

Implementation of Fuel Subsidy Policy and Its Implications for the State Budget

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ABSTRACT

Purpose: This study evaluates the implementation of fuel subsidy policies in Indonesia and examines their implications for the sustainability of the State Budget (APBN) from the perspectives of fiscal efficiency and social protection.

Research Method: A descriptive qualitative approach was employed using documentation studies and literature review. Data were collected from official government documents, including APBN Financial Notes, Central Government Financial Reports (LKPP), BPK audit reports, fuel subsidy regulations, and empirical studies published between 2022 and 2025. Data were analyzed inductively using Mazmanian and Sabatier's policy implementation framework.

Results and Discussion: The findings indicate that fuel subsidy implementation remains constrained by targeting inaccuracies, institutional limitations, unequal digital access, and vulnerability to fluctuations in global oil prices and exchange rates. The effectiveness of digital monitoring systems and quota mechanisms depends on institutional readiness, data quality, and inter-agency coordination.

Implications: Strengthening beneficiary databases, institutional coordination, and fiscal governance is essential for improving subsidy effectiveness and sustainability.

Originality: This study operationalizes Mazmanian and Sabatier's framework to explain how legal structures, institutional capacity, target-group characteristics, and external conditions shape the implementation of fuel subsidies in Indonesia.

Keywords: fuel subsidy; policy evaluation; APBN; fiscal efficiency; policy implementation.

1. Introduction

Energy is a vital instrument in the Indonesian economy, with fuel oil (Bahan Bakar Minyak/BBM) remaining a key component driving the transportation and industrial sectors. The government has implemented a fuel subsidy policy to maintain consumer affordability and protect public purchasing power. However, reliance on open-ended subsidies often creates a dilemma between the social protection function and efforts to maintain overall macroeconomic stability. Historically, fuel subsidy

allocation has been one of the largest expenditure components in the State Budget (Anggaran Pendapatan dan Belanja Negara/APBN). Fluctuations in global crude oil prices and the dynamic rupiah exchange rate often cause the subsidy budget to swell beyond the established ceiling. This triggers severe fiscal pressure, as funds that should be allocated for infrastructure development or the education sector are instead absorbed to cover the energy price gap. Akimaya & Dahl (2022) reported that fuel subsidies accounted for approximately 15% of total government expenditures in Indonesia, highlighting the magnitude of fiscal resources devoted to maintaining domestic energy affordability. Furthermore, Dano (2022) documented that subsidy allocations increased dramatically from Rp170 trillion to Rp520 trillion following the Russia–Ukraine conflict, reflecting the vulnerability of Indonesia's fiscal position to external energy shocks.

A major recurring problem with this policy is inaccurate distribution targeting. Various data indicate that the majority of subsidy benefits are enjoyed by the upper-middle class who own private vehicles, rather than the lower-class groups who are the primary target. This phenomenon creates social inequality and budgetary inefficiency, making a comprehensive evaluation of the subsidy policy's effectiveness urgent. Sampe (2023) found that fuel subsidy benefits were disproportionately captured by higher-income households, suggesting that universal price subsidies tend to generate regressive distributional outcomes. Similarly, Putra *et al.*, (2025) concluded that fuel subsidy policies have not been implemented effectively or efficiently because poorer households receive substantially smaller benefits compared with middle- and upper-income groups.

Uncontrolled fuel subsidy schemes also generate long-term fiscal vulnerabilities. When international crude oil prices rise sharply, governments are often forced to increase subsidy allocations beyond the planned ceiling, thereby widening fiscal deficits and reducing budget flexibility. This condition creates difficult policy trade-offs between maintaining price stability and preserving fiscal sustainability. Akhmadi *et al.*, (2023) demonstrated that fuel price adjustments may contribute to rising inflation, poverty, and unemployment, whereas maintaining universal subsidies may intensify budgetary inefficiencies. Consequently, evaluating fuel subsidy policies requires balancing social protection objectives with prudent fiscal management.

Previous studies consistently show that fuel subsidy policies impose substantial fiscal burdens on governments. Akimaya & Dahl (2022) reported that fuel subsidies accounted for approximately 15% of total government expenditure in Indonesia. Similarly, Dano (2022) documented a sharp increase in subsidy allocations from Rp170 trillion to Rp520 trillion following the Russia–Ukraine conflict. Harmono (2022) further highlighted that the Indonesian government redirected Rp502.4 trillion through Presidential Regulation No. 98 of 2022 to accommodate rising energy expenditures. These findings indicate that fuel subsidies remain highly vulnerable to global energy price fluctuations and exchange rate movements, creating persistent pressure on the APBN.

