

# Mitigating the Impact of Fuel Price Hike on Microenterprises: Strategies and Solutions

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**Abstract:** *This research aimed to investigate the effects of fuel price hikes on microenterprises located in Bad-as, Placer, Surigao del Norte, Philippines. The study focused on three dependent variables: Transportation, Inflation, and Consumer Expenditure. The scope of the research was limited to microenterprise owners situated in the specified area. The study adopted a quantitative approach, utilizing a descriptive survey technique and employing a convenience sampling method. A total of 102 out of 111 participants responded to the researcher-made questionnaire. The collected data were analyzed using various descriptive statistical tools, including Frequency Count and Percentage Distribution, Mean and Standard Deviation, and Analysis of Variance (ANOVA). The findings indicate a significant impact of fuel price hike on microenterprises, particularly in terms of consumer expenditure, which obtained the highest average mean score of 3.35. Additionally, transportation and inflation also experienced a notable effect with average mean scores of 3.19 and 3.10, respectively. When participants were grouped based on their profiles, a significant difference was observed concerning inflation when grouped according to working capital. However, no significant differences were found in transportation, inflation, and consumer expenditure when grouped based on the number of employees, average monthly sales, and number of years in operation.*

**Keywords:** Fuel Price Hike, Microenterprises, Transportation, Inflation, Consumer Expenditure

## I. INTRODUCTION

Fuel price hike refers to a sudden and significant increase in the cost of fuel products, which are materials capable of generating heat or power when burned. Fuel is the most widely used source of energy, serving as a crucial power source for domestic and industrial processes. In today's world, where technologies abound, living without fuel seems almost implausible, as it has become an integral part of daily life, powering transportation and providing electricity to homes.

Over the past years, there have been notable fluctuations in fuel and food prices. Notably, during the first half of 2008, the world experienced a remarkable surge in fuel prices. Studies have indicated that fuel prices remained relatively stable from January 2006 to December 2007. However, during the first half of 2008, both unleaded gasoline and diesel prices saw significant increases—31.6% and 36.9%, respectively, compared to the previous year. Fast-forward to more recent times, Trading Economics data shows fluctuations in gasoline prices in the Philippines, reaching as high as 1.55 USD/Liter in early 2022 and subsequently fluctuating throughout 2023.

These erratic changes in gasoline prices can have far-reaching effects, particularly on the livelihoods of some Filipinos, especially those relying solely on their businesses for income. Economies producing oil may benefit from fuel price hikes due to increased stock prices, while non-oil-producing economies may face challenges as their business expenses rise, potentially impacting product costs.

In light of these considerations, the researcher observed a corresponding increase in the products sold by microenterprises in Bad-as with fuel price hikes. This study aimed to explore the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte, with a focus on providing valuable insights and solutions for microenterprise owners. The gathered data would be instrumental in determining the extent of the impact of fuel price hikes on microenterprises in the specified area.

By examining the relationship between fuel price fluctuations and microenterprises' economic activities, this research would seek to equip microenterprise owners with better strategies to navigate the challenges posed by fuel price hikes.

Ultimately, the findings from this study could contribute to fostering a more resilient and sustainable environment for microenterprises in Bad-as, Placer, Surigao del Norte.

## II. BACKGROUND OF THE STUDY

Fuel, defined as any material capable of producing heat or power when burned, stands as one of the most widely utilized sources of energy. It powers essential aspects of daily life, including transportation and domestic and industrial processes. As technologies advance, the reliance on fuel has become deeply ingrained, making it challenging to envision life without its crucial contributions.

Historically, the world has experienced significant spikes in fuel and food prices, and one such instance occurred during the first half of 2008. Prior to that period, fuel prices remained relatively stable from January 2006 to December 2007, specifically for unleaded gasoline and diesel. However, the first half of 2008 saw an unprecedented surge, with unleaded gasoline prices increasing by 31.6% and diesel prices by 36.9% compared to the previous year. More recently, in the Philippines, gasoline prices have displayed a pattern of fluctuation, impacting the cost of living and doing business.

For microenterprises, which are often characterized by limited resources and vulnerable market positions, fuel price hikes can have significant implications. The expenses associated with fuel directly affect transportation costs and may lead to inflationary pressures. In turn, microenterprise owners may face the challenge of passing on increased costs to consumers, potentially impacting consumer expenditure patterns.

Given the importance of microenterprises to local economies and livelihoods, understanding the effects of fuel price hikes in Bad-as, Placer, Surigao del Norte is of paramount importance. The ability of microenterprise owners to navigate such economic challenges will determine their resilience and sustainability. Thus, this study aims to examine how fuel price hikes influence microenterprises in the specified area, with a focus on transportation, inflation, and consumer expenditure.

