

Dynamics of Changes in Public Transportation Consumption Patterns Due to Fuel Price Increases

Dini Agustin ^{1*} Eggy Alinugraha Hidayat ² Gilang Sanjaya ³ Siti Alisa Putri Al-Zahra ⁴ Zahra Sabila Putri ⁵ Dadar Supriatna ⁶

^{1*, 2, 3, 4, 5, 6} Universitas Kebangsaan Republik Indonesia, Bandung, Indonesia

Email: agustindini8383@gmail.com, eggyalinugrahaidayat@gmail.com, gilangs4567@gmail.com, stialsptri@gmail.com, zahrasabillaap@gmail.com

ARTICLE HISTORY

Submitted : June 06, 2026
Reviewed : June 07, 2026
June 10, 2026
Revised : June 18, 2026
Accepted : June 19, 2026
Published : July 11, 2026

Conflict of Interest Statement:

The author(s) declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

ABSTRACT

Purpose: This study aims to analyze the potential impact of fuel price increases on economic conditions and public transportation consumption patterns in Bandung City, an urban area characterized by high mobility and transportation demand.

Research Method: The study employed a descriptive qualitative approach using library research. Data were collected from peer-reviewed journal articles, policy documents, government reports, and statistical publications related to fuel pricing, inflation, transportation costs, mobility behavior, and public transportation. The literature was analyzed using content and comparative analysis techniques.

Results and Discussion: The reviewed literature indicates that fuel price increases are associated with inflationary pressures, rising transportation costs, and changes in household expenditure allocation. In urban contexts, increasing fuel prices may encourage behavioral adaptation through more selective travel decisions, improved mobility efficiency, and greater consideration of public transportation alternatives. Bandung's urban characteristics suggest that these impacts are particularly relevant due to its intensive transportation activities.

Implications: The findings provide insights for policymakers in designing transportation and energy policies that support affordability, accessibility, and sustainable urban mobility. Future studies should use primary data to measure behavioral changes among Bandung residents directly.

Originality: This study offers an integrated conceptual analysis of the relationship between fuel price increases, urban economic pressures, and public transportation consumption patterns within the specific context of Bandung City.

Keywords: fuel price increase; public transportation; bandung city; urban mobility; consumer behavior.

1. Introduction

Fuel oil (BBM) is a key component supporting the sustainability of economic activity. Changes in fuel prices affect not only the energy sector but also various aspects of the economy, including production and distribution costs and inflation. This ultimately leads to a decline in people's purchasing power. In Indonesia, the government frequently implements fuel price adjustment policies to control the subsidy



burden in the State Budget (APBN), which is deemed not fully targeted. In recent years, this policy has been a topic of discussion due to its widespread impact on society, including in urban areas such as Bandung, West Java.

Indonesia's dependence on oil imports remains high to meet domestic energy needs. Most of the world's oil reserves are concentrated in the Middle East, such as Saudi Arabia, the United Arab Emirates, Qatar, Iraq, and Kuwait. Data from the Central Statistics Agency (BPS) shows that in 2024, Indonesia's crude oil imports will mostly come from Saudi Arabia, reaching 735,000 tons. Furthermore, population growth has contributed to rising national energy consumption. Furthermore, Indonesia's fuel consumption growth is in line with annual population growth. In addition to domestic factors, global dynamics also influence fuel price fluctuations. The conflict between Russia and Ukraine is one of the triggers for rising global oil prices. Consequently, the Indonesian Crude Oil Price (ICP) increased significantly to US\$95.45 per barrel, far exceeding the assumption in the State Budget of US\$63 per barrel. This increase put pressure on the energy subsidy budget, prompting the government to adjust domestic fuel prices to maintain fiscal stability. The size of the energy subsidy allocation is also a crucial consideration in this policy. In 2022, the energy subsidy budget was recorded at IDR 502.4 trillion. This high figure demonstrates the significant burden the government must bear. Furthermore, rising fuel prices have a knock-on effect on the economy, particularly through higher prices for goods and services, which in turn suppress purchasing power.

