise Law

Based on Law of the Republic of Indonesia Number 39 of 2007, which amends Law Number 11 of 1995 concerning Excise, there are specific criteria for goods subject to excise. The characteristics and nature of excisable goods are outlined in Article 2, Paragraph 1, which states that excise may be imposed on certain goods that require consumption control; require distribution supervision; their use may have negative impacts on society or the environment; or their use justifies the imposition of state levies to achieve fairness and balance. In line with these characteristics, sodium content in packaged foods meets the criteria for excisable goods. The rationale is as follows:

a. Consumption Requires Control

Excessive sodium intake, particularly from packaged foods, has become a major contributor to the increasing prevalence of hypertension, cardiovascular disease, and stroke in Indonesia. Since processed foods frequently contain sodium levels exceeding recommended dietary limits, excise taxation could function as a fiscal instrument to reduce consumption by increasing retail prices and encouraging product reformulation. This approach is consistent with the regulatory objective of controlling the consumption of goods that generate negative externalities.

However, the effectiveness of consumption control depends on the responsiveness of both consumers and producers. If demand for certain packaged foods is relatively inelastic, the tax may generate substantial revenue without significantly reducing sodium intake. Likewise, producers may choose to pass the additional tax burden on to consumers rather than reformulate products. Consequently, the design of the excise structure including tax rates, sodium thresholds, and product coverage will be critical in determining whether the policy achieves its intended public health objectives.

b. Distribution Requires Supervision

The distribution of high-sodium packaged foods requires effective monitoring to ensure compliance with sodium standards and excise obligations. An excise system would enable the government to identify products exceeding predetermined sodium thresholds while encouraging manufacturers to disclose accurate nutritional information and comply with food labeling regulations.

Nevertheless, implementation presents considerable administrative challenges. Unlike conventional excise products such as tobacco and alcoholic beverages, sodium is a product attribute rather than a standalone commodity. Consequently, tax administration would require scientifically established sodium benchmarks, standardized laboratory testing, reliable nutritional labeling, and coordination among the Directorate General of Customs and

Excise, the National Agency of Drug and Food Control (BPOM), and the Ministry of Health. Without integrated regulatory oversight and adequate monitoring mechanisms, enforcement costs could increase substantially and reduce the effectiveness of the policy.

c. Usage Can Cause Negative Impacts on Society or the Environment

The excessive use of salt in packaged foods poses significant health risks to the public. Daily salt intake exceeding recommended limits is strongly associated with diseases related to the circulatory system. Health risks include hypertension, heart disease, vascular dementia, kidney dysfunction, increased risk of gastric cancer, hypercalciuria, and muscle cramps (Siloam Hospitals, 2023). These health problems can deteriorate the quality of life and increase public healthcare costs. Consequently, high-sodium packaged foods create negative externalities that justify government intervention through corrective taxation.

From a legal perspective, these externalities strengthen the argument that high-sodium packaged foods fall within the category of goods whose consumption negatively affects society, thereby satisfying one of the statutory requirements for excise. Nevertheless, determining the appropriate sodium threshold remains a potential source of legal and technical dispute. Food manufacturers may challenge the classification of products subject to excise if threshold values are considered arbitrary or inconsistent with scientific evidence. Therefore, regulatory standards should be transparent, evidence-based, and harmonized with national nutrition policies to minimize legal uncertainty.

d. Usage Requires State Levies to Ensure Fairness and Balance

The imposition of excise taxes on salt in packaged foods can generate additional state revenue that can be allocated to public health programs and educational campaigns promoting healthy diets. This excise tax can also help achieve economic fairness by shifting part of the healthcare cost burden caused by excessive salt consumption to the producers and consumers of high-sodium products. The revenue collected can be directed toward social welfare programs, thus balancing economic interests with public health goals.

The implementation of a salt excise on packaged foods in Indonesia is supported by strong public health, regulatory, and fiscal justifications, including consumption control, distribution supervision, risk mitigation, and equitable cost-sharing through state levies. This policy would contribute to reducing health risks associated with excessive salt consumption, ensure compliance with health standards, and improve public welfare through appropriately allocated excise revenues. Therefore, the introduction of a salt excise on packaged foods should be seriously considered as a necessary public health intervention in Indonesia.

However, implementation may require adjustments to the existing legal framework. Although Law Number 39 of 2007 provides general criteria for excisable goods, introducing high-

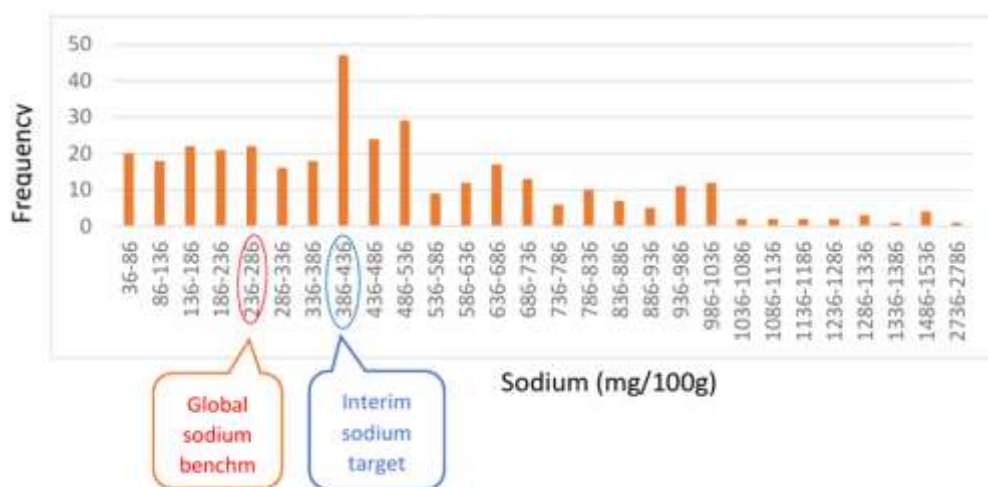
sodium packaged foods as a new excise object would likely require implementing regulations specifying taxable products, sodium thresholds, tariff structures, reporting obligations, and enforcement procedures. Additional compliance costs would also arise for food manufacturers through product testing, reformulation, labeling modifications, and reporting requirements. Policymakers therefore need to balance public health benefits with regulatory burdens, particularly for small and medium-sized food producers.

3.5 Proposed Policy Design

The imposition of excise on salt in packaged foods targets products circulating in the market that exceed the salt content threshold. The salt threshold for packaged foods refers to the global sodium benchmarks established by the World Health Organization (WHO). These benchmarks are an improved version of the sodium standards initially set in May 2021, with the second edition of the global sodium benchmarks published in April 2024.

The salt limits applied do not refer to the interim sodium benchmarks specific to the Southeast Asia region because WHO has scheduled a gradual reduction in these regional benchmarks over the next four years to align with the global sodium targets. This progression is illustrated in the following chart.