Beyond fiscal concerns, previous studies have questioned the distributive effectiveness of fuel subsidies. Stefanus Sampe (2023) found that the majority of subsidy benefits accrued to middle- and upper-income households rather than low-income households, indicating significant targeting failures. Putra *et al.*, (2025) similarly concluded that fuel subsidy policies have been ineffective and inefficient because poorer households receive disproportionately smaller benefits. Moreover, Akhmadi *et al.*, (2023) demonstrated that fuel price increases could contribute to rising poverty, unemployment, and inflation. These findings reveal the complex trade-offs associated with subsidy reforms, whereby maintaining subsidies creates fiscal inefficiencies, while reducing them may adversely affect vulnerable populations.

Although previous studies have generated important insights into the fiscal consequences and distributional shortcomings of fuel subsidies, most have focused either on macroeconomic impacts or on welfare implications in isolation. Existing research has largely focused on measuring budgetary pressures, inflationary effects, or poverty outcomes without systematically evaluating how policy implementation factors influence subsidy effectiveness. Studies on subsidy reform also tend to emphasize the normative recommendation to shift from commodity-based subsidies to direct assistance programs, without critically examining whether existing institutional arrangements can support such transformations. Consequently, limited attention has been devoted to assessing fuel subsidy reforms through a comprehensive public policy evaluation perspective that incorporates institutional readiness, regulatory capacity, target-group behavior, and external socioeconomic conditions.

From a theoretical perspective, studies examining fuel subsidy implementation rarely operationalize public policy implementation frameworks to explain why inefficiencies and mistargeting persist despite repeated regulatory adjustments. In particular, the policy implementation model developed by Mazmanian and Sabatier, which emphasizes the importance of legal structure, institutional capacity, target-group characteristics, and external conditions, has seldom been employed to evaluate Indonesia's fuel subsidy policies. Empirically, there remains limited evidence integrating fiscal sustainability concerns with policy implementation effectiveness within a single analytical framework. This gap restricts understanding of whether current policy instruments genuinely support both social equity objectives and long-term budget discipline.

Based on these gaps, this study seeks to answer the following research question: How effective is the implementation of Indonesia's fuel subsidy policy in achieving fiscal sustainability and social targeting objectives? Accordingly, this study aims to evaluate fuel subsidy policies using the public policy implementation framework developed by Mazmanian and Sabatier. The novelty of this research lies in integrating fiscal sustainability analysis with a systematic evaluation of policy implementation dimensions, including regulatory arrangements, institutional capacity, target-group behavior, and external contextual factors. By doing so, this study extends previous discussions that have predominantly focused on either fiscal implications or welfare outcomes in isolation, thereby providing a more comprehensive understanding of fuel subsidy reform in Indonesia. The findings of this study are expected to contribute to the development of more adaptive, equitable, and fiscally sustainable energy subsidy policies.

The remainder of this paper is organized as follows. The next section describes the research methods, including document selection procedures, analytical techniques, and triangulation strategies employed in this study. The subsequent section presents the findings and discussion based on the Mazmanian and Sabatier policy implementation framework. Finally, the last section summarizes the main conclusions, outlines policy implications, and proposes directions for future research.

The remainder of this paper is organized as follows. Section 2 provides a literature review and hypothesis development. Section 3 presents the research method and design. Section 4 provides the results and discussion. Section 5 is Concluding Remarks and Recommendations.

2. Literature Review and Hypothesis Development

2.1 Public Policy Evaluation Theory

Public policy evaluation is a systematic process for assessing the extent to which a policy achieves its intended objectives and identifying factors that influence its implementation and outcomes. Contemporary policy evaluation has evolved beyond merely measuring program effectiveness to encompass broader dimensions, including implementation quality, institutional capacity, stakeholder behavior, equity considerations, and policy learning. Jacob (2024) emphasizes that modern policy evaluation faces increasingly complex challenges due to dynamic policy environments, competing stakeholder interests, and the difficulty of directly attributing observed outcomes to specific interventions. In this context, evaluation should not only focus on whether a policy works but also examine how and under what conditions it produces particular outcomes. Fierro *et al.*, (2022) further argue that the effectiveness of policy evaluation depends heavily on the quality of implementation, as even well-designed policies may fail to achieve their objectives when implementation processes are inadequate. Similarly, Purtle *et al.*, (2023) explain that policies should be understood as dynamic implementation processes shaped by interactions among institutions, target populations, and broader contextual factors.