In an urban context, the transportation sector is one of the most sensitive to changes in fuel prices. This is due to transportation's heavy dependence on fuel as its primary energy source. When fuel prices rise, transportation operating costs increase for both private vehicles and public transportation. This situation encourages people to adjust their consumption and mobility patterns. Economically, this phenomenon can be explained by the concept of demand elasticity, in which price changes affect consumption levels. Previous studies indicate that increases in fuel prices generally encourage a shift in transportation consumption patterns from private vehicles toward public transportation. However, the magnitude of the effect varies across regions and socioeconomic contexts. Research across 25 European Union countries found that rising fuel prices following the 2022 Ukraine conflict were positively associated with increased public transportation mobility and explained a substantial proportion of changes in transportation usage patterns (Alves & Costa, 2024). Similarly, Belloc *et al.*, (2024) reported that higher gasoline prices were associated with lower private vehicle use and greater adoption of public transportation, while Ahmad *et al.*, (2024) confirmed that fuel price increases attract more travelers to public transit systems.

These cost changes indirectly influence public transportation preferences. In urban areas like Bandung, which has high mobility, rising fuel prices tend to encourage people to consider public transportation a more cost-effective alternative. This demonstrates the relationship between fuel price policies and the public's ongoing adjustments in transportation consumption patterns. Despite growing evidence on the relationship between fuel prices and transportation behavior, empirical studies on urban communities in Indonesia, particularly Bandung City, remain relatively limited. Bandung represents an important urban area characterized by high population density, intensive mobility, and increasing transportation demand. These characteristics make Bandung an appropriate setting for examining how fuel price adjustments influence public transportation consumption patterns and mobility decisions. Fuel also plays a strategic role in supporting national economic activity, as nearly all sectors rely on it for operation. Furthermore, government policies regarding fuel pricing also influence overall economic stability, including market activity and consumer behavior. Therefore, a study of the

impact of fuel price increases on consumer consumption patterns, particularly the use of public transportation in Bandung City, is crucial for understanding the behavioral changes that occur and their implications for the urban transportation system.

This study is conducted to address the need for empirical evidence regarding the behavioral responses of urban communities to fuel price increases. The findings are expected to benefit the community by improving understanding of transportation adaptation strategies amid changing economic conditions, policymakers by providing evidence to support transportation and energy policy formulation, and academic development by enriching the literature on transportation economics, consumer behavior, and public policy in developing countries. Accordingly, this study aims to analyze the impact of fuel price increases on public transportation consumption patterns in Bandung City and to identify the extent to which fuel price changes influence transportation choices among urban residents.

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 *The Concept of Fuel Price Increases and Their Impact on the Economy*

Fuel price increases are adjustments to the selling price of fuel products that result from changes in global energy markets, domestic fiscal policies, or reforms to energy subsidy systems. Fuel serves as a strategic production input and a primary source of energy for transportation, industry, and household activities; therefore, changes in fuel prices have broad economic consequences. From a macroeconomic perspective, higher fuel prices tend to increase production and distribution costs, which are subsequently transmitted to the prices of goods and services throughout the economy. This mechanism contributes to inflationary pressures and may reduce household purchasing power, particularly among low- and middle-income groups (Kunthi *et al.*, 2023; Setyanti & Harsa, 2026). In the Indonesian context, fuel price adjustments are frequently associated with efforts to reduce the fiscal burden of energy subsidies and improve the efficiency of public spending. However, while subsidy reforms may strengthen fiscal sustainability, they can also generate short-term economic challenges, including higher living costs and reduced consumer welfare (Bambe *et al.*, 2024).

The economic impact of fuel price increases extends beyond inflation and affects broader social and economic outcomes. Rising transportation and logistics costs often increase commodity prices and weaken consumption capacity, thereby influencing economic activity at both household and national levels (Suraharta & Hendrasti, 2025). Empirical evidence from Indonesia indicates that fuel price increases can contribute to higher levels of poverty and inequality due to their disproportionate effects on vulnerable households whose expenditures are concentrated on basic needs (Al Izzati *et al.*, 2023). Nevertheless, fuel subsidy reforms are also viewed as an important policy instrument for improving the efficiency of resource allocation, reducing market distortions, and supporting long-term energy transition objectives (Argueyrolles *et al.*, 2025). Consequently, understanding the economic implications of fuel price increases is essential for evaluating policy effectiveness and balancing fiscal sustainability with social welfare considerations.