Chart 1. Global Sodium Benchmark



Source: World Health Organization (2024)

The global sodium benchmarks set by WHO range from 120 mg to 13,000 mg per 100 grams of food. The taxable objects for the proposed salt excise refer to these benchmarks and are categorized by food type. WHO's global sodium benchmarks classify foods into 18 distinct categories, each with a specific sodium limit per 100 grams. The recommended sodium limits per category are presented in the following table:

Table 5. Food Categories and Sodium Limits

Food Category	Sodium Benchmark (mg/100g)	Sodium Percentage (%)
Chocolate and sugar confectionery, energy bars, sweet toppings, and desserts	175	0.175
Cakes, sweet biscuits, pastries, and dry mixes	250	0.25
Savoury snacks	625.83	0.63
Cereals	200	0.20
Cheese	803	0.803
Ready meals and composite dishes	471.67	0.47
Butter, fats, and oils	400	0.40
Bread and bakery products	340	0.34
Processed meat, poultry, games, and similar products	553.5	0.55
Processed fruits, vegetables, and legumes	442.5	0.44
Plant-based meat/food products	265	0.265
Sauces, dips, and dressings	14,062.50	14.06

Source: World Health Organization (2024)

These sodium benchmarks serve as the maximum permissible salt content in packaged foods. They are established to ensure that food producers regulate the salt levels in their products, keeping them below thresholds that may harm consumer health. The primary objective of these benchmarks is to mitigate health risks associated with excessive salt consumption, such as hypertension, heart disease, and stroke. Packaged foods that comply with the sodium benchmarks are considered safe for long-term consumption.

Packaged foods that exceed the sodium limits specified in these benchmarks will become subject to excise taxation. This excise aims to encourage producers to adhere to established sodium standards and to reduce the salt content in their products. Additionally, excise on high-sodium packaged foods serves as a disincentive for consumers, promoting healthier purchasing decisions and contributing to the reduction of excessive salt consumption in society. In this way, the salt excise policy is expected to have a positive impact on public health.

The excise on salt in packaged foods will be based on the WHO sodium benchmarks. Packaged foods that exceed the prescribed sodium limits will be taxed accordingly. The tariff structure and excise mechanism will follow the model of Hungary's public health product tax. Similar to Hungary, the excise will be imposed per kilogram of packaged food produced, considering the wide variation in packaging sizes and net weights of packaged foods in Indonesia, which makes it difficult to apply excise per package unit.

The average retail price of packaged foods in Indonesia typically ranges from IDR 1,000 to IDR 15,000, depending on packaging size and food content. For excise purposes, the average price of IDR 3,000 per package is used as a reference, based on the price of instant noodles—a commonly consumed packaged food in Indonesia. A typical packaged food product priced at

IDR 3,000 generally weighs around 100 grams.

The excise rate is proposed at 10% of the retail price, considering the following:

- The initial excise rate on sodium will be set at a relatively low level to ensure the feasibility of policy implementation, with the possibility of adjustment over time based on policy and economic conditions.
- The 10% rate is designed to provide consistency with the restaurant tax rate of 10%, aiming to create price balance between packaged and freshly prepared food, despite the different tax objects.
- 10% rate is considered economically appropriate because it is sufficiently high to influence consumer purchasing decisions without creating excessive market distortions. Excise taxes are intended to internalize the negative externalities associated with harmful consumption rather than to maximize revenue alone. A moderate introductory rate provides a price signal that encourages consumers to reduce the consumption of high-sodium products while allowing manufacturers time to reformulate products to lower sodium content.
- Compared with lower rates, 10% excise is more likely to produce meaningful behavioural responses and generate sufficient revenue to support public health programmes. Conversely, substantially higher rates (e.g., 20–30%) could impose a greater financial burden on consumers, increase compliance costs for industry, and face stronger political and legal resistance during the early stages of implementation. Therefore, a 10% rate represents a balanced policy option between public health objectives, revenue generation, and implementation feasibility (OECD,2023).

The estimated excise per kilogram of production is as follows:

Table 6. Excise Rate Imposed Per Kilogram of Production

Retail Price (IDR)	Weight (grams)	Price per Kilogram (IDR)	Excise (10% of Retail Price)
3,000	100	30,000	3,000

Source: author's data (2025)

This excise rate of IDR 3,000 per kilogram will effectively increase the retail price per 100-gram package by IDR 300. This price increase is expected to be directly perceived by consumers, prompting them to reconsider purchasing high-sodium packaged foods. Thus, the salt excise policy not only aims to boost state revenue but also to discourage the consumption of health-risk products.

The salt excise is expected to generate two positive impacts:

- Increased state revenue that can be allocated to public health programs and educational initiatives promoting healthy dietary habits, particularly concerning salt intake.
- The price increase will encourage consumers to make more selective and health-conscious purchasing decisions, potentially reducing the overall consumption of high-sodium packaged foods. This preventive measure is crucial for lowering the prevalence of diseases caused by excessive salt intake, such as hypertension and heart disease.

The application of a single excise tariff is intended to simplify the calculation and administration processes. By adopting a flat rate for all high-sodium packaged foods, the system will become more efficient and easier to oversee. This approach also provides clear guidance to both producers and consumers regarding the excise amounts due, thereby enhancing compliance. Simplification is expected to support more effective excise implementation and yield positive health outcomes.

The excise on high-sodium packaged foods will be levied on manufacturers and importers. Manufacturers refer to individuals or legal entities engaged in producing packaged foods, while importers refer to individuals or legal entities that bring excisable goods into the Indonesian customs territory. Manufacturers and importers of packaged foods that exceed the sodium benchmarks will be required to pay the excise per kilogram of packaged food, in accordance with Article 1 of the Minister of Finance Regulation No. 108/PMK.04/2008 on Excise Settlement.

Ultimately, the excise burden will be transferred to end consumers through product pricing, as manufacturers typically incorporate excise costs into their sale prices. Nevertheless, manufacturers and importers remain responsible for the record-keeping and payment of the excise on high-sodium packaged foods.

Excise settlement for high-sodium packaged foods will follow Article 7 of Law No. 39 of 2007, which amends Law No. 11 of 1995 on Excise. For domestically produced excisable goods, the excise is payable when the goods are released from the factory or storage facility. For imported excisable goods, the excise is payable when the goods are imported for use. This procedure is consistent with Minister of Finance Regulation No. 108/PMK.04/2008 on Excise Settlement.

Excise settlement will be conducted through direct payment before the excisable goods are released from the factory, warehouse, temporary storage facility, or bonded warehouse. Unlike other excisable goods, high-sodium packaged foods cannot carry excise stamps because the excise is calculated based on production or import volume in kilograms, not per individual package. Given the varying net weights of packaged foods in Indonesia, the excise will be settled based on the total weight (in kilograms) of packaged foods produced or imported.

