

No Such Thing as a Painless Wean

How the 2016 Fuel Subsidy Removal Affected Transport Consumption and Consumers' Coping Strategies



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Contents

List of Figures.....	4
List Of Tables	4
Acknowledgement.....	5
Acronyms.....	6
Executive Summary.....	7
1.1. Introduction	9
1.2. What are Subsidies and why are they Important?.....	9
1.3. Fuel Subsidies in Zambia.....	12
1.4. Survey Methodology	15
2. Findings	17
2.1. Survey Descriptive Statistics	17
2.2. Impact of Increased Fuel Prices: Transportation Cost.....	19
2.3. Impact of Increased Fuel Prices: Transportation Consumption.....	20
2.4. Coping Strategies	23
2.5. Level of Understanding and Support for Fuel Subsidies.....	27
3. Conclusions and Recommendations	29
References.....	31

List of Figures

Figure 1: Global Spread of Fuel Subsidies, 2010	10
Figure 2: Top 10 fuel-subsidised countries, 2014.....	11
Figure 3: Change in Fuel and Transport Fares [Index Jan 2010 = 100]	15
Figure 4: Mobile Phone Usage and Survey Distribution by Level of Education	17
Figure 5: Mode of Transportation by Average Monthly Income	18
Figure 6: Impact on Transport Costs Following the Fuel Price Increase	19
Figure 7: Change in Transport Costs by Area of Residence	19
Figure 6: Change in Transport Consumption.....	20
Figure 9: Change in Transport Consumption by Level of Income	21
Figure 8: Change in Consumption by Mode of Transportation.....	21
Figure 11: Change in Transport Consumption by Area of Residence.....	22
Figure 12: Change in Transport Consumption by Sex	22
Figure 13: Strategy to Manage High Costs of Transportation	23
Figure 14: Mode of Transportation before and after the Increase in Fuel Prices.....	24
Figure 15: Coping Strategies by Are of Residence.....	25
Figure 16: Coping Strategies by Sex.....	25
Figure 17: Coping Strategies by Mode of Transportation	26
Figure 18: Coping Strategies by Level of Income	26
Figure 19: Level of Understanding of Fuel Subsidy by Education Attainment	27
Figure 20: Support of the Fuel Subsidy by Level of Understanding	28
Figure 21: Government Communication on the Subsidy Removal.....	28

List Of Tables

Table 1: Selected National Budget Expenditure Lines, 2013	13
Table 2: Selected National Budget Expenditure Lines, 2015	14

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Special thanks to the team from ZIPAR namely Felix Mwenge and Mwanda Phiri as well as the team from CUTS namely Muntanga Musiwa and Ishmael Zulu for their contributions.

A blue ink signature, likely of Chenai Mukumba, consisting of a large, stylized 'C' followed by a series of loops and a final horizontal stroke.

Chenai Mukumba
Centre Coordinator
CUTS Lusaka

Acronyms

AE	Adult Equivalent
AfDB	African Development Bank
BTOAZ	Bus and Taxi Owners Association of Zambia
CSO	Central Statistical Office
CUTS	Consumer Unity & Trust Society
ERB	Energy Regulation Board
GRZ	Government of the Republic of Zambia
IEA	International Energy Agency
IMF	International Monetary Fund
IVR	Interactive Voice Recognition
LCMS	Living Conditions and Monitoring Survey
LPG	Liquefied Petroleum Gas
MOF	Ministry of Finance
OECD	Organisation for Economic Co-operation and Development
RDD	Random Digital Dialling
ZICTA	Zambia Information and Telecommunications Authority
ZIPAR	Zambia Institute for Policy Analysis and Research

Executive Summary

Fuel subsidies have been a great cushion for Zambian consumers allowing them to buy fuel at an affordable price. In October 2016, the Government of the Republic of Zambia removed subsidies on fuel in tandem with the 2014 policy direction of migrating towards cost reflective pricing of energy products and services. The ERB increased petrol to K13.70 a litre from K9.87; diesel to K11.40 from K8.59 and kerosene to K8.03 from K6.12. According to ERB, this increase was necessitated by the volatility and depreciation of the Zambian kwacha following the last price adjustment carried out in July 2015. Further, the price adjustment was aimed at supporting Government's fiscal objectives. The Consumer Unity & Trust Society (CUTS) and Zambia Institute for Policy Analysis and Research (ZIPAR) thus carried out research aimed at informing public debate and potential policy responses on fuel subsidies and their removal.