2.2 The Role of Fuel in the Transportation Sector

Fuel plays a fundamental role in the transportation sector as the primary energy source supporting the movement of people, goods, and services. The transportation sector is among the largest energy-consuming sectors worldwide and remains highly dependent on fossil fuels, particularly petroleum-based products. In Indonesia, transportation accounts for a substantial share of national energy consumption, making fuel availability and affordability critical factors in maintaining economic activity and mobility (Zahari & McLellan, 2024). Similarly, road transportation, the dominant mode of transport in many countries, relies heavily on fuel to sustain daily operations and logistics (Rahman *et al.*, 2022). Because transportation is a key enabler of economic growth, trade distribution, and social connectivity, fluctuations in fuel prices can directly affect transportation costs and the efficiency of mobility systems (Collazos *et al.*, 2024). Consequently, fuel is not merely an operational input but also a strategic resource that affects the overall performance of transportation networks and economic development.

The importance of fuel in transportation is further reflected in the sector's continued dependence on petroleum-based energy despite ongoing efforts toward energy transition and decarbonization. Evidence suggests that more than 90% of transportation energy consumption still originates from fossil fuels, highlighting the sector's vulnerability to fuel price fluctuations and supply disruptions (Al-lami *et al.*, 2025). Changes in fuel prices influence vehicle operating costs, transportation demand, travel behavior, and the choice between private and public transportation modes (He & Kim, 2024). Rising fuel prices generally increase transportation costs and encourage individuals to seek more cost-effective mobility alternatives, particularly in urban areas where public transportation is available. At the same time, the transportation sector remains a major contributor to economic productivity by facilitating market access and the distribution of goods and services (Hubert, 2025). Therefore, understanding the role of fuel in the transportation sector is essential for evaluating how fuel price adjustments affect mobility patterns, transportation consumption, and broader economic activities.

2.3 Consumer Behavior in Transportation Selection

Consumer behavior in transportation selection refers to the process by which individuals evaluate and choose transportation modes based on their needs, preferences, and perceived benefits. The decision to use private vehicles or public transportation is influenced by a combination of psychological, economic, social, and environmental factors. According to the Theory of Planned Behavior, transportation choices are shaped by individual attitudes toward a particular mode, subjective norms arising from social influences, and perceived behavioral control regarding the ease or difficulty of using a transportation service (Fan *et al.*, 2024). Consequently, consumers tend to select transportation modes that they perceive as providing greater utility, convenience, and efficiency in meeting their daily mobility needs. In urban areas, transportation decisions are particularly complex because individuals must consider multiple attributes simultaneously, including travel costs, travel time, accessibility, comfort, reliability, and service quality. A systematic review of urban transportation studies found that transportation mode choice is significantly affected by economic considerations, especially travel expenses, as well as personal characteristics such as income level, occupation, age, and travel purpose (Ranjan & Sinha, 2025). These findings suggest that transportation consumers behave rationally by comparing available alternatives and selecting the option that maximizes perceived benefits while minimizing costs and constraints.

Beyond economic considerations, transportation choices are also influenced by service-related and environmental factors that shape consumer perceptions and travel experiences. Research on travel behavior indicates that social-demographic characteristics, travel patterns, and individual preferences regarding efficiency and service quality significantly affect transportation mode selection (Tejaswi *et al.*, 2024). Public transportation users are more likely to choose transit services when they perceive them as safe, comfortable, reliable, and capable of meeting their mobility requirements. Following the COVID-19 pandemic, factors such as cleanliness, health security, convenience, and overall service quality became increasingly important determinants of public transportation preferences (Ulahannan & Birrell, 2022). In addition, characteristics of the built environment, including accessibility to transit facilities, infrastructure quality, and connectivity between destinations, have been found to influence daily commuting decisions and transportation choices (Wang *et al.*, 2022). Changes in external conditions, such as increases in fuel prices, may further alter consumer behavior by increasing the operating costs of private vehicles and encouraging individuals to reconsider alternative transportation modes. Therefore, transportation mode choice can be understood as a dynamic behavioral process shaped by interactions among economic factors, personal preferences, social influences, service attributes, and environmental conditions, collectively influencing consumer mobility decisions.