3.6 Potential Fiscal Revenue

The potential analysis of excise on high-sodium packaged foods will be conducted by estimating the potential excise revenue from instant noodles at maximum estimated consumption levels. Instant noodles are one of the excisable goods categorized as ready-to-eat and convenience foods as well as composite dishes, with a sodium threshold of 471.67 mg per 100 grams or 0.47% sodium content. According to a study by Istiqomah et al. (2021), the average sodium content of instant noodles in Indonesia is 1,275.31 mg per 100 grams. This indicates that instant noodles in Indonesia exceed the sodium threshold and are therefore subject to excise.

Based on data from the World Instant Noodles Association (2024), Indonesia ranked second in the world for instant noodle consumption in 2023, with 14,540,000,000 portions consumed in one year. Based on these figures, the estimated excise revenue from instant noodles can be calculated as follows:

Table 7. Excise Revenue Analysis from Instant Noodles

Instant Noodles Consumed	Net Weight (grams)	Total Production (kg)	Excise Rate (per kg)	Total Excise Revenue
14,540,000,000 portions	85 grams	1,235,900,000 kg	Rp3,000	Rp3,707,700,000,000

Source: author's data (2025)

Based on this estimate, instant noodles exceeding the specified sodium benchmark would contribute approximately Rp3.7 trillion in excise revenue. This potential analysis is currently limited to a single subcategory of packaged food, namely instant noodles. Given the extremely high consumption of instant noodles in Indonesia, implementing an excise tax on products that exceed sodium limits could become a significant source of national revenue. This demonstrates the considerable potential of utilizing excise regulations as a tool to control sodium consumption while increasing state revenue.

In addition to instant noodles, processed meat products circulating in Indonesia also exceed the established sodium benchmark. According to Istiqomah et al. (2021), the average sodium content of processed meat in Indonesia is 711.58 mg per 100 grams, which surpasses the sodium benchmark of 553.5 mg per 100 grams, making these products excisable. Based on the financial reports of several major processed meat manufacturers dominating the Indonesian market, the potential excise revenue from high-sodium packaged foods can be estimated as follows:

Table 8. Excise Revenue Analysis from Processed Meat

Total Revenue	Rp54,312,000,000	Rp8,643,635,053	Rp7,956,231,000,000
Average Price per Unit	Rp40,000	Rp40,000	Rp40,000
Units Sold	1,357,800	216,091	198,905,775
Net Weight (grams)	500 grams	500 grams	500 grams
Total Production (kg)	678,900	108,045	99,452,888
Excise Rate (per kg)	3,000	3,000	3,000
Total Excise Revenue	Rp2,036,700,000	Rp324,136,314	Rp298,358,662,500
Total		Rp300,719,498,814	

Source: author's data (2025)

Based on this estimate, processed meat products exceeding the sodium benchmark could contribute approximately Rp300.7 billion in excise revenue. This potential analysis focuses solely on a single subcategory of packaged foods, namely processed meat products. Considering the high consumption level of processed meats in Indonesia, implementing excise taxes on products exceeding sodium limits could also become a significant revenue stream for the state. This illustrates the substantial potential of excise regulation to both control sodium consumption and enhance national revenue.

Furthermore, snack products commonly sold in Indonesia also exceed the established sodium benchmarks. According to Istiqomah et al. (2021), the average sodium content in snacks in Indonesia is 736.83 mg per 100 grams, exceeding the sodium benchmark of 625.83 mg per 100 grams, thereby qualifying these products as excisable. Based on financial reports from major snack manufacturers dominating the Indonesian market, the potential excise revenue from high-sodium packaged foods can be estimated as follows:

Table 9. Excise Revenue Analysis from Snack Product

Total Revenue	Rp18,557,821,248,451	Rp4,250,000,000,000	Rp9,403,369,026,910	Rp4,435,942,642,861
Average Price per Unit	Rp7,000	Rp5,000	Rp5,000	Rp2,000
Units Sold	2,651,117,321	850,000,000	1,880,673,805	2,217,971,321
Net Weight (grams)	300 grams	250 grams	250 grams	20 grams
Total Production (kg)	795,335,196	212,500,000	470,168,451	44,359,426
Excise Rate (per kg)	3,000	3,000	3,000	3,000
Total Excise Revenue	Rp2,386,005,589,087	Rp637,500,000,000	Rp1,410,505,354,037	Rp133,078,279,286
Total Estimated Excise Revenue		Rp4,567,089,222,409		

Source: author's data (2024)

Based on this analysis, snack products exceeding the sodium benchmark could contribute

approximately Rp4.5 trillion in excise revenue. This potential analysis is limited to one subcategory of packaged foods, namely snack products. Given the very high consumption of snacks in Indonesia, implementing excise taxes on products exceeding sodium limits could become a significant source of national revenue. This underscores the significant opportunity to leverage excise regulation as a tool to manage sodium consumption while simultaneously increasing government income.

Based on the potential analysis across the three subcategories of foods subject to excise, the total estimated excise revenue from these categories is as follows:

Table 10. Excise Revenue Analysis

Food Category	Total Estimated Excise Revenue
Instant Noodles	Rp3,707,700,000,000
Processed Meats	Rp300,719,498,814
Snack Products	Rp4,567,089,222,409
Total	Rp8,575,508,721,223

Source: author's data (2025)

Based on this analysis, packaged foods that exceed the sodium benchmark could contribute approximately Rp8.5 trillion in national excise revenue. This potential analysis currently covers only three subcategories of packaged foods: instant noodles, processed meats, and snack products. If the excise is applied more broadly across various categories of high-sodium packaged foods, the potential state revenue could increase significantly. This approach would not only support public health efforts by reducing excessive sodium consumption but also provide additional funds that could be allocated to public health and social welfare programs. Further analysis and the implementation of appropriate policies will be essential to ensure the successful application of excise taxes on high-sodium packaged foods and to maximize the benefits for both the state and society.

However, the revenue projection is subject to several simplifying assumptions that should be acknowledged. First, the estimation assumes that the average retail prices of taxable products remain relatively stable during the implementation period. Significant price fluctuations caused by inflation, changes in production costs, or competitive market conditions could alter the excise base and consequently affect total revenue (OECD, 2023). Second, the analysis relies on representative average package weights and sodium content for each product category. In practice, considerable variation exists across brands and product sizes, which may influence the amount of excise payable once sodium thresholds are applied. Third, the calculation is based on available production and market volume data reported by government statistics and industry publications. Although these data provide a reasonable basis for estimation, production volumes may change over time in response to market demand, product reformulation, or broader economic conditions. Furthermore, differences in market shares among manufacturers may affect the distribution of the tax burden across the food industry.