By shedding light on this relationship, this research seeks to provide microenterprise owners with valuable insights into the effects of fuel price hikes on their businesses. Armed with this knowledge, they can better strategize and implement measures to mitigate potential negative impacts and foster growth and adaptability within their enterprises.

In conclusion, comprehending the implications of fuel price hikes on microenterprises is a critical step in fostering a conducive environment for the sustainable development of these small-scale businesses in Bad-as, Placer, Surigao del Norte. This study endeavors to contribute to the body of knowledge concerning fuel price dynamics and its implications for microenterprises, thus facilitating informed decision-making for business owners, policymakers, and stakeholders alike.

## III. METHODOLOGY

This study employed a descriptive research design, utilizing the survey technique to investigate the effects of fuel price hikes on microenterprises. The research design allowed for the collection of responses from participants, serving as the basis for identifying and analyzing the impacts of fuel price increases on these small businesses.

The research was conducted among microenterprises located in Bad-as, Placer, Surigao del Norte, which were accessible to the researchers. The total population of microenterprises in the area was 111; however, due to practical constraints, 102 out of 111 microenterprises participated in the survey. To select participants, the study adopted a convenience sampling method.

The microenterprises involved in the study represented a diverse range of businesses, including eateries or cafeterias, market vendors, sari-sari stores, bakeshops, ukay-ukay stores, and fruit stand stalls. These microenterprises were primarily operating within the specified area and served as the primary source of livelihood for their owners, upon which they depended for their daily sustenance.

To gather data from the participants, a researcher-made survey questionnaire was utilized. The questionnaire comprised two parts, both consisting of closed-ended questions. Part one (I) focused on gathering information about the participants' profiles, including the number of employees, average monthly sales, working capital, and number of years in operation. Part two (II) delved into the effects of fuel price hikes through statements provided to the respondents.

To ensure the questionnaire's content validity, the researcher-made survey questionnaire was subjected to review and evaluation by experts in the field. Their feedback and input were considered to enhance the questionnaire's relevance and accuracy.

By employing this methodology, the study aimed to provide valuable insights into how fuel price hikes impact microenterprises in Bad-as, Placer, Surigao del Norte. The survey responses were analyzed and interpreted, enabling the researchers to draw meaningful conclusions and offer practical implications to support microenterprise owners in navigating the challenges posed by fuel price fluctuations.

**IV. RESULTS AND DISCUSSION**

This study provided valuable insights into the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte, contributing to a better understanding of the challenges faced by these small businesses in an ever-changing economic landscape. By addressing the implications highlighted in this study, stakeholders could work towards fostering a more resilient and supportive environment for microenterprises in the area.

TABLE 1: PROFILE OF RESPONDENTS

Profile	f(n=102)	%
<b>Number of Employees</b>		
1-3 employees	92	90.20
4-6 employees	8	7.84
7-9 employees	2	1.96
<b>Average Monthly Sales</b>		
1,000-50,000	77	75.49
50,001-100,000	16	15.69
100,001-150,000	3	2.94
150,001-200,000	1	0.98
200,001-250,000	1	0.98
250,001-300,000	4	3.92
<b>Working Capital</b>		
Php 100,000 and below	92	90.20
Php 100,001 to Php 299,999	9	8.82
Php 1,000,000 to Php 3,000,000	1	0.98
<b>Number of years in operation</b>		
1-5 years	76	74.51
6-10 years	15	14.71
11-15 years	3	2.94
16-20 years	3	2.94
21-25 years	1	0.98
26-30 years	1	0.98
35-40 years	2	1.96
75-80 years	1	0.98

Table 1 displays the participant profiles, including the number of employees, average monthly sales, working capital, and number of years in operation.

Regarding the number of employees, the majority of participants (92 or 90.20%) had 1 to 3 employees, while 8 participants (7.84%) had 4 to 6 employees, and only 2 participants (1.96%) had 7 to 9 employees. Thus, the survey primarily involved microenterprises with 1 to 3 employees.

In terms of average monthly sales, the highest percentage of participants (77 or 75.49%) reported sales between Php 1,000 to 50,000. Subsequently, 16 participants (15.69%) had average monthly sales between Php 50,001 to 100,000, 4 participants (3.92%) reported sales between Php 250,001 to 300,000, 3 participants (2.94%) had sales between Php

100,001 to 150,000, and the remaining 2 participants (0.98%) had sales falling in other ranges. The majority of participants reported monthly sales not exceeding Php 50,000.