2.4 Changes in Community Mobility Patterns

Changes in community mobility patterns refer to shifts in how individuals travel, including changes in travel frequency, travel distance, destination preferences, travel schedules, and transportation mode choices. Mobility patterns are dynamic and tend to evolve in response to economic conditions, technological developments, policy interventions, and social changes. Recent studies indicate that major societal disruptions have significantly reshaped travel behavior, resulting in new mobility patterns characterized by adjustments in activity locations, spatial habits, and travel schedules (Bouzaghane *et al.*, 2024). These changes occur as individuals continually adapt their travel decisions to remain efficient while responding to emerging economic and social realities. In urban environments, mobility patterns are closely linked to employment, access to public services, and daily commuting. Consequently, changes in economic conditions, transportation costs, and accessibility can influence the frequency and nature of travel activities undertaken by individuals and households. Research also demonstrates that mobility patterns vary across social groups and geographical areas, with differences in income levels, residential locations, and socioeconomic status contributing to distinct travel behaviors and transportation needs (Baudains *et al.*, 2024). Therefore, community mobility patterns should be understood as adaptive responses to changing environmental, economic, and social circumstances.

The evolution of mobility patterns has become increasingly evident through changes in transportation preferences and travel behavior in urban areas. Studies show that individuals are gradually shifting from traditional mobility practices toward more integrated and sustainable travel options, particularly when transportation systems provide greater accessibility, convenience, and efficiency (An & Shen, 2025). At the same time, urban residents continue to adapt their travel behavior in response to changing economic conditions, technological innovations, and transportation policies that influence mobility choices (Stokenberga *et al.*, 2023). Changes in work arrangements, lifestyle preferences, and economic activities have also altered travel demand patterns, leading to modifications in commuting frequency and transportation consumption (Christidis *et al.*, 2023). In this context, rising transportation costs, including fuel price increases, may encourage individuals to reconsider their travel

behavior and choose transportation modes that offer greater economic efficiency. Such adjustments can result in reduced private vehicle use, increased reliance on public transportation, or modifications to travel schedules and destinations. Consequently, changes in community mobility patterns reflect a complex interplay among economic pressures, transportation system characteristics, technological developments, and individual behavioral adaptations, collectively shaping how people move within urban environments.

2.5 The Relationship Between Fuel Price Increases and Transportation Consumption in Urban Areas

Fuel price increases are directly related to transportation consumption, particularly in urban areas where mobility is intensive, and transportation costs constitute an important component of household expenditures. From an economic perspective, rising fuel prices increase the operational costs of private vehicle use, thereby influencing individual travel decisions and transportation consumption patterns. As transportation costs increase, consumers tend to reassess the relative costs and benefits of available travel alternatives and may shift toward more affordable modes of transportation. Empirical evidence suggests that increases in fuel prices are positively associated with greater use of public transportation because public transit often provides a more cost-efficient alternative to private vehicle travel. A study conducted across 25 European Union countries found that fuel price increases following the 2022 energy crisis significantly contributed to increased public transportation use and accounted for a substantial share of mobility changes observed during the period (Alves & da Costa, 2024). These findings indicate that fuel prices serve as an important economic signal that influences transportation demand and mode choice.

The impact of fuel price increases on transportation consumption is particularly evident in urban environments where residents generally have access to a wider range of transportation alternatives. Studies have shown that fluctuations in fuel prices significantly affect public transport demand, with many individuals increasing their use of public transportation as fuel costs rise (Wang *et al.*, 2026). Nevertheless, the magnitude of behavioral responses varies across communities depending on socioeconomic conditions, transportation infrastructure, and the degree of dependence on private vehicles. Therefore, the relationship between fuel price increases and transportation consumption can be understood as a dynamic interaction between economic incentives and transportation accessibility, where rising fuel costs encourage shifts in travel behavior and influence the overall pattern of transportation consumption in urban areas.

3. Research Method

This study uses a descriptive qualitative approach with a library research method to analyze the effect of fuel price increases on public transportation consumption patterns in Bandung City. The study was conducted from January to March 2026 through a systematic review of scientific literature and secondary documents relevant to fuel pricing policies, urban transportation systems, mobility behavior, and public transportation consumption. Although Bandung City serves as the analytical context of this study, the research does not collect primary field data. Instead, Bandung is positioned as an urban case study characterized by high mobility intensity, extensive transportation demand, and sensitivity to changes in transportation costs.