The objective of the research was to understand how the fuel subsidy removal affected individuals with different incomes residing in both rural and urban areas in Zambia. CUTS and ZIPAR partnered with a widely recognized leading data collection firm, Ipsos, to undertake an opinion poll on individual's perceptions regarding the removal of fuel subsidies.

The study revealed useful insights about the change in consumption as well as the coping mechanisms that individuals sought following the removal of the fuel subsidy. The main findings can be summarised as follows:

Removal of fuel subsidies in October 2016 and the subsequent increase in fuel prices affected just about everyone in the economy through increased costs of transportation in rural and urban areas. This also applies to those using private-owned cars as well as those using public transport.

Following this, the majority of respondents said they reduced their consumption (made less trips to school, work or leisure) which may have had implications on their well-being especially for productive trips. A significant proportion of respondents said they could neither reduce nor increase the number of trips but had to maintain their consumption by bearing the higher costs of transportation.

The majority of respondents said they had to shift expenditure meant for basic needs to transport to meet the increased cost of transportation. More than half of respondents earning below the minimum wage

cut back expenditure on basic needs in order to meet increased transport costs. This puts this particular income group at risk of becoming more impoverished.

Those who could not make the tradeoff but still needed to travel said they had to resort to cheaper modes of transportation. Mainly those who use private vehicles resorted to public transport raising demand for this particular mode of transport. More people had to cycle as a result.

Lastly, it was found that people generally do not understand the meaning and purpose of fuel subsidies. Surprisingly this includes those who can be considered as educated. As a result, the majority said they were not in support of the removal. Buttressing their position is the fact that they felt the Government had not communicated adequately before removing the fuel subsidy.

With these highlighted findings, we make the following recommendations:

To cushion the effects of increased costs emanating from the removing fuel subsidies, there is need to allocate more resources towards well-targeted social safety nets that have high coverage of poor households and little leakage to non-poor households. Particularly, the current Social Cash Transfer Schemes and Food Security Packs that target the poorest households in rural areas can be enhanced to play this role. A significant number of respondents including those earning less than ZMW1,000 per month reported that they reduced their expenditure on essential basic needs as a means of coping with the increased transportation costs. This renders them worse off.

While various empirical studies have shown that universal subsidies on fuel disproportionately benefit the more affluent and tend to be regressive, other studies have equally shown that subsidies reduce poverty to a certain extent and subsidies on particular fuels such as kerosene and LPG used for lighting and cooking by the poor are neutral. Government should therefore consider targeted subsidies on fuels such as kerosene used for cooking and lighting by the poor. This will alleviate the effects of increased fuel costs on the overall welfare of the most vulnerable who tend to reduce expenditure on basic needs to meet higher transportation and fuel costs. Future decisions to remove fuel subsidies should be made after conducting empirical studies and deliberating the effects of the removal on the poor. Following which, a

phased approach with gradual reductions over several months up to a year or so should be taken when phasing our subsidies to minimise the impact on the poor.

Government needs to carry out more awareness and sensitisation campaigns before implementing policies on key national issues such as subsidies. This will ensure that the public understands what they are, the cost implications and the reasons for the removal. This will further prepare consumers and garner wider public support. More efforts need to be targeted towards the population with lower levels of education since the study finds a correlation between level of education and understanding of a fuel subsidy and consequently, support for the removal.

Lastly, it is important that the Government initiates studies that determine the efficiency and cost-effectiveness of fuel procurement in Zambia in relation to other comparative competitive landlocked countries in the region. the cost structure of procuring fuel and how to minimise the cost needs to be assessed in order to ensure a lower pump price. This would lessen the burden of transport costs on the poor.