Another important assumption is that consumer purchasing behaviour remains unchanged immediately following the introduction of the excise. In reality, excise taxes are specifically intended to influence consumer behaviour by increasing retail prices and encouraging substitution toward healthier products. Economic theory and empirical evidence indicate that higher food prices generally reduce demand, although the magnitude of the response depends on product-specific price elasticity, consumer income, and the availability of substitutes. Consequently, actual excise revenue may be lower than the estimated amount if consumers substantially reduce purchases of taxed products or if manufacturers reformulate products to remain below the taxable sodium threshold. Conversely, if behavioural responses are limited in the short term, realised revenue could remain close to the estimated value.

The proposed excise should also consider potential producer responses rather than assuming that manufacturers will simply pay the tax. Economic theory suggests that producers may adopt various strategies to reduce the impact of excise taxation, including reformulating products to reduce sodium content, reducing package size, adjusting pricing strategies, or absorbing part of the tax to maintain market competitiveness (Allcott et al., 2019; OECD, 2023). Evidence from health-related food taxes indicates that product reformulation is a common industry response and can contribute to improved nutritional quality while reducing the number of products subject to taxation. These responses may influence both the effectiveness of the excise and the amount of revenue ultimately collected.

Accordingly, the projected excise revenue should be interpreted as a policy simulation rather than a fixed outcome, as actual revenue will depend on producer and consumer behavioural responses after implementation. Although widespread reformulation or changes in pricing strategies may reduce excise revenue over time, such outcomes should not necessarily be regarded as policy failures because the primary objective of the excise is to reduce excessive sodium consumption and its associated health risks. Therefore, periodic evaluation of sodium thresholds, market responses, and industry compliance will be essential to ensure that the excise continues to achieve both its public health and fiscal objectives.

Nevertheless, the estimate provides a useful indication of the fiscal potential of a sodium excise and demonstrates that high-sodium packaged foods could constitute a meaningful source of public revenue while supporting broader public health objectives. Future research should employ consumer demand models, product-level sales data, and price elasticity estimates specific to Indonesia to improve the precision of revenue projections and evaluate the long-term fiscal and health impacts of the proposed policy.

3.7 Results

a. Communication

Communication is a fundamental determinant of successful policy implementation because it ensures that policy objectives, procedures, and responsibilities are clearly understood by implementing actors. Following Edward III's policy implementation framework (as cited in Abdoellah & Rusfiana, 2016), this study examines communication through three dimensions: transmission, clarity, and consistency.

The findings indicate that communication in implementing the Free Health Check (CKG) Program has generally functioned effectively. Jabiren Community Health Center (Puskesmas Jabiren) serves as the primary coordinating institution responsible for translating national policy directives into operational activities at the village level. Policy information is transmitted through a hierarchical communication system, beginning with the Ministry of Health and district health authorities before reaching the community health center, village government, community health cadres, and local residents.

A healthcare worker explained that after receiving directives from higher authorities, the community health center organized internal coordination meetings and collaborated with village governments to mobilize community participation.

"The program comes from the national level. We conduct coordination meetings and ask village heads to help mobilize residents, including visiting houses to encourage participation." (Healthcare worker, interview, October 18, 2025)

This communication mechanism demonstrates a structured top-down implementation model while maintaining collaboration with local stakeholders. The involvement of village governments enables policy messages to reach residents more effectively, particularly in rural communities where interpersonal communication remains an important source of information. Similar findings have been reported by Suprayitno et al. (2026), who argue that coordination between implementing agencies and local governments strengthens policy implementation by reducing communication gaps between policymakers and beneficiaries.

The transmission process is also supported by clear coordination among healthcare workers. Operational schedules, staff assignments, and service locations are prepared by Puskesmas Jabiren and communicated through internal WhatsApp groups before being disseminated to village authorities. One healthcare worker explained:

"The health center prepares the monthly schedule, determines the assigned health workers, and informs us through the WhatsApp group before the activities begin." (Healthcare worker, interview, October 18, 2025)

The use of digital communication facilitates coordination among implementing staff and

contributes to more efficient program management. At the same time, the centralized scheduling system ensures that healthcare personnel are distributed across villages according to service needs.

Communication was also characterized by a high degree of message clarity. The implementation of the CKG Program follows the Circular Letter of the Ministry of Home Affairs No. 400.5.2/290/SJ, which provides clear guidance regarding program objectives and implementation procedures. These policy directives are subsequently translated into operational activities by Puskesmas Jabiren through coordination meetings involving village governments and community health cadres. A healthcare worker explained:

"We coordinate with the village government, and they recruit local health cadres to assist us in providing services." (Healthcare worker, interview, October 18, 2025)

The participation of community health cadres enhances the clarity of policy communication because information is delivered through trusted local actors who understand community characteristics and can explain the program using language familiar to residents. This finding supports Edward III's proposition that clear communication reduces ambiguity among policy implementers and beneficiaries, thereby increasing implementation effectiveness.

The third dimension, communication consistency, was reflected in the routine implementation of monthly health check activities. Although operational schedules occasionally changed because of village events or seasonal flooding, these adjustments were communicated systematically through established coordination channels. A key informant stated:

"Every month there is a schedule, although it may change if the village has another activity or when flooding occurs." (Key informant, interview, October 14, 2025)

Rather than weakening implementation, schedule adjustments illustrate administrative flexibility while maintaining policy consistency. Changes are communicated transparently to all implementing actors, allowing service delivery to continue despite local constraints. Such adaptive communication helps preserve community trust and minimizes confusion among program beneficiaries.

Overall, the communication dimension demonstrates that the implementation of the CKG Program in Saka Kajang Village is supported by effective coordination among government institutions, healthcare workers, village authorities, and community health cadres. Communication is characterized by structured policy transmission, clear operational guidance, and consistent information dissemination despite contextual challenges. These findings confirm Edward III's argument that effective communication constitutes a critical prerequisite for successful policy implementation and reinforce previous studies highlighting the importance of interorganizational coordination in improving public service delivery at the

local level.

b. Resources

Resources constitute one of the most critical determinants of successful policy implementation. According to Edward III (as cited in Abdoellah & Rusfiana, 2016), even well-designed public policies are unlikely to achieve their intended objectives without adequate resources. These resources include human resources, information, authority, and facilities, all of which influence the capacity of implementing agencies to translate policy into practice. The implementation of the Free Health Check (CKG) Program in Saka Kajang Village demonstrates that the availability and management of these resources significantly affect both service quality and program sustainability.

The first resource dimension concerns human resources. The implementation of the CKG Program relies primarily on the healthcare personnel of Jabiren Community Health Center, consisting of physicians, nurses, midwives, laboratory analysts, nutritionists, and administrative staff. Each professional performs specific responsibilities according to their competencies. Physicians supervise clinical services, nurses conduct basic health examinations and health education, midwives focus on maternal and reproductive health, laboratory analysts perform diagnostic tests, while nutritionists provide nutritional assessments and counselling. Administrative personnel support participant registration, documentation, and reporting through the national digital health information system.