In relation to working capital, the majority of participants (92 or 90.20%) had working capital amounting to Php 100,000 and below. Nine participants (8.82%) reported working capital between Php 100,001 to Php 299,999, while only one participant (0.98%) had a higher working capital ranging from Php 1,000,000 to Php 3,000,000. The data suggests that most participants, having 1 to 3 employees, also possessed working capital not exceeding Php 100,000.

Concerning the number of years in operation, the highest percentage of participants (76 or 74.51%) had been operating for 1 to 5 years. Subsequently, 15 participants (14.71%) had been operating for 6 to 10 years, and 3 participants (2.94%) had been in operation for each of the following ranges: 11 to 15 years, 16 to 20 years, and 35 to 40 years. Additionally, one participant (0.98%) each reported being in operation for 21 to 25 years, 26 to 30 years, and 75 to 80 years. In summary, the majority of surveyed participants had a business tenure of 1 to 5 years.

These participant profiles provide valuable insights into the composition and characteristics of the microenterprises included in the study. Understanding these profiles allows for a more comprehensive analysis of the effects of fuel price hikes on different types of microenterprises in Bad-as, Placer, Surigao del Norte.

TABLE 2: EFFECTS OF FUEL PRICE HIKE TO THE MICROENTERPRISES IN BAD-AS, PLACER, SURIGAO DEL NORTE AS TO

<b>TRANSPORTATION</b>	<b>Mean</b>	<b>SD</b>	<b>VI</b>	<b>QD</b>
There is a cumulative increase in product or service cost as the transportation cost increases due to increase in fuel products.	3.22	0.92	A	H
There is a relative increase in the cost of raw materials once delivered.	3.12	0.74	A	H
There is a different shipping fee or delivery cost as it depends on the supplier and acquirer's point of destination.	3.36	0.67	SA	VH
There is a relative increase in price of goods due to a higher freight cost for businesses to break even or make a profit.	3.10	0.74	A	H
There is an additional charge whenever products are being transported.	3.14	0.84	A	H
<b>Average:</b>	3.19	0.78	A	H

In terms of transportation, the study examined two indicators related to the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte.

The participants strongly agreed with this indicator, as evidenced by the highest mean score of 3.36 and a standard deviation of 0.67, indicating a qualitative assessment of "Very High." The participants recognized that the cost of shipping or delivery is influenced by the supplier and acquirer's point of destination. As fuel prices increase, the cost of delivery is likely to be impacted, especially for distant shipping destinations. Shippers must account for the higher fuel consumption associated with transporting goods to farther locations, resulting in added charges to counterbalance fuel costs. This implies that microenterprise owners in the area acknowledge the significant effect of fuel price hikes on shipping costs.

According to research by Rodrigue&Notteboom (2020), distance is a critical factor affecting transport costs, with shippers emphasizing route efficiency in terms of length, time, economic cost, and energy consumption. Additionally, Walsh (2022) highlights the enforcement of delivery area surcharges for destinations outside a carrier's standard area of shipping, leading to increased delivery costs. The study's findings align with these observations, underscoring the impact of fuel price hikes on transportation expenses for microenterprises.

The participants agreed with this indicator, as indicated by a mean score of 3.10 and a standard deviation of 0.74, with a qualitative description of "High." The cost of freight significantly contributes to the final price of goods or services. When freight costs increase, microenterprises may face the challenge of either raising product prices to break even or adjusting profit margins accordingly. Maintaining profitability is essential for businesses, even amid rising shipping costs. Consequently, businesses may opt to reduce other expenses or source goods from different locations to offset the impact of heightened shipping costs. The participants' recognition of this effect underscores the importance of regularly evaluating and forecasting freight costs to remain competitive and profitable.

Research by Baxter (2021) highlights that higher freight costs affect the entire supply chain, leading companies to adjust pricing in response to rising fuel expenses. Consequently, businesses may need to sell more products to break even or make a profit when faced with increasing costs. The study's results align with this notion, indicating that microenterprises in the region are impacted by fuel price hikes, influencing their pricing strategies.

Overall, Table 2 presents the effects of fuel price hikes on transportation for microenterprises in Bad-as, Placer, Surigao del Norte, with an average mean of 3.19 and a standard deviation of 0.78. The participants' agreement with the indicators emphasizes the high effect of fuel price hikes on microenterprises, particularly in terms of increased shipping fees or delivery costs and the relative increase in the price of goods. This recognition by microenterprise owners highlights the significance of fuel prices on their operational costs and pricing decisions.