1. Overview: Fuel Subsidies and Transportation

1.1. Introduction

In October 2016, the Government of the Republic of Zambia (GRZ) removed subsidies on fuel to let its prices be determined by market forces. It is highly expected that this policy shift had both direct effects on end-users of fuel products and indirectly on consumers of fuel-input intensive goods and services. In this regard, the Consumer Unity & Trust Society (CUTS) and Zambia Institute for Policy Analysis and Research (ZIPAR) carried out research aimed at informing public debate and potential policy responses on fuel subsidies and their removal.

The objective of the research was to understand how the fuel subsidy removal affected individuals with different incomes residing in both rural and urban areas in Zambia. The study further sought to understand how consumers' welfare was affected following the removal of the fuel subsidy. More specifically, the study sought to undertake the following:

- Assess consumers' expenditure on transportation before and after the removal of the fuel subsidies;
- Measure the effect on consumption (number of trips to work, school, for leisure and other movements) by consumers following the removal of fuel subsidies;
- Investigate the substitution effects regarding the mode of transportation used following the increase in fuel prices;
- Assess the coping strategies being employed by consumers; and
- Assess general public's understanding and impressions on the removal of the fuel subsidy.

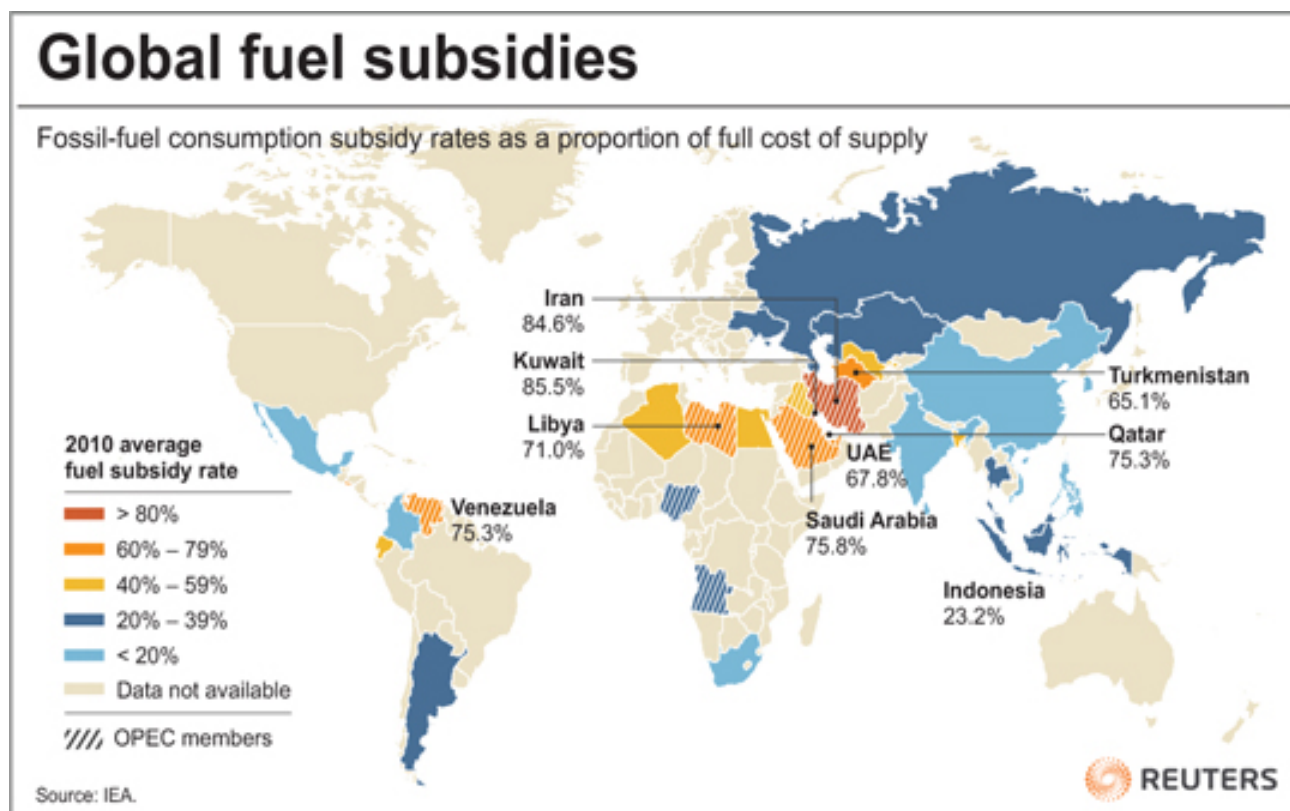
To achieve this, the study commissioned Ipsos – a widely recognised leading data collection firm – to undertake an opinion poll on individuals' perceptions regarding the removal of fuel subsidy. This paper presents and draws recommendations from mainly, but not exclusively, the analytical results of the opinion poll.