In addition to healthcare professionals, village health cadres play an important role in supporting service delivery. Their responsibilities include participant mobilization, registration assistance, crowd management, and health promotion activities. This collaborative arrangement reflects the integration of formal healthcare providers and community-based volunteers in delivering preventive healthcare services.

Despite this multidisciplinary workforce, interview findings reveal that the number of healthcare personnel remains insufficient to meet operational demands. A key informant explained that each integrated health post is generally served by only two healthcare workers, while financial incentives are limited to transportation reimbursement.

"Two health workers are assigned to each integrated health post. They conduct the examinations, while the data are entered into the ASIK application. We only provide transportation reimbursement of around IDR 50,000 to IDR 60,000 from the Community Health Center budget." (Key informant, interview, October 14, 2025)

Healthcare workers also acknowledged that staff shortages frequently affect field operations.

"Usually there are three of us, but today I am working alone because the others are unavailable and no replacement is available." (Healthcare worker, interview, October

18, 2025)

These findings indicate that although qualified personnel are available, the quantity of implementing staff remains inadequate, particularly during outreach activities involving multiple service stations. Human resource shortages increase individual workloads and may reduce service efficiency if participant attendance continues to increase. Similar findings have been reported by Ferriyanto (2026), who argues that policy implementation capacity depends not only on institutional commitment but also on the adequacy of frontline personnel responsible for delivering public services.

To compensate for these limitations, Puskesmas Jabiren actively involves village health cadres in service delivery. A healthcare worker explained:

"Our core team consists of only three health workers, but five cadres assist us during the examinations. Their support allows us to maintain service quality despite staff shortages." (Healthcare worker, interview, October 18, 2025)

The involvement of community health cadres represents an adaptive implementation strategy that expands service capacity without substantially increasing operational costs. Beyond assisting healthcare workers, cadres also strengthen communication between service providers and local residents because they possess extensive knowledge of community characteristics and enjoy a high level of public trust. Their participation therefore enhances both operational efficiency and community acceptance of the program.

The second resource dimension concerns information, which is essential for coordinating implementation activities and ensuring that policy objectives are understood by both implementers and beneficiaries. The findings indicate that the CKG Program has adopted a digital information management system through the Aplikasi Sehat IndonesiaKu (ASIK). Healthcare workers use this platform to record participant data, upload examination results, and submit reports to the district health office.

Nevertheless, implementation challenges remain, particularly during participant registration. Healthcare workers explained that although digital registration is officially available through the Satu Sehat application and WhatsApp, many participants, particularly older adults, are unable to complete the process independently.

"Participants can register through the Satu Sehat application or WhatsApp, but most of the time we help them because many elderly participants do not have mobile phones or are unfamiliar with the technology." (Healthcare worker, interview, October 14, 2025)

Consequently, healthcare workers frequently perform manual registration before entering participant information into the digital system.

"We usually register participants manually first, and then we input the data into the online application ourselves." (Healthcare worker, interview, October 14, 2025)

These findings reveal that digitalization has improved reporting efficiency but has not fully eliminated administrative burdens. Limited digital literacy among elderly participants shifts additional responsibilities to healthcare workers, thereby increasing their workload during service delivery. Similar challenges have been identified in studies of digital public services, which emphasize that technological innovation alone cannot improve policy implementation unless accompanied by adequate user capacity and digital inclusion initiatives.

Information dissemination to the community is primarily conducted through village governments, health cadres, and integrated health posts. Community members generally reported that they learned about CKG activities through local health volunteers.

"We receive information from the health cadres because the activities are held every month." (Community member, interview, October 18, 2025)

This finding indicates that interpersonal communication remains more effective than digital communication in rural communities, particularly among older populations. Therefore, although digital platforms have strengthened administrative reporting, community-based communication continues to play a central role in ensuring program participation.

The third resource dimension relates to authority. Edward III emphasizes that effective policy implementation requires clear institutional authority and well-defined responsibilities among implementing organizations. The findings demonstrate that the organizational structure of the CKG Program clearly allocates authority among the Ministry of Health, the Pulang Pisau District Health Office, Puskesmas Jabiren, village governments, healthcare workers, and community health cadres.

Puskesmas Jabiren functions as the primary implementing institution responsible for planning operational schedules, assigning healthcare personnel, coordinating with village governments, and monitoring program implementation across eight villages within its service area. A key informant explained:

"Puskesmas Jabiren is responsible for eight villages, and we prepare the monthly implementation schedule for each service location." (Head of Administration, interview, October 14, 2025)

Healthcare workers confirmed that operational decisions are made centrally by the community health center.

"The health center prepares the schedule; we simply carry out the assigned activities." (Healthcare worker, interview, October 18, 2025)

This centralized authority ensures consistency in service delivery while allowing operational flexibility at the field level. Healthcare workers retain sufficient discretion to respond to unexpected technical problems without disrupting service delivery. Community members acknowledged that occasional equipment failures or logistical constraints were generally resolved immediately by the implementing team.

Overall, these findings demonstrate that institutional authority within the CKG Program is clearly defined and functions effectively through coordination among multiple administrative levels. Such clarity minimizes role ambiguity and facilitates efficient decision-making during implementation.

The fourth resource dimension concerns facilities and infrastructure. Interview findings consistently identify limited equipment and financial resources as the primary constraints affecting program implementation. Although the CKG Program offers comprehensive health examinations in principle, healthcare workers acknowledged that service delivery is restricted by insufficient diagnostic equipment and operational budgets.

"The application includes many examination features, but in practice we cannot perform all of them because equipment and budgets are limited." (Healthcare worker, interview, October 14, 2025)

Another healthcare worker similarly observed:

"The quality of services is constrained by limited examination equipment because the program does not have a dedicated operational budget." (Healthcare worker, interview, October 18, 2025)

Despite these limitations, the Saka Kajang Village Government provides complementary logistical support by purchasing diagnostic test strips for blood glucose, cholesterol, and uric acid examinations, as well as providing refreshments for participants attending monthly activities.

"The village government purchases examination strips every month and provides snacks for community members who participate." (Healthcare worker, interview, October 18, 2025)

Community members also recognized that although equipment occasionally became unavailable, the overall quality of services remained satisfactory.

"The services are good, although sometimes the examination equipment runs out." (Community member, interview, October 18, 2025)

These findings suggest that local government support partially compensates for the limited financial resources allocated to the national program. The active contribution of the village

government illustrates how local institutional commitment can enhance policy implementation even when central funding remains insufficient. Nevertheless, dependence on village-level initiatives also raises concerns regarding long-term sustainability because service quality may vary across villages with different fiscal capacities.