One of the most influential approaches in implementation evaluation is the framework developed by Mazmanian and Sabatier, which highlights the importance of legal structures, institutional arrangements, target-group characteristics, and external socioeconomic conditions in determining implementation success. This perspective remains relevant in contemporary evaluation studies because it provides a multidimensional understanding of why policies often perform differently from their original intentions. Sager & Gofen (2022) reaffirm that organizational structures and institutional capacity are critical determinants of implementation effectiveness, particularly in complex policy environments involving multiple actors and administrative levels. In addition, Wendt *et al.*, (2023) recommend that implementation evaluations systematically assess fidelity, reach, adaptation processes, and contextual influences to generate more meaningful evidence regarding policy performance. Whitsel *et al.*, (2024) further argue that policy evaluation should explicitly incorporate equity considerations to determine whether policy outcomes are distributed fairly across different social groups. Beyond accountability functions, evaluation also serves as a mechanism for policy learning by generating feedback that supports continuous improvement and adaptive governance. Dotti *et al.*, (2024) demonstrate that formal evaluation requirements can stimulate learning processes that strengthen future policy formulation and implementation. Accordingly, this study employs the Mazmanian and Sabatier framework as an analytical lens to evaluate fuel subsidy policies by examining regulatory arrangements, institutional readiness, target-group behavior, and external conditions that shape the effectiveness of policy implementation in achieving fiscal sustainability and social objectives.

2.2 The Concept of Subsidies and Income Redistribution

Subsidies are among the government's fiscal instruments designed to enhance social welfare, stabilize prices, and improve access to essential goods and services, particularly for vulnerable groups. In the context of energy policy, fuel subsidies are generally intended to protect household purchasing power and support economic activities by maintaining affordable energy prices. However, the effectiveness of subsidies as a redistributive mechanism depends largely on the accuracy of their targeting and the

extent to which benefits reach the intended beneficiaries. Yuniza *et al.*, (2023) argue that fuel subsidy policies in Indonesia have frequently encountered regulatory and implementation challenges that weaken their distributive function and undermine social justice objectives. Similarly, Abimanyu & Imansyah (2023) found that fuel and liquefied petroleum gas (LPG) subsidies in Indonesia tend to be regressive, as a larger share of the benefits accrues to higher-income households with higher energy consumption. This finding indicates that commodity-based subsidies may not automatically serve as effective redistribution instruments, despite being introduced on the rationale of protecting lower-income populations. Furthermore, ACTION (2024) emphasizes that universal energy subsidies often create inefficiencies and inequitable outcomes because wealthier households generally consume more subsidized energy than poorer households. Consequently, the concept of subsidies has increasingly shifted from broad price interventions toward targeted assistance mechanisms that prioritize eligible recipients based on socioeconomic conditions.

From the perspective of income redistribution, subsidy policies should be evaluated not only on their ability to reduce short-term economic burdens but also on their implications for poverty, inequality, and long-term welfare. Bobasu *et al.*, (2025) demonstrate that energy price shocks may exacerbate income inequality across ASEAN countries, suggesting that energy-related policies have important distributive consequences. Nevertheless, the transition from universal subsidies to targeted compensation schemes also presents substantial challenges. Al Izzati *et al.*, (2023) show that reductions in fuel subsidies can increase poverty and inequality in the short term if not accompanied by effective, well-targeted social protection programs. In addition, Joshaghani *et al.*, (2024) show that fuel subsidies may unintentionally affect regional income distribution through market distortions and cross-border smuggling, thereby reducing the efficiency of redistributive efforts. Poggiese & Ibañez Martin (2024) further argue that different subsidy designs produce varying distributional effects and levels of energy poverty, highlighting the importance of appropriate targeting mechanisms in subsidy reform initiatives. Therefore, the concept of subsidies within the framework of income redistribution should be understood not merely as a price-stabilization policy but as a strategic instrument that requires careful design, accurate beneficiary identification, and effective implementation to ensure that fiscal resources meaningfully reduce inequality and enhance social welfare.

2.3 State Budget (APBN) and Fiscal Efficiency

The State Budget (Anggaran Pendapatan dan Belanja Negara/APBN) serves as a strategic fiscal instrument through which the government performs allocation, distribution, and stabilization functions to support national development objectives and maintain macroeconomic resilience. Beyond financing public expenditure, the APBN plays an essential role in responding to economic shocks, protecting vulnerable populations, and sustaining economic recovery during periods of uncertainty. Indrawati *et al.*, (2024) emphasize that fiscal policy in Indonesia has become increasingly important in the post-pandemic era, requiring governments to balance economic stimulus efforts with the need to preserve long-term fiscal sustainability. Within this framework, fiscal efficiency refers to the government's ability to allocate limited public resources to maximize social welfare while minimizing waste, distortions, and unnecessary budgetary burdens. Muda *et al.*, (2025) argue that improving fiscal efficiency requires strengthening the quality of expenditure, enhancing budget discipline, and ensuring that public spending priorities align with development objectives. Consequently, the effectiveness of the APBN cannot be assessed solely by the magnitude of expenditure realization but must also consider whether

government spending generates optimal social and economic benefits. This perspective highlights the importance of evaluating the opportunity costs of various spending programs, particularly those involving large, persistent subsidy allocations.