1.2. What are Subsidies and why are they Important?

Fuel subsidies are a common strategy employed by governments in many countries both developed and developing, to cushion vulnerable sections of society from the burden of high and volatile prices of goods and services. By definition, a fuel subsidy is a type of a consumer subsidy that arises when the price paid by consumers is below supply cost and/or taxes (Coady et al., 2015). The excess cost (or the subsidy) is then either covered by governments in the form of budgetary support or foregone as revenue. Petroleum remains one of the most heavily subsidised products in the world despite declining petroleum prices with the projected subsidy remaining at 1.8 percent of global GDP in 2015 (Coady et al., 2015).

Figure 1 below depicts the global spread of subsidies in 2010. The figure shows that subsidies have been prevalent in both developing and developed countries. The top 10 heavily fuel subsidised countries in 2014 are depicted in figure 2 below. On average, the top 10 countries that also happen to be oil producing countries subsidised more than 50 percent of the cost of supplying fuel products.

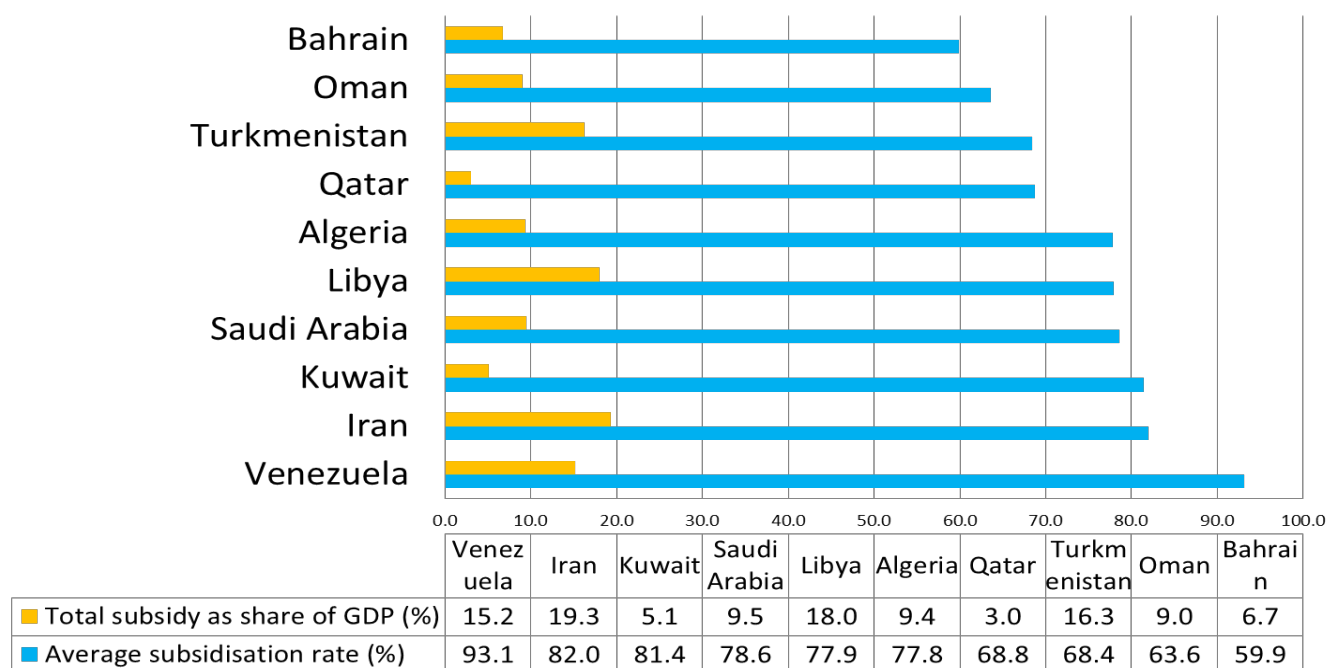
Figure 1: Global Spread of Fuel Subsidies, 2010