Overall, the resource dimension demonstrates that the implementation of the CKG Program benefits from committed healthcare personnel, effective organizational authority, community participation, and local government support. However, shortages of healthcare workers, limited digital literacy among participants, inadequate medical equipment, and insufficient operational funding continue to constrain implementation. Consistent with Edward III's policy implementation framework, these findings indicate that the availability of resources remains a decisive factor influencing implementation effectiveness. Strengthening human resource capacity, expanding digital literacy initiatives, improving medical infrastructure, and ensuring more sustainable financial support are therefore essential to enhance the quality and continuity of preventive healthcare services under the CKG Program.

c. Disposition

Disposition refers to the attitudes, commitment, and willingness of policy implementers to carry out government programs in accordance with their intended objectives. According to Edward III (as cited in Abdoellah & Rusfiana, 2016), policy implementation is more likely to succeed when implementers possess a positive attitude toward the policy and demonstrate commitment despite operational constraints. In the context of the Free Health Check (CKG) Program, the findings indicate that healthcare workers exhibit a strong sense of responsibility and commitment, which has contributed significantly to the continuity of service delivery despite limitations in financial incentives and medical resources.

Field observations and interview data reveal that the implementation of the CKG Program is supported by constructive collaboration between Jabiren Community Health Center and the Saka Kajang Village Government. The village government provides logistical assistance, including examination venues, refreshments for participants, and supplementary medical supplies, while healthcare workers are responsible for conducting health examinations, delivering health education, and providing basic treatment when appropriate. This collaborative arrangement reflects a shared commitment among local stakeholders to improve community access to preventive healthcare services.

The attitudes of healthcare workers emerged as one of the strongest enabling factors in program implementation. Although operational conditions remain challenging, healthcare personnel consistently demonstrated professionalism and a strong service orientation. Interviews with community members revealed high levels of satisfaction with the behaviour and communication of healthcare workers during service delivery. Participants emphasized that healthcare workers were approachable, respectful, and willing to explain examination

results in language that was easy to understand.

"They are all friendly and provide good services." (Community member, interview, October 18, 2025)

Another participant similarly stated:

"The healthcare workers are friendly, and they explain our health conditions clearly even though they cannot always provide medicines." (Community member, interview, October 18, 2025)

These findings suggest that interpersonal communication and positive attitudes among frontline healthcare workers strengthen public trust in the CKG Program. In preventive healthcare programs, community acceptance often depends not only on the availability of medical services but also on the quality of interactions between service providers and beneficiaries. Friendly and respectful communication encourages community participation and supports the long-term sustainability of public health interventions.

Despite this positive disposition, interviews also indicate that healthcare workers receive relatively limited financial compensation. Rather than performance-based incentives, implementing staff receive transportation reimbursement for each outreach activity conducted in the villages. One healthcare worker explained:

"We receive around IDR 50,000 as transportation reimbursement each time we conduct health services in the village." (Healthcare worker, interview, October 18, 2025)

Another informant clarified that the reimbursement is financed directly from the operational budget of Puskesmas Jabiren and varies according to travel conditions.

"Transportation costs are covered by the health center. In remote villages, expenses are sometimes much higher because we need river transportation and motorcycles, especially during the rainy season." (Healthcare worker, interview, October 14, 2025)

These findings demonstrate that financial incentives remain modest relative to the operational demands of outreach services. Healthcare workers frequently travel long distances, transport medical equipment, and provide services under difficult geographical conditions. Nevertheless, limited financial rewards have not diminished their willingness to implement the program. Instead, professional responsibility and commitment to public service appear to be stronger motivational factors than monetary incentives.

This finding supports Edward III's argument that the disposition of implementers extends beyond formal organizational arrangements and includes individual commitment to policy objectives. Similar observations have been reported in previous studies of public service implementation, which found that intrinsic motivation and professional ethics among

frontline workers often compensate for limited organizational resources and financial support (Ferriyanto, 2026). However, sustained reliance on intrinsic motivation alone may not be sufficient to maintain program effectiveness over the long term.

Healthcare workers also expressed expectations for greater institutional support to improve program implementation. Several informants emphasized the need for increased operational budgets, additional medical supplies, and more adequate transportation support, particularly for outreach activities conducted in geographically isolated villages. These expectations should not be interpreted as dissatisfaction with the program itself but rather as constructive feedback aimed at improving service quality and ensuring program sustainability.

Overall, the disposition dimension indicates that the implementation of the CKG Program is supported by highly committed healthcare workers who continue to deliver services professionally despite limited incentives and operational challenges. Positive attitudes toward the program, effective communication with community members, and a strong sense of public service have strengthened community trust and participation. Nevertheless, sustaining this positive disposition requires greater institutional recognition through adequate financial support, improved working conditions, and continuous professional development. Strengthening these aspects would not only enhance staff motivation but also contribute to the long-term effectiveness and sustainability of the CKG Program within rural communities.

d. Bureaucratic Structure

Bureaucratic structure constitutes the fourth dimension of Edward III's policy implementation framework and refers to the organizational arrangements, standard operating procedures (SOPs), and division of responsibilities that guide policy execution (Edward III, as cited in Abdoellah & Rusfiana, 2016). A well-structured bureaucracy facilitates coordination among implementing agencies, minimizes administrative ambiguity, and promotes consistency in service delivery. The findings of this study indicate that the implementation of the Free Health Check (CKG) Program in Saka Kajang Village is supported by a relatively well-defined bureaucratic structure characterized by standardized procedures and effective collaboration among government institutions, healthcare workers, and community health cadres.

The implementation of the CKG Program follows operational procedures established by the Ministry of Health and implemented through the Pulang Pisau District Health Office and Puskesmas Jabiren. These procedures regulate participant registration, health examinations, data recording, and reporting using the national digital health information system. Interview findings suggest that the procedures are simple and accessible, allowing community members to participate without experiencing significant administrative barriers. A healthcare worker explained:

“The procedure is very simple. New participants only need to bring their identity card and complete the registration form, while returning participants present their visit card before undergoing the examination.” (Healthcare worker, interview, October 18, 2025)

The simplicity of these procedures contributes to efficient service delivery by reducing administrative complexity while maintaining accurate participant records. First-time participants complete basic registration, whereas returning participants continue their health monitoring through existing medical records. Attendance is subsequently documented and reported through the ASIK digital information system, ensuring that program implementation complies with national reporting requirements.

The findings indicate that standardized operational procedures also contribute to service consistency across different villages within the jurisdiction of Puskesmas Jabiren. Although outreach activities are conducted in geographically dispersed communities, healthcare workers apply the same registration process, examination sequence, and reporting mechanism at every service location. Such procedural consistency supports equal access to healthcare services while maintaining uniform service standards throughout the implementation area.

Beyond administrative procedures, the effectiveness of the bureaucratic structure is also reflected in the clear distribution of responsibilities among implementing actors. Puskesmas Jabiren functions as the principal implementing institution responsible for operational planning, scheduling outreach activities, assigning healthcare personnel, supervising service delivery, and submitting program reports to the district health office. Healthcare workers conduct medical examinations, provide health education, record participant information, and upload service data through the ASIK application. Village governments facilitate implementation by providing venues, logistical support, and community mobilization, while village health cadres assist healthcare workers with participant registration, health promotion, and service coordination at the community level.