TABLE 3: EFFECTS OF FUEL PRICE HIKE TO THE MICROENTERPRISES IN BAD-AS, PLACER, SURIGAO DEL NORTE AS TO INFLATION

INFLATION	Mean	SD	VI	QD
There is an additional cost in the prices of goods and commodities due to increase in the cost of fuel.	3.42	0.81	SA	VH
There is a strong influence of high gasoline prices in response to inflation, especially the developing business which are likely more affected than those advanced business.	3.17	0.68	A	H
There is an increase of prices of many products made with plastic as fuel is the key ingredient in petrochemicals that will used to make plastic.	2.71	0.85	A	H
There is a strong impact of war between Russia and Ukraine as to why the prices of goods increase due to prohibition of importing Russia's oil.	3.02	0.93	A	H
There is an extreme shock in prices of goods and commodities brought by high fuel price that eventually lead to a higher inflation rate.	3.20	0.70	A	H
<b>Average:</b>	3.10	0.80	A	H

In terms of inflation, the study assessed two indicators related to the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte.

Participants strongly agreed with this indicator, as indicated by the highest mean score of 3.42 and a standard deviation of 0.81, denoting a qualitative assessment of "Very High." The prices of essential commodities, such as food, oil, and gasoline, are closely tied to consumer price indices, which, in turn, affect global inflation and inflation expectations. Microenterprises in Bad-as are significantly impacted by the increased cost of fuel, and in response, they have no choice but to add an additional cost to their products and commodities to compensate for the heightened shipping fees charged by their suppliers. The increase in fuel costs forces businesses to incur additional expenses, leading to higher final product prices, which are ultimately passed on to consumers. The study findings emphasize the strong recognition by microenterprise owners in Bad-as, Placer, Surigao del Norte, of the very high effect of fuel price hikes on inflation.

According to Rasoulinezhad et al. (2019), fuel plays a crucial role in various sectors of the economy, including transportation, agriculture, industry, and households, making it a key factor in production. Higher commodity prices have long-term effects on inflation expectations, particularly impacting the prices of imported food items and other consumption goods.

Participants agreed with this indicator, as evidenced by a mean score of 2.71 and a standard deviation of 0.85, with a qualitative description of "High." As fuel prices rise, the cost of producing petrochemicals, a key ingredient in plastic manufacturing, also increases. This results in higher prices for plastic products, such as containers, bottles, cups, and more. Additionally, supply disruptions and increased demand for plastic products can further contribute to price increases. The impact of higher plastic prices is significant for businesses heavily reliant on plastic packaging. To mitigate the effects of price increases, some microenterprises may explore alternative materials and production methods or increase the prices of their final products. The study shows that microenterprise owners in Bad-as recognized the high effect of fuel price hikes on plastic-related products.

According to Domingo & Halevi (2022), more than 99% of plastic is derived from fossil fuels, making it a substantial contributor to global climate change. In the past, crude oil was a major contributor to inflation due to its economic importance and role as a key ingredient in petrochemicals used for plastic production. Consequently, high oil prices lead to higher prices for products made with plastic (Lioudis, 2022).

Overall, the average response to the effect of fuel price hikes on inflation for microenterprises in Bad-as, Placer, Surigao del Norte can be verbally interpreted as "Agree" and qualitatively described as "High," with an average mean of 3.10 and a standard deviation of 0.80. The study highlights the significant impact of fuel price hikes on inflation, causing a ripple effect through transportation costs, production expenses, and consumer prices, affecting microenterprises in the region.

TABLE 4: EFFECTS OF FUEL PRICE HIKE TO THE MICROENTERPRISES IN BAD-AS, PLACER, SURIGAO DEL NORTE AS TO CONSUMER EXPENDITURE

CONSUMER EXPENDITURE	Mean	SD	VI	QD
There is a strong effect of increase in fuel prices to the transportation cost of importing and exporting commodities and goods.	3.52	0.64	SA	VH
There is a slow growth of economy when inflation goes up that affects household expenditures.	3.26	0.56	SA	VH
There is a direct impact of high price in fuel which leads to additional transportation cost that eventually making the household's expenses increase as well.	3.43	0.67	SA	VH
There is a distinct impact of high oil prices depending on the different type of microenterprise.	3.00	0.64	A	H
There is an impact of high oil prices in response to lesser disposable income of the household.	3.51	0.64	SA	VH
<b>Average:</b>	3.35	0.63	SA	VH

In terms of consumer expenditure, the study examined two indicators related to the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte.