In the context of energy policy, fuel subsidies are among the most significant factors affecting the efficiency and sustainability of the APBN. Although subsidies are often justified as instruments to protect purchasing power and maintain economic stability, their implementation may impose substantial fiscal pressures when not supported by effective targeting mechanisms. Putra *et al.*, (2025) demonstrate that fuel subsidies have contributed considerably to the structure of Indonesia's public expenditure, thereby limiting the government's fiscal flexibility to finance more productive sectors. Similarly, Yan *et al.*, (2023) note that excessive energy subsidy allocations can reduce fiscal space for investments in infrastructure, education, and social development. Huber & Scharrer (2024) further argue that poorly targeted energy subsidies may impose intergenerational fiscal burdens because future taxpayers ultimately bear the costs of maintaining inefficient subsidy schemes. In addition, fluctuations in global energy prices may weaken fiscal capacity by increasing government expenditure requirements, particularly in countries heavily dependent on energy subsidies (Savelli *et al.*, 2023). This situation underscores the importance of designing subsidy policies that balance social protection objectives with fiscal prudence. Cherniaieva *et al.*, (2025) emphasize that improving the effectiveness of budget allocations in the energy sector requires gradual reforms to enhance targeting accuracy and redirect expenditure toward more sustainable development priorities. Therefore, fiscal efficiency within the APBN framework should be understood as the government's capacity to optimize public spending, ensure equitable resource distribution, and maintain fiscal sustainability amidst evolving economic challenges.

2.4 Macroeconomic Impact and Inflation

Macroeconomic stability is closely linked to developments in the energy sector because fluctuations in energy prices can influence inflation, household purchasing power, production costs, and overall economic performance. Inflation, defined as a sustained increase in the general price level, is particularly sensitive to fuel price changes because energy is a fundamental input for transportation, manufacturing, and distribution. Consequently, fuel subsidy policies are frequently employed to mitigate inflationary pressures stemming from global energy market volatility. However, the effectiveness of such policies remains debated because subsidies that successfully suppress short-term inflation may simultaneously create fiscal distortions and inefficiencies. Kpodar & Liu (2022) found that increases in fuel prices significantly contribute to higher inflation rates in Indonesia, highlighting the strong transmission mechanism between domestic fuel prices and consumer prices. Similarly, Lee & Hussain (2023) demonstrated that global energy price shocks, including fluctuations in crude oil, natural gas, and coal prices, exert asymmetric effects on Indonesia's inflation dynamics. These findings suggest that inflationary pressures in Indonesia are influenced not only by domestic policy decisions but also by developments in international energy markets. Moreover, maintaining macroeconomic stability amid inflationary pressures requires effective coordination between fiscal interventions and monetary policy, particularly through central bank measures to control inflation expectations and preserve economic confidence (Yani, 2024).

The macroeconomic implications of fuel subsidy reforms extend beyond inflation control to encompass poverty, inequality, and economic resilience. Al Izzati *et al.*, (2023) revealed that fuel price

increases resulting from subsidy reductions may adversely affect low-income households by reducing purchasing power and increasing poverty levels, particularly when compensatory social protection mechanisms are inadequate. Moreover, Harrison & Segelhorst (2024) found that oil market shocks can elevate consumer prices through rising production costs and labor market adjustments, thereby amplifying inflationary pressures across multiple sectors. Kpodar & Liu (2022) further showed that energy price increases have heterogeneous effects on disaggregated inflation components, with transportation and housing expenditures being among the most affected categories. In the broader policy context, Aguila & Wullweber (2024) introduced the concept of fossilflation, referring to inflation driven by structural dependence on fossil fuels and persistent energy price volatility. Meanwhile, Auclert *et al.*, (2023) argued that the persistence of inflation following energy shocks depends largely on the interaction between external disturbances and domestic policy responses, particularly fiscal and monetary stabilization measures. Therefore, understanding the macroeconomic impact of fuel subsidy policies requires a comprehensive approach that balances inflation management, fiscal sustainability, and social protection objectives. Such an approach is essential to ensure that energy policies not only safeguard short-term price stability but also contribute to inclusive and sustainable economic development.