A key informant described the organizational arrangement as follows:

“Two healthcare workers are assigned to each integrated health post to conduct the examinations, while all service data are recorded through the ASIK application.” (Key informant, interview, October 14, 2025)

This division of responsibilities demonstrates a complementary implementation model in which each stakeholder performs specific tasks according to institutional authority and professional competence. Rather than creating overlapping responsibilities, the organizational structure encourages collaboration among different actors while maintaining clear lines of accountability.

The role of village health cadres represents an important component of this bureaucratic arrangement. Healthcare workers explained that village governments recruit local cadres who receive guidance from the community health center before participating in outreach activities.

“The village government recruits local health cadres to assist us during the implementation of the program.” (Healthcare worker, interview, October 18, 2025)

The participation of community health cadres strengthens the implementation process because they possess detailed knowledge of local communities and maintain close relationships with residents. Their involvement facilitates participant mobilization, improves communication between healthcare providers and beneficiaries, and enables healthcare workers to concentrate on clinical examinations. This collaborative approach illustrates the integration of formal bureaucratic structures with community-based participation, thereby increasing both implementation efficiency and public acceptance of the program.

The findings also indicate that the bureaucratic structure remains sufficiently flexible to respond to operational challenges encountered during implementation. Healthcare workers reported that technical problems, such as temporary shortages of medical supplies or equipment malfunction, were generally addressed immediately without disrupting service delivery. Community members similarly acknowledged that although equipment occasionally became unavailable, healthcare workers adapted quickly to ensure that examinations continued whenever possible.

Such operational flexibility demonstrates that standardized procedures do not prevent local adaptation. Instead, implementing personnel exercise limited administrative discretion to respond to unforeseen field conditions while remaining within the overall policy framework. This balance between procedural standardization and operational flexibility is particularly important in rural settings, where geographical conditions and infrastructure limitations frequently require practical adjustments during service delivery.

These findings support Edward III's argument that bureaucratic effectiveness depends not only on formal organizational structures but also on the ability of implementing agencies to coordinate responsibilities efficiently and adapt to contextual challenges. Similar conclusions have been reported by Suprayitno et al. (2026), who found that clearly defined organizational roles and effective interinstitutional coordination improve the implementation of public service programs at the local level. Likewise, Ferriyanto (2026) argues that institutional coordination and administrative clarity strengthen governance by reducing implementation uncertainty and enhancing organizational accountability.

Overall, the bureaucratic structure supporting the implementation of the CKG Program in Saka Kajang Village demonstrates several institutional strengths. Standard operating procedures are clear and easily understood by both implementers and participants, organizational

responsibilities are distributed systematically among relevant stakeholders, and coordination mechanisms facilitate efficient service delivery across multiple administrative levels. The integration of community health cadres into the implementation process further enhances bureaucratic capacity by expanding outreach while maintaining community engagement. Although operational challenges remain, particularly concerning resource limitations, the existing bureaucratic structure provides a stable institutional foundation for implementing preventive healthcare services. These findings indicate that clear organizational arrangements, standardized procedures, and collaborative governance constitute essential institutional conditions for sustaining the effectiveness of the CKG Program in rural communities.

3.8 Discussion

The findings of this study demonstrate that the implementation of Indonesia's Free Health Check (CKG) Program in Saka Kajang Village has generally been effective despite several operational constraints. Using Edward III's policy implementation framework, this study shows that communication, resources, disposition, and bureaucratic structure collectively influence the effectiveness of program implementation. Rather than operating independently, these four dimensions interact dynamically, creating both opportunities and constraints that shape policy outcomes at the local level. The findings therefore reinforce Edward III's proposition that successful policy implementation depends on the simultaneous functioning of multiple institutional factors rather than the strength of a single implementation variable.

Communication emerged as one of the strongest determinants of implementation success. The hierarchical transmission of policy from the Ministry of Health to the district government, community health center, village government, and community health cadres ensured that policy objectives were consistently understood by implementing actors. The use of regular coordination meetings, village outreach, and community-based communication contributed to relatively high community participation in the program. These findings support Edward III's argument that clear and consistent communication minimizes implementation ambiguity and strengthens policy compliance. Similar conclusions have been reported by Suprayitno et al. (2026), who found that effective communication among implementing institutions improves policy coordination and enhances public participation in government programs. The present study extends these findings by demonstrating that interpersonal communication through village governments and community health cadres remains more influential than digital communication in rural communities where face-to-face interaction continues to be the dominant channel for information exchange.

Although communication functioned effectively, the implementation process remained constrained by resource limitations. Human resources, financial support, medical equipment, and digital infrastructure were insufficient to fully support the increasing demand for preventive healthcare services. Healthcare workers frequently experienced staff shortages

during outreach activities, while the availability of diagnostic equipment was limited because the program did not receive a dedicated operational budget. Furthermore, although the ASIK digital reporting system improved administrative efficiency, limited digital literacy among elderly participants required healthcare workers to manually register participants before entering data into the system. These findings indicate that digital transformation alone cannot improve policy implementation unless accompanied by adequate human capacity and technological accessibility. Similar observations have been reported in studies of digital public administration, which emphasize that technological innovation should be supported by institutional readiness and user capability to generate meaningful improvements in public service delivery.

The findings also reveal that resource constraints have been partially compensated through collaborative governance involving multiple stakeholders. Village governments provide logistical support by purchasing examination materials, preparing service locations, and encouraging community participation. Community health cadres assist healthcare workers during outreach activities, allowing limited medical personnel to serve larger numbers of participants. This collaborative arrangement demonstrates that local institutional capacity can compensate for limitations in central government funding. From the perspective of collaborative governance, the implementation of the CKG Program illustrates how local governments, healthcare institutions, and community organizations jointly contribute to policy implementation. Consequently, the effectiveness of the program depends not only on government resources but also on the ability to mobilize community participation and local institutional support.

Another important finding concerns the disposition of policy implementers. Healthcare workers consistently demonstrated positive attitudes, professional commitment, and strong motivation despite receiving relatively limited financial incentives. Community members repeatedly described healthcare workers as friendly, responsive, and willing to explain health conditions clearly, indicating that interpersonal trust has become an important component of program effectiveness. These findings support Edward III's proposition that implementers' commitment significantly influences policy outcomes because positive attitudes encourage greater responsiveness to community needs. At the same time, the findings suggest that intrinsic motivation currently plays a greater role than financial incentives in sustaining service delivery. While this reflects the professionalism of healthcare workers, long-term dependence on intrinsic motivation alone may not be sustainable if operational workloads continue to increase without corresponding institutional support. Increasing transportation allowances, improving working conditions, and providing opportunities for continuous professional development would therefore strengthen both employee motivation and program sustainability.