The sources reviewed consisted of peer-reviewed journal articles, government reports, transportation policy documents, statistical publications, and academic studies published between 2022 and 2025. Literature selection employed inclusion criteria consisting of: (1) studies discussing fuel price changes and their economic impacts; (2) studies examining transportation consumption, mobility behavior, or modal choice in urban areas; (3) publications indexed in reputable databases or issued by recognized institutions; and (4) studies providing empirical evidence relevant to urban transportation conditions. Literature that focused exclusively on non-transport sectors or lacked methodological transparency was excluded from the review.

Data collection was conducted using documentation techniques through identification, screening, classification, and extraction of relevant information from selected literature. All reviewed sources were grouped into four analytical themes: fuel price increases and inflation, the role of fuel in transportation, transportation mode choice behavior, and urban mobility pattern changes. This thematic categorization was employed to ensure conceptual consistency and avoid the interchangeable use of key concepts such as transportation consumption, mobility behavior, modal shift, and public transportation usage.

Data analysis employed content and comparative analyses following Sugiyono (2013). Content analysis was applied to identify recurring findings, concepts, and patterns across the literature, while comparative analysis was used to compare empirical evidence from different studies and geographical contexts. Statistical figures reported in this study, including indicators related to household expenditure and transportation costs, are presented as findings from previous studies rather than as original empirical results of the present research. The findings were subsequently synthesized and interpreted to explain how fuel price increases may influence public transportation consumption patterns and mobility behavior in urban areas, particularly in Bandung City.

4. Results and Discussion

4.1 The Impact of Fuel Price Increases on Community Economic Conditions

Fuel price increases have broad economic implications because fuel functions as a strategic production input that influences transportation, distribution, and logistics costs. In Bandung City, which is characterized by intensive economic activity and high dependence on interregional commodity distribution, increases in fuel prices can raise the prices of goods and services, particularly necessities. Rising distribution costs ultimately contribute to inflationary pressures and reduce household purchasing power, especially among low- and middle-income groups whose expenditures are concentrated on essential consumption needs (Sarbaini & Nazaruddin, 2023; Az Zahra *et al.*, 2024).

Table 1. Literature-Based Evidence on the Economic Impact of Fuel Price Increases

Economic Indicators	Statistical Figures	Data Description
Influence of Consumption	74.7%	Reported influence of fuel price increases on household expenditure in the study of Az Zahra <i>et al.</i> , (2024).
Analysis Period	2017–2022	Period used by Sarbaini and Nazaruddin (2023) to analyze the relationship between fuel prices and inflation.

Source: Adapted from Az Zahra *et al.*, (2024) and Sarbaini & Nazaruddin (2023).

Table 1 does not represent original findings from the present study. Instead, it summarizes statistical evidence reported in previous studies that were reviewed as part of the literature analysis. The figure of 74.7% should therefore be interpreted as evidence from a specific empirical context rather than a direct estimate of conditions in Bandung City. Likewise, the inflation analysis covering the 2017–2022 period provides evidence of a relationship between fuel price fluctuations and inflationary pressures. However, it should not be generalized without accounting for differences in regional economic structures.

In the Bandung context, the relevance of these findings lies in the city's strong dependence on transportation and logistics. As fuel prices increase, transportation and distribution costs tend to rise, creating upward pressure on commodity prices. This condition may reduce real household income and limit consumption capacity. However, because this study relies on secondary literature rather than primary household survey data from Bandung, the findings should be interpreted as indicative trends rather than direct measurements of Bandung residents' economic conditions.

Compared with previous studies, the Bandung case is particularly important because the city functions as a major urban center with high population density and mobility intensity. Consequently, inflationary pressures resulting from fuel price increases may be transmitted more rapidly through transportation and commodity distribution channels than in less urbanized regions.

4.2 The Impact of Fuel Price Increases on Transportation Costs

The transportation sector is one of the sectors most directly affected by fuel price adjustments because fuel constitutes a major component of vehicle operating costs. In Bandung City, where public transportation, ride-hailing, and private vehicles coexist in a highly dynamic mobility system, increases in fuel prices can affect transportation tariffs and service accessibility. Transportation operators frequently respond to higher operating costs by adjusting fares or modifying operational strategies to maintain service continuity (Gunawan *et al.*, 2023).

Table 2. Literature-Based Evidence on Transportation Cost Impacts

Transportation Components	Statistical Figures	Data Description
Cost Contribution	32.2%	Contribution of fuel variables to transportation service standards reported by Gunawan <i>et al.</i> , (2023).
Bus Fare Increase	13.33%	A fare increase was observed following a Rp1,650 increase in fuel prices.