3. Research Method

This research uses a descriptive qualitative approach to examine fuel subsidy policies and their implications for the structure and sustainability of the State Budget (Anggaran Pendapatan dan Belanja Negara/APBN). Data were collected through documentation studies and an in-depth literature review (library research) focusing on fuel subsidy policies and their fiscal implications in Indonesia during the 2022–2025 period. The documentary sources consisted of official government publications, including State Budget Financial Notes (Nota Keuangan APBN), Central Government Financial Reports (Laporan Keuangan Pemerintah Pusat/LKPP), Supreme Audit Agency (Badan Pemeriksa Keuangan/BPK) audit reports, regulations related to fuel subsidies issued by the Government of Indonesia, reports from the Ministry of Finance and BPH Migas, as well as peer-reviewed scientific articles discussing subsidy reforms and fiscal sustainability. The period 2022–2025 was selected because it captures major developments in Indonesia's fuel subsidy policies following the global energy price shocks associated with the Russia–Ukraine conflict.

The inclusion criteria for documentary sources were as follows: (1) documents directly related to fuel subsidy policies and fiscal management; (2) official reports published by authorized government institutions; (3) scientific articles published between 2022 and 2025 in indexed journals; and (4) sources containing information relevant to policy implementation, budgetary consequences, and distributional outcomes. Documents lacking institutional authority, empirical evidence, or direct relevance to the research objectives were excluded from the analysis. This qualitative approach enabled the researchers to critically examine policy dynamics while assessing the extent to which fuel subsidy policies achieved fiscal efficiency and social protection objectives.

Data analysis was conducted inductively using the stages of data reduction, data display, and conclusion drawing. During the coding process, documentary evidence was systematically categorized according to the policy implementation dimensions proposed by Mazmanian and Sabatier, namely: (1) legal and regulatory structures governing fuel subsidies, (2) institutional capacity of implementing

agencies, (3) characteristics and behavior of target groups, and (4) external socioeconomic conditions influencing policy outcomes. The use of this framework facilitated a structured evaluation of implementation challenges, including targeting inaccuracies, budget inefficiencies, exclusion errors, digital access disparities, and public resistance toward subsidy reforms.

To enhance the credibility of the findings, source triangulation was employed by comparing information obtained from multiple documentary sources, including Ministry of Finance reports, BPK audit findings, BPH Migas publications, and empirical studies conducted by independent researchers and academic institutions. Cross-source verification was undertaken to identify inconsistencies and strengthen the reliability of interpretations regarding the fiscal and social implications of fuel subsidy policies. Through this process, the study's conclusions were expected to provide a comprehensive, evidence-based understanding of the relationship between fuel subsidy implementation and the health of the APBN.

4. Results and Discussion

4.1 Analysis Results

Based on the analysis of government policy documents, State Budget (APBN) reports, audit reports issued by the Supreme Audit Agency (BPK), and various empirical studies related to fuel subsidy implementation in Indonesia during the 2022–2025 period, this study identified four major findings concerning the implementation of fuel subsidy policies and their implications for fiscal sustainability. Unlike previous studies that primarily emphasized the fiscal consequences or distributional effects of fuel subsidies, the present study evaluates policy implementation using the analytical dimensions proposed by Mazmanian and Sabatier: legal structure, institutional capacity, target-group characteristics, and external conditions. Through this framework, the findings provide a more comprehensive understanding of how implementation dynamics influence the effectiveness of fuel subsidy policies in achieving both social protection and fiscal efficiency objectives.

4.1.1 Legal Structure and Policy Design

The findings indicate that the government has developed several policy instruments to regulate subsidized fuel distribution, including Retail Price Regulation (Harga Eceran Tertinggi/HET), quota mechanisms, subsidy refocusing, and digital-based monitoring systems. Retail Price Regulation functions as a strategic instrument to stabilize domestic fuel prices amid fluctuations in global crude oil markets. By maintaining diesel and Pertalite prices below their economic value, the government seeks to protect household purchasing power and prevent sudden increases in transportation and logistics costs that could trigger broader inflationary pressures. Within Indonesia's economic structure, fuel prices are an important component of administered prices; therefore, maintaining price stability helps preserve business confidence and macroeconomic stability.

However, the documentary analysis reveals that the existing regulatory framework remains highly dependent on annual fiscal conditions and external economic developments. When international oil prices rise substantially, or the rupiah depreciates against the US dollar, the subsidy burden increases automatically, compelling the government to make periodic policy adjustments. This condition indicates that although the legal framework provides flexibility to respond to economic shocks, it has not fully resolved the tension between maintaining social protection objectives and ensuring fiscal sustainability.

Furthermore, the transition toward targeted subsidy mechanisms continues to face regulatory challenges, as the legal basis for integrating subsidy eligibility criteria into nationally standardized beneficiary databases remains limited.

The findings also show that the quota and restriction system has become an essential mechanism for maintaining fuel consumption within the fiscal limits established in the APBN. Annual fuel consumption ceilings are jointly determined by the government and the House of Representatives (DPR) and subsequently distributed by BPH Migas. The use of quotas aims to prevent excessive consumption that could result in unplanned increases in subsidy expenditures during the fiscal year. Nevertheless, the effectiveness of this mechanism remains vulnerable to weaknesses in monitoring and data verification processes at the retail level, suggesting that regulatory arrangements alone are insufficient to guarantee policy effectiveness.