The bureaucratic structure supporting the CKG Program also contributes positively to

implementation effectiveness. Standard operating procedures are clearly defined, participant registration is relatively simple, and responsibilities are distributed systematically among the Ministry of Health, district health authorities, community health centers, village governments, healthcare workers, and community health cadres. This organizational arrangement reduces role ambiguity and facilitates coordination across multiple administrative levels. The findings therefore confirm Edward III's argument that clearly defined bureaucratic structures improve implementation consistency by establishing transparent organizational responsibilities and operational procedures. However, the study also demonstrates that bureaucratic effectiveness depends not only on procedural standardization but also on institutional flexibility. Healthcare workers frequently adjusted service delivery schedules in response to flooding, village activities, and temporary shortages of medical supplies without disrupting overall program implementation. This adaptive capacity suggests that flexible implementation mechanisms are particularly important for public health programs operating in geographically dispersed rural areas.

An important contribution of this study lies in demonstrating the interdependence of the four implementation dimensions. Communication supports the effective utilization of resources by improving coordination among implementing actors. Adequate resources strengthen the motivation of healthcare workers by reducing operational constraints. Positive disposition encourages implementers to maximize available resources despite financial limitations. Meanwhile, an effective bureaucratic structure provides institutional mechanisms through which communication, resources, and implementer commitment can operate efficiently. This interaction suggests that weaknesses in one implementation dimension may be compensated temporarily by strengths in another dimension. For example, limited financial resources in Saka Kajang Village have been partially offset through strong collaboration between healthcare workers, village governments, and community health cadres. Nevertheless, such compensatory mechanisms should not replace systematic government investment because they rely heavily on local institutional commitment that may vary across regions.

Compared with previous studies, the present research contributes new empirical evidence regarding the implementation of Indonesia's Free Health Check Program at the village level. Existing studies have primarily focused on national policy objectives, program coverage, or preventive healthcare outcomes, while providing limited analysis of implementation processes within local administrative settings. By examining the interaction between communication, resources, disposition, and bureaucratic structure, this study offers a more comprehensive understanding of how national health policies are translated into local practice. The findings therefore extend Edward III's implementation framework by illustrating how community participation and village-level institutional support enhance policy implementation within decentralized public health systems.

The practical implications of this study are equally important. First, strengthening human

resources through additional healthcare personnel and continuous professional training would improve service quality and reduce workload pressures. Second, increasing operational funding and expanding the availability of medical equipment would enhance the comprehensiveness of health examinations. Third, improving digital literacy among community members, particularly older adults, would maximize the benefits of the ASIK and Satu Sehat applications while reducing administrative burdens on healthcare workers. Finally, institutionalizing collaboration between community health centers, village governments, and community health cadres would strengthen local implementation capacity and improve the sustainability of preventive healthcare programs.

Overall, this study demonstrates that the successful implementation of the CKG Program cannot be explained by a single implementation factor. Instead, policy effectiveness emerges from the interaction of communication, resources, disposition, and bureaucratic structure within specific local contexts. Although significant challenges remain, particularly regarding human resources, operational funding, and medical infrastructure, the commitment of healthcare workers, strong community participation, and collaborative local governance have enabled the program to function effectively in Saka Kajang Village. These findings contribute to the growing literature on policy implementation by providing empirical evidence from rural Indonesia and offer practical recommendations for strengthening the implementation of preventive public health policies in decentralized governance systems.

4. Conclusion

The implementation of excise taxes on high-sodium packaged foods in Indonesia represents a strategic step to address the public health issues faced by the population. This study finds that excessive sodium consumption is a major contributing factor to the high prevalence of hypertension and cardiovascular diseases, with many age groups exceeding the recommended intake limits set by the WHO. Based on successful examples from several countries, such fiscal policies have proven effective in reducing sodium intake and improving public health outcomes. The estimated potential state revenue of IDR 8.57 trillion indicates that, in addition to the health benefits, there are significant economic gains that can be allocated to health and social programs. Strict supervision and producer compliance with sodium content standards are essential to ensure the effectiveness of this excise policy.

To support the successful implementation of this excise policy, the government should conduct intensive educational and public awareness campaigns to increase consumer understanding of the dangers of excessive sodium consumption and the importance of choosing healthier food options. Additionally, an effective monitoring system is necessary to ensure that producers comply with the established standards, alongside clear penalties and sanctions for non-compliance. Providing incentives for product reformulation and innovation to reduce sodium content is also critical. Furthermore, revenue from the excise tax should be allocated to fund preventive health programs and the treatment of non-communicable

diseases. Further research is required to assess the long-term impact of this policy on public health and the national economy, as well as to ensure that the policy remains relevant and effective over time.

This study also has certain limitations. The data on sodium consumption may not fully cover all population groups and food types, which could affect the accuracy of the estimated excise revenue and the anticipated health impacts. The implementation of this policy also requires an effective monitoring system and a high level of compliance from food producers, which may present practical challenges in the future. Overall, based on the findings of this study, a comprehensive and collaborative strategic approach involving various stakeholders is essential to ensure the successful implementation of excise taxes on high-sodium packaged foods. This represents an important step toward achieving a healthy and long-lived golden generation for Indonesia.

5. Ethics Approval

Ethical approval was obtained prior to data collection. All participants were informed about the purpose and procedures of the study and participated voluntarily. Informed consent was obtained from participants before the interviews were conducted. The confidentiality and privacy of participants were maintained throughout the research and reporting process. Personal information was not disclosed in the presentation of the findings.

6. Author Contributions

Nural Achmad Raainaa contributed to the conceptualization, methodology, data collection, data analysis, and preparation of the original manuscript. Anisa Rahmawati contributed to the conceptualization, methodology, data analysis, and review and editing of the manuscript. Agnes Novita Mega Putri Santoso contributed to data collection, data analysis, and review and editing of the manuscript. Ichwanto Yusro contributed to supervision, review and editing of the manuscript, and project administration. All authors reviewed and approved the final version of the manuscript for publication.

7. Declaration on the Use of AI and AI-Assisted Technologies in Writing

The authors declare that AI-assisted technologies were used during the preparation of this manuscript for language editing, grammar checking, and improving the clarity and readability of the text. The use of AI-assisted technologies was limited to supporting the writing process and did not replace the authors' responsibility for the research design, data collection, data analysis, interpretation of findings, and conclusions. The authors reviewed and verified all content generated or modified with the assistance of AI and take full responsibility for the accuracy, originality, and integrity of the manuscript.

8. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this manuscript.

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11. Data Availability Statement

The data supporting the findings of this study are not publicly available due to privacy and confidentiality considerations concerning the research participants. Data may be made available from the corresponding author upon reasonable request, subject to applicable ethical and confidentiality requirements.

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