Source: Adapted from Gunawan *et al.*, (2023) and Sudiyanto (2018).

The statistical values presented in Table 2 originate from previous empirical studies and are included to illustrate the potential magnitude of transportation cost responses to fuel price increases. These figures should not be interpreted as direct evidence from Bandung City. Rather, they provide comparative insights into how transportation operators may respond to changing fuel costs through fare adjustments and operational cost management.

The findings suggest that fuel remains one of the most influential cost components within transportation services. When fuel prices increase, operators often face a trade-off between raising fares and maintaining service quality. In some cases, cost pressures may encourage reductions in maintenance expenditures or service improvements, potentially affecting passenger satisfaction. Such

conditions are particularly relevant to Bandung because transportation demand remains high and a substantial proportion of daily travel depends on affordable mobility services.

From an urban transportation perspective, sustained increases in transportation costs may affect accessibility, particularly for lower-income households. Consequently, fuel price policies may influence not only transportation providers but also broader issues related to social equity and urban mobility.

4.3 Changes in Community Mobility Patterns in Bandung City

The literature reviewed indicates that fuel price increases often trigger behavioral adaptation among urban residents. Individuals tend to reassess their travel needs, reduce discretionary trips, and prioritize essential activities such as commuting, education, and access to public services. This adaptation reflects rational economic behavior aimed at minimizing transportation expenditures during periods of rising living costs (Yuliani *et al.*, 2023).

In Bandung City, these adaptations may manifest as more careful route planning, reduced trip frequency, greater use of ride-sharing, and efforts to improve fuel efficiency. Such behavioral changes should be distinguished from transportation consumption patterns. Mobility behavior refers to how individuals organize and undertake travel activities, whereas transportation consumption refers to the actual use of transportation services and modes. This distinction is important because the two concepts are frequently conflated in previous discussions.

The reviewed literature further suggests that mobility adaptation is influenced not only by fuel prices but also by income levels, accessibility of transportation services, urban spatial structure, and individual travel requirements. Therefore, changes in mobility patterns should be understood as multidimensional responses rather than solely the result of fuel price adjustments.

4.4 Switching to Public Transportation as an Economical Alternative

One of the most frequently discussed consequences of fuel price increases is the potential shift from private vehicles to public transportation. As private vehicle operating costs increase, public transportation becomes relatively more attractive because its costs are distributed across a larger number of users and are often partially subsidized by government policies (Hidayat *et al.*, 2023).

Table 3. Literature-Based Evidence on Modal Shift Trends

Transition Indicators	Statistical Figures	Data Description
Price Threshold	Rp14.000	Threshold identified in previous studies as associated with increased intentions to shift modes.
Product Characteristics	Inelastic	Fuel remains a necessity despite price increases.

Source: Adapted from Yuliani *et al.*, (2023).

The Rp14.000 threshold reported in Table 3 is based on prior research and should not be interpreted as a universal benchmark for Bandung City. The present study did not conduct surveys or behavioral experiments to verify this threshold among Bandung residents. Therefore, the figure should be viewed as indicative evidence illustrating the possibility of modal shift under certain economic conditions.

The literature consistently indicates that fuel price increases may encourage greater consideration of public transportation alternatives. However, actual modal shifts depend on multiple factors, including service quality, accessibility, travel time, reliability, safety, and route coverage. Consequently, fuel price increases alone are insufficient to guarantee substantial shifts toward public transportation if the available services do not adequately meet users' mobility needs.

In the Bandung context, the potential for modal shift is strengthened by the availability of urban public transportation services, such as Trans Metro Bandung, and other collective transport modes. Nevertheless, the magnitude of this shift remains uncertain and requires future empirical investigation using primary survey data. Therefore, the present findings should be interpreted as evidence of potential behavioral adaptation rather than definitive proof of large-scale modal change among Bandung residents.

5. Concluding Remarks and Recommendation

This study concludes that fuel price increases can influence economic conditions and transportation consumption patterns in urban areas by affecting inflation, transportation costs, and household expenditure allocation. Based on the synthesis of the reviewed literature, rising fuel prices are generally associated with increased living costs, higher transportation operating expenses, and behavioral adjustments in community mobility. In Bandung City, these findings indicate that fuel price changes may encourage residents to be more selective in organizing travel and to consider more cost-efficient transportation alternatives. The study also highlights the importance of distinguishing between transportation consumption, mobility behavior, and modal shift when analyzing the broader implications of fuel price policies in urban environments.