4.1.2 Institutional Capacity and Digital Transformation

The study further found that institutional capacity significantly influences the implementation outcomes of fuel subsidy policies. The involvement of multiple institutions, including the Ministry of Finance, BPH Migas, Pertamina, local governments, and law enforcement agencies, reflects the complexity of fuel subsidy governance in Indonesia. To improve accountability and reduce leakage, the government has introduced several digital innovations, including the MyPertamina application and QR Code verification systems, which transform fuel distribution from an open-access model into a more controlled, data-driven process.

Through these digital instruments, eligible beneficiaries must register vehicle information and ownership details before accessing subsidized fuel. Every transaction is recorded electronically, allowing authorities to monitor purchasing volumes, transaction frequencies, and distribution patterns in real time. The findings suggest that digitalization has strengthened transparency and enhanced the government's monitoring capacity by facilitating the identification of abnormal consumption patterns and potential misuse of subsidized fuel.

Despite these improvements, the analysis also identified several institutional limitations that constrain implementation effectiveness. First, data integration among implementing institutions remains incomplete, increasing the risk of duplication, inconsistencies, and administrative inefficiencies. Second, unequal digital infrastructure and disparities in technological literacy across regions may hinder equitable access to subsidy programs. Third, reliance on technology-based verification systems introduces new forms of exclusion for individuals with limited digital capabilities. These findings indicate that the effectiveness of digital instruments depends not only on technological sophistication but also on institutional readiness, inter-agency coordination, and the adaptive capacity of intended beneficiaries.

4.1.3 Target Group Characteristics and Distributional Challenges

The findings demonstrate that the characteristics and behavior of target groups constitute critical determinants of fuel subsidy effectiveness. Although subsidized fuel policies are designed primarily to support lower-income households, documentary evidence consistently indicates that a substantial proportion of subsidy benefits has historically been captured by middle- and upper-income groups, who have greater vehicle ownership and higher fuel consumption. This pattern reflects a fundamental

weakness of commodity-based subsidy schemes, whereby access to benefits is determined by consumption behavior rather than socioeconomic status. Consequently, fuel subsidies remain vulnerable to inclusion errors, leading to substantial budget inefficiencies and reduced distributional effectiveness.

In response to these challenges, the government has gradually shifted toward subsidy redirection strategies that prioritize direct assistance mechanisms, including Direct Cash Assistance (BLT), Social Assistance (Bansos), and Wage Subsidy Assistance (BSU). The objective of this policy shift is to improve targeting accuracy and ensure that fiscal resources reach vulnerable populations that are most affected by rising living costs. The findings indicate that this approach has greater potential to strengthen the APBN's distributive function because assistance is directed toward individuals rather than commodities. Nevertheless, the implementation of direct assistance programs remains highly dependent on the quality of beneficiary data. The Integrated Social Welfare Database (DTKS) has become a crucial instrument for identifying eligible recipients; however, the study identified persistent risks of exclusion errors, whereby vulnerable households are omitted from assistance programs, as well as inclusion errors involving ineligible recipients. These challenges suggest that improvements in beneficiary identification systems are essential for ensuring that subsidy reforms effectively promote social equity and protect disadvantaged groups.

4.1.4 External Conditions and Fiscal Vulnerability

The findings further reveal that external economic conditions substantially influence the implementation and sustainability of fuel subsidy policies. Indonesia's dependence on imported crude oil exposes the APBN to fluctuations in international energy markets, geopolitical tensions, and exchange rate volatility. During periods of global uncertainty, such as armed conflicts involving major oil-producing countries, increases in international crude oil prices automatically widen the gap between market prices and regulated domestic prices. Consequently, the government must allocate additional fiscal resources to maintain fuel affordability.

The analysis indicates that this dependence on external factors creates significant fiscal vulnerability because state expenditure becomes increasingly reactive to variables beyond domestic control. Macroeconomic assumptions set at the beginning of the fiscal year often diverge from actual developments in global energy markets, necessitating budget adjustments that may disrupt previously planned expenditure priorities. In addition, exchange rate depreciation amplifies fiscal pressures because international energy transactions are denominated in foreign currencies, thereby increasing import costs in rupiah terms.

The study also identified substantial opportunity costs associated with maintaining large fuel subsidy allocations. Significant portions of the APBN devoted to financing energy subsidies reduce fiscal space available for productive investments in infrastructure, education, healthcare, and poverty alleviation programs. This finding suggests that although fuel subsidies may generate immediate welfare benefits through lower energy prices, excessive dependence on commodity-based subsidies may weaken long-term development capacity by limiting investments in sectors with stronger multiplier effects.