Participants strongly agreed with this indicator, as indicated by the highest mean score of 3.52 and a standard deviation of 0.64, denoting a qualitative assessment of "Very High." Fuel prices have a significant impact on transportation costs, particularly for importing and exporting goods and commodities. Higher fuel prices lead to increased transportation expenses, which, in turn, result in higher prices for many products. This effect cascades through the supply chain, causing an increase in the prices of both raw materials and finished products. Businesses heavily reliant on importing and exporting goods may need to adjust their pricing strategies or explore alternative transportation methods to mitigate the impact of fuel price increases and remain competitive in the market. The findings indicate that microenterprise owners in Bad-as recognize the very high effect of fuel price hikes on transportation costs and consumer expenditure.

According to Bernanke et al. (1997), rising oil prices pass through the economy as increased production costs, leading to price inflation. Additionally, Sek et al. (2015) note that higher oil prices can induce higher production costs for exporters, leading to increased domestic price levels and indirectly contributing to domestic inflation.

Participants agreed with this indicator, as evidenced by a mean score of 3.00 and a standard deviation of 0.64, with a qualitative description of "High." The impact of high oil prices can vary depending on the type of microenterprise. Some businesses may be more resilient to price increases as they have the ability to pass on costs to customers. Conversely, other microenterprises may be more vulnerable due to their heavy reliance on fuel for their day-to-day operations. For instance, small businesses heavily dependent on transportation may find it challenging to manage their expenses during periods of high fuel prices. The study suggests that microenterprise owners in Bad-as recognize the high effect of high oil prices on their businesses, which can vary depending on their business type.

According to Bancolita et al. (2009), the impact of increasing prices varies across different types of microenterprises, depending on their income levels. Households with higher income may be less affected by fuel price hikes (Kpodar, 2006).

Overall, Table 4 presents the effects of fuel price hikes on consumer expenditure for microenterprises in Bad-as, Placer, Surigao del Norte, with an average mean of 3.35 and a standard deviation of 0.63. The study's results indicate a very high effect of fuel price hikes on microenterprises, as they struggle to cover their business operations when fuel prices rise, even though they may earn more profit, it may not be sufficient to sustain their business operations. The findings highlight the significant impact of fuel price hikes on transportation costs, consumer expenditure, and business sustainability for microenterprises in the region.

## V. CONCLUSION

In conclusion, this study delved into the effects of fuel price hikes on microenterprises in Bad-as, Placer, Surigao del Norte. Through a descriptive research design employing a survey technique, valuable insights were gained into how these businesses are impacted by fluctuations in fuel prices.

The findings revealed that fuel price hikes have substantial effects on various aspects of microenterprises in the area. Specifically, in terms of transportation, it was observed that there is a strong effect of fuel price increases on shipping fees or delivery costs. As fuel prices rise, the transportation costs of importing and exporting goods escalate, leading to higher prices for products along the supply chain. Microenterprise owners in Bad-as recognized the significance of this effect, as they are forced to pass on increased costs to consumers, impacting their pricing strategies and overall competitiveness.

Furthermore, the study highlighted that inflation is greatly influenced by fuel price hikes. The participants strongly agreed that an increase in fuel prices results in an additional cost in the prices of goods and commodities, leading to price inflation. Moreover, the distinct impact of high oil prices varies depending on the type of microenterprise. While some businesses can pass on costs to customers, others face challenges due to their reliance on fuel for operations.

Consumer expenditure was also found to be heavily affected by fuel price hikes. The rise in fuel prices puts a strain on microenterprises, making it difficult for them to cover their business operations adequately. Even though they may earn more profit, it is often insufficient to sustain their businesses, impacting their long-term viability.

Overall, the results indicate that fuel price hikes have profound implications for microenterprises in Bad-as, Placer, Surigao del Norte. These businesses are particularly sensitive to changes in fuel costs due to their dependence on transportation and the production of goods and commodities. It is evident that fuel prices play a crucial role in shaping their operational costs, pricing decisions, and overall financial stability.

As fuel prices continue to fluctuate in the global market, it is essential for microenterprise owners in the region to remain vigilant and adapt their strategies to mitigate the impact of such price changes. Exploring alternative transportation methods, sourcing locally, and implementing cost-saving measures can aid in alleviating the effects of fuel price hikes on their businesses.

In light of these findings, policymakers and stakeholders need to recognize the importance of supporting microenterprises in managing the challenges posed by fuel price fluctuations. Providing access to resources, financial assistance, and sustainable business practices can contribute to the resilience and growth of these vital components of the local economy.

Overall, this study sheds light on the complexities of fuel price hikes and their effects on microenterprises, emphasizing the need for proactive measures and support to ensure their continued contribution to economic growth and development in the region.

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