The use of a library research approach was considered appropriate for identifying patterns, comparing findings across previous studies, and developing a conceptual understanding of how fuel price increases may affect urban transportation dynamics. The main contribution of this study lies in contextualizing evidence from previous research within the urban characteristics of Bandung City, which is characterized by high mobility demand and strong dependence on transportation services. The findings provide useful insights for policymakers in designing transportation and energy policies that balance economic efficiency, affordability, and accessibility.

However, this study is limited by its reliance on secondary data and the absence of primary empirical evidence from Bandung residents. Therefore, future research is recommended to employ surveys, interviews, or quantitative modeling approaches to directly measure changes in household expenditure, mobility behavior, and public transportation use following fuel price adjustments in Bandung City.

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.

References

- Ahmad, M., Anwer, I., Yousuf, M. I., Javid, M. A., Ali, N., Tesoriere, G., & Campisi, T. (2024). Investigating the key factors affecting public transport ridership in developing countries through structural equation modeling. *Sustainability*, 16(11), 4426. <https://doi.org/10.3390/su16114426>
- Al-lami, A., Török, A., Alatawneh, A., & Alrubaye, M. (2025). Future energy consumption and economic implications of transport policies: A scenario-based analysis for 2030 and 2050. *Energies*, 18(12), 3012. <https://doi.org/10.3390/en18123012>
- Al Izzati, R., Yusrina, A., & Suryahadi, A. (2023). *Estimating the effect of a fuel price increase on poverty and inequality: Evidence from a fuel subsidy reduction in Indonesia*. Research Note 1/JAN/2023. SMERU Research Institute, Jakarta.
- Alves, A., & da Costa, N. M. (2024). Changes in fuel prices and the use of public transport: insights from the European Union following the Invasion of Ukraine. *European Journal of Geography*, 15(4), 232–243. <https://doi.org/10.48088/ejg.a.alv.15.4.232.243>
- An, C., & Shen, J. (2025). Assessing the impact of Mobility-as-a-Service (MaaS) on sustainable urban travel behaviors: a systematic literature review. *Frontiers in Sustainable Cities*, Volume 7-2025. <https://doi.org/10.3389/frsc.2025.1645488>
- Argueyrolles, R., Heimann, T., & Delzeit, R. (2025). Impact of gasoline and diesel subsidy reforms on global biofuel mandates. *GCB Bioenergy*, 17(2), e70019. <https://doi.org/10.1111/gcbb.70019>
- Bambe, B. W. W., Habib, C. B., & Peregalli, J. M. (2024). *Fuel Subsidy Reforms: Lessons from the Literature and Assessing the Price Shock for Different Sectors through an Input-Output Table in the Case of Angola* (Policy Research Working Paper Series, Issue 10939). The World Bank. <https://econpapers.repec.org/RePEc:wbk:wbrwps:10939>
- Baudains, P., Kalatian, A., Choudhury, C. F., & Manley, E. (2024). Social inequality and the changing patterns of travel in the pandemic and post-pandemic era. *Journal of Transport Geography*, 118, 103923. <https://doi.org/https://doi.org/10.1016/j.jtrangeo.2024.103923>
- Belloc, I., Gimenez-Nadal, J. I., & Molina, J. A. (2024). The gasoline price and the commuting behavior of US commuters: Exploring changes to green travel mode choices. *Journal of Transport Geography*, 121, 104006. <https://doi.org/https://doi.org/10.1016/j.jtrangeo.2024.104006>
- Bouzaghane, M. A., Obeid, H., González, M., & Walker, J. (2024). Human mobility reshaped? Deciphering the impacts of the Covid-19 pandemic on activity patterns, spatial habits, and schedule habits. *EPJ Data Science*, 13(1), 24. <https://doi.org/10.1140/epjds/s13688-024-00463-4>
- Christidis, P., Vega Gonzalo, M., Ulpiani, G., & Vettters, N. (2023). Post-pandemic trends in urban mobility. *Publications Office of the European Union*.
- Collazos, J. S. G., Ardila, L. M. C., & Cardona, C. J. F. (2024). Energy transition in sustainable transport: concepts, policies, and methodologies. *Environmental Science and Pollution Research*, 31(49), 58669–58686. <https://doi.org/10.1007/s11356-024-34862-x>
- Fan, M., Qi, J., Zheng, X., Shang, H., & Kan, J. (2024). A study on commuters' public transportation mode choice behavior in river valley-type cities considering terrain spatial perception: evidence from Lanzhou, China. *Scientific Reports*, 14(1), 13237. <https://doi.org/10.1038/s41598-024-64062-z>
- He, H., & Kim, C. (2024). Reproducibility Package for Vehicle and Fuel Taxation for Transport Demand Management: Learnings from the Literature through a Development Lens [supporting dataset]. *Policy Research Working Papers*, 10647. <https://doi.org/10.60572/3wek-tf84>
- Hubert, L. (2025). *The Energy Transition's Impact on Transport Sector Sustainability: Opportunities and Challenges for Businesses*. <https://urn.fi/URN:NBN:fi-fe2025092698525>
- Kunthi, Y. C., Syofyan, S., & Sirait, K. H. (2023). Impact of Fuel Oil Pricing Policy on Inflation. *European Proceedings of Social and Behavioural Sciences*. <https://doi.org/10.15405/epsbs.2023.11.02.14>
- Rahman, M. M., Rahman, S. M., Shafiullah, M., Hasan, M. A., Gazder, U., Al Mamun, A., Mansoor, U., Kashifi, M. T., Reshi, O., & Arifuzzaman, M. (2022). Energy demand of the road transport sector of Saudi arabia—application