Finally, the findings indicate that the APBN's distribution function has not been fully realized through existing fuel subsidy arrangements. Historical evidence demonstrates that the unequal distribution of subsidy benefits has reduced the effectiveness of public expenditure as a mechanism for

income redistribution. Rather than consistently serving as instruments of social protection, fuel subsidies have often provided greater benefits to better-off households. Therefore, enhancing targeting accuracy and strengthening institutional capacity are necessary to restore the redistributive objectives of fuel subsidy policies and ensure that public resources contribute more effectively to social welfare and fiscal sustainability.

4.2 Discussion

The findings indicate that fuel subsidy policies in Indonesia continue to serve as an important social protection instrument, designed to stabilize household consumption and mitigate inflationary pressures stemming from global energy price volatility. The use of Retail Price Regulation (HET) demonstrates the government's effort to shield vulnerable households from sudden increases in transportation and logistics costs. However, from the perspective of Mazmanian and Sabatier's implementation theory, the existence of legal instruments alone is insufficient to guarantee policy effectiveness. The findings suggest that the regulatory framework remains highly dependent on external economic conditions, particularly fluctuations in international oil prices and exchange rates, which often force the government to undertake repeated policy adjustments. This situation reflects the limited capacity of existing legal structures to balance the competing objectives of fiscal sustainability and social protection.

These findings support the argument advanced by Huber and Runkel (2024), who emphasized that energy subsidy policies may generate substantial fiscal burdens when governments attempt to maintain domestic price stability amid prolonged external shocks. Similarly, Putra *et al.*, (2025) found that fuel subsidy policies in Indonesia continue to place significant pressure on the APBN because subsidy allocations often exceed their original projections. Therefore, the sustainability of fuel subsidies should be evaluated not only on their ability to maintain low fuel prices but also on their implications for long-term fiscal resilience.

The findings also demonstrate that institutional capacity represents a critical determinant of implementation success. The introduction of digital instruments, such as the MyPertamina application and QR Code systems, reflects the government's efforts to strengthen transparency and improve the accountability of subsidy distribution mechanisms. These innovations have enabled authorities to record transactions electronically and identify abnormal consumption patterns more efficiently than conventional monitoring approaches. Nevertheless, the present study found that digitalization does not automatically eliminate implementation challenges. Weak inter-agency data integration, unequal digital infrastructure, and disparities in technological literacy continue to constrain the effectiveness of digital monitoring systems. These findings are consistent with Sager *et al.*, (2022), who argued that institutional arrangements and organizational coordination substantially influence implementation outcomes. Consequently, digital instruments should be viewed as enabling mechanisms rather than definitive indicators of policy success. Their effectiveness depends on the broader institutional environment in which they operate.

Another important finding concerns the characteristics and behavior of target groups. The results suggest that commodity-based fuel subsidies remain vulnerable to inclusion errors because eligibility is determined primarily by consumption behavior rather than socioeconomic conditions. This explains why fuel subsidies frequently benefit middle- and upper-income households, which have greater vehicle ownership and higher fuel consumption. The persistence of such distributional distortions supports the findings of Stefanus Sampe (2023), who concluded that fuel subsidy policies

have failed to prioritize poorer households effectively. Similarly, Abimanyu and Imansyah (2023) demonstrated that fuel subsidies in Indonesia tend to be regressive, with higher-income groups receiving a disproportionate share of the benefits.

The present study extends these previous findings by demonstrating that mistargeting should be interpreted not merely as a distributive problem but also as an implementation challenge stemming from weaknesses in beneficiary identification systems. The continued reliance on the Integrated Social Welfare Database (DTKS), despite its limitations, underscores the importance of maintaining accurate, up-to-date social registries to improve subsidy targeting accuracy. The findings further indicate that subsidy redirection policies, including Direct Cash Assistance (BLT), Social Assistance (Bansos), and Wage Subsidy Assistance (BSU), have greater potential to strengthen the APBN's distributive function. This finding supports the recommendations proposed by the World Bank (2024), which advocate replacing broad commodity subsidies with targeted social protection programs that more effectively reach vulnerable groups. However, the study also suggests that targeted assistance programs are not immune to implementation failures. Exclusion errors, administrative delays, and incomplete beneficiary data continue to limit their effectiveness. Therefore, subsidy refocusing should be accompanied by substantial improvements in social protection governance rather than being viewed as a standalone policy solution.

External conditions emerged as another important determinant influencing subsidy implementation outcomes. Indonesia's dependence on imported crude oil exposes the APBN to international commodity price volatility and geopolitical uncertainty. Consistent with Mazmanian and Sabatier's proposition on the importance of external variables, the findings indicate that global energy shocks substantially shape domestic policy outcomes, regardless of policy design quality. This situation creates a persistent trade-off between maintaining affordable fuel prices and preserving fiscal sustainability. The present findings also correspond with Akhmad *et al.*, (2023), who reported that fuel price increases could intensify inflationary pressures and reduce household welfare. Likewise, Al Izzati *et al.*, (2023) demonstrated that fuel subsidy reductions may increase poverty rates when compensatory mechanisms are insufficient. Consequently, subsidy reform initiatives require carefully sequenced implementation strategies to minimize adverse socioeconomic impacts while enhancing fiscal efficiency.

An additional contribution of this study concerns the identification of opportunity costs associated with maintaining extensive fuel subsidy programs. The results indicate that large subsidy allocations reduce fiscal space available for productive sectors, including infrastructure development, education, healthcare, and poverty alleviation initiatives. Unlike previous studies that primarily emphasized the magnitude of subsidy expenditures, the present research highlights the importance of evaluating how the composition of expenditures influences developmental outcomes. This perspective broadens the discussion surrounding fuel subsidies by emphasizing the relationship between fiscal allocation decisions and long-term economic transformation.

Finally, the novelty of this study lies in its application of Mazmanian and Sabatier's implementation framework to explain why fuel subsidy policies continue to experience targeting failures and fiscal inefficiencies despite repeated regulatory reforms. Previous studies have generally focused either on the distributive consequences of subsidies or their fiscal implications. By integrating legal structures, institutional capacity, target-group behavior, and external conditions into a single analytical framework, this study provides a more comprehensive explanation of the mechanisms by which implementation challenges persist. Therefore, the contribution of this research extends beyond reaffirming the need for subsidy reform by offering a theoretically grounded understanding of the

factors that determine implementation effectiveness in the context of fuel subsidy governance in Indonesia.

5. Concluding Remarks and Recommendation

This study aimed to evaluate the implementation of fuel subsidy policies in Indonesia and examine their implications for the sustainability of the State Budget (APBN). Using a descriptive qualitative approach based on documentation studies and literature review of official government reports, regulatory documents, and empirical studies published during the 2022–2025 period, the research employed the implementation framework developed by Mazmanian and Sabatier to analyze subsidy policies from four dimensions: legal structure, institutional capacity, target-group characteristics, and external conditions. The findings indicate that fuel subsidy policies continue to play an important role in maintaining purchasing power and mitigating inflationary pressures; however, their implementation remains constrained by persistent targeting inaccuracies, institutional limitations, and high sensitivity to external economic shocks. The study further found that the effectiveness of fuel subsidy policies cannot be assessed solely based on their ability to maintain affordable fuel prices, but must also consider their implications for fiscal efficiency, distributive justice, and long-term economic resilience.

From a theoretical perspective, this study contributes to the literature by operationalizing Mazmanian and Sabatier's implementation framework within the context of energy subsidy governance in developing countries. Unlike previous studies that predominantly focused on either the fiscal burden or the distributive consequences of subsidies, this research demonstrates that implementation outcomes emerge from the interaction among regulatory arrangements, institutional readiness, beneficiary characteristics, and external environmental conditions. In practice, the findings highlight the importance of strengthening inter-agency coordination, improving the quality of beneficiary databases, and expanding digital inclusion to enhance the effectiveness of subsidy distribution mechanisms. From a policy perspective, the study suggests that future subsidy reforms should move beyond the dichotomy between commodity subsidies and direct assistance by prioritizing integrated approaches that simultaneously address targeting accuracy, fiscal sustainability, and social protection objectives.

This study is subject to several limitations. First, the analysis relied primarily on documentary evidence and secondary sources, limiting the ability to capture the perceptions and experiences of beneficiaries and implementing actors directly involved in subsidy programs. Second, the study focused on the Indonesian context during the 2022–2025 period, which may restrict the generalizability of the findings to other policy environments with different institutional and economic characteristics. Future studies are therefore encouraged to employ mixed-methods approaches that integrate qualitative evaluations with quantitative analyses of budget realization, distributional impacts, and poverty outcomes. In addition, comparative studies across regions or countries may provide deeper insights into the institutional factors that facilitate successful subsidy reforms. Such efforts would contribute to the development of more adaptive, equitable, and fiscally sustainable energy policies amid increasing global uncertainty.

Statement of Use of Generative AI

During the preparation of this work, the author used generative artificial intelligence tools to support the scientific writing process. Grammarly was used to check grammar, refine writing style, and improve



clarity in scientific writing. All interpretations, analyses, and conclusions presented in this study are the sole responsibility of the author.

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