- of a causality-based machine learning model to ensure sustainable environment. *Sustainability*, 14(23), 16064. <https://doi.org/10.3390/su142316064>
- Ranjan, R., & Sinha, S. (2025). A systematic review of mode choice behavior in urban transportation with emphasis on individual preferences and influencing factor. *Discover Cities*, 2(1), 98. <https://doi.org/10.1007/s44327-025-00138-3>
- Setyanti, A. M., & Harsa, M. F. (2026). Revisiting the Inflationary Impact of Fuel Subsidies: Insights from Indonesia's Exposure to Global Oil Price and Exchange Rate Risks. *Indonesian Treasury Review: Jurnal Perbendaharaan, Keuangan Negara Dan Kebijakan Publik*, 11(1), 1–13. <https://doi.org/10.33105/itrev.v11i1.1394>
- Stokenberga, A., Ivarsson, E., & Fulponi, J. I. (2023). *The COVID-19 Mark on Urban Mobility*.
- Suraharta, I. M., & Hendrasti, A. (2025). The Effects of Rising Fuel Prices on Logistic Costs in Emerging Markets. *The Journal of Academic Science*, 2(6), 1678–1687. <https://doi.org/10.59613/12zvem38>
- Tejaswi, S. P., Balijepalli, C., & Prasad, C. (2024). Revealing commute choice factors: SEM analysis of public transport and active modes in Hyderabad, India. *Journal of Urban Planning and Development*, 150(3), 4024026. <https://doi.org/10.1061/jupddm.upeng-5022>
- Ulahannan, A., & Birrell, S. (2022). Designing better public transport: understanding mode choice preferences following the COVID-19 pandemic. *Sustainability*, 14(10), 5952. <https://doi.org/10.3390/su14105952>
- Wang, Z., Weng, G., Li, J., & Wang, C. (2026). The Mechanism of Digital – Real Integration Empowering Tourism Ecological Efficiency: Evidence from the Taihang Mountains in China. *Sustainability*, 18(12), 1–44. <https://doi.org/10.3390/su18126260>
- Wang, Z., Yang, Y., Yao, E., Zhu, Y., & Rao, Z. (2022). An analysis of commute mode choice behavior considering the impacts of built environment in Beijing. *Transportation Letters*, 14(7), 733–739. <https://doi.org/10.1080/19427867.2021.1938908>
- Zahari, T. N., & McLellan, B. C. (2024). Sustainability of Indonesia's transportation sector energy and resources demand under the low carbon transition strategies. *Energy*, 311, 133385. <https://doi.org/https://doi.org/10.1016/j.energy.2024.133385>

Corresponding author

Dini Agustin can be contacted at: agustindini8383@gmail.com