Source:

https://www.google.co.zm/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=oahUKEwiTm6v5xqHWAhVDuhQKH3OBokQjRwIBw&url=https%3A%2F%2Fwww.pinterest.de%2Fpin%2F96545985731891964%2F&psig=AFQjCNHbjOk8_gv3hwFYLNu2KwjiUYnq8A&ust=1505371216770505

Figure 2: Top 10 fuel-subsidised countries, 2014



Source: Authors' construction based on IEA data

Over the years, the Zambian government has made use of similar subsidies to shield vulnerable consumers from high and often volatile fuel prices. In 2016, for instance, the government paid over US\$200mn towards fuel subsidies (GRZ, 2016).

In the same year however, the Energy Regulation Board (ERB) announced the upward revision of petroleum pump prices upwards in line with the government's 2014 policy decision to remove fuel subsidies and adopt a policy direction towards cost reflective pricing of energy services and products (Mabumba, 2016; ERB, 2016). According to the ERB, the 2016 October increase was necessitated by the volatility and depreciation of the Zambian kwacha following the last price adjustment carried out in July 2015. Further, the price adjustment was aimed at supporting government's fiscal objectives.

In this regard, the ERB revised pump prices upwards (petrol increased by 38.8 percent while diesel increased by 32.7 percent) in order to ensure that all players in the petroleum supply chain operate within a pricing framework that allows them to achieve viability and a reasonable rate of return on capital employed (ERB, 2016).

The migration towards cost reflective energy products and services is not unique to Zambia. A number of countries have undertaken reforms over the years aimed at reducing and/or phasing out subsidies on fuel. Angola in 2014 reduced subsidies on gasoline. Ghana in 2015 deregulated prices of petroleum products whilst Indonesia eliminated subsidies on gasoline and capped the subsidy on diesel. Morocco similarly abolished 830 gasoline and fuel oil subsidies at the start of 2014 and diesel subsidies at the start of 2015. The UAE equally started adjusting fuel prices in 2015 to match global prices (IEA, 2015).

The removal of any subsidy is however, often met with some public resistance owing to the increased prices that soon ensue for consumers. For Zambia in particular, the removal of fuel subsidies raises concerns on the direct and indirect effects of the increase in pump prices. In addition to direct consumption, fuels are consumed indirectly through consumption of other goods and services that use them as inputs. Coady et. Al., (2016) estimate the magnitude of the indirect effect of higher fuel costs on the prices of other goods and services consumed by households. They find an effect on household real incomes ranging from 1.1 percent to 6.7 percent for the five countries they study.

However, even when direct and indirect benefits are considered, Coady et al., (2006) also find that the bottom 40 percent of the population typically receive only 15-25 percent of the value of the subsidies. This leakage of subsidies is often one of the major arguments against non-discriminatory subsidies. Various studies have found that there are leakages to the non-poor. The bottom 40 percent of the population ranked by income distribution is estimated to only receive 15-20 percent of fuel subsidies (IEA et. al., 2010).

Other opponents also argue that while subsidies can be appropriate and useful, they tend to have negative implications on the economy. First, there are usually concerns that some subsidies are inefficient as they cause situations where “price does not correspond to the overall cost to society of producing or consuming a little more or less of the good or service” (Holton, 2012). That is, prices do not equal marginal cost, so efficient resource allocation is not achieved. Eliminating such subsidies would therefore make society as a whole better off.

Rahul et. Al., (2013) add to this debate. They contend that fuel subsidies are both inefficient and inequitable. This is largely because they may encourage overconsumption of fuel, delay the adoption of energy-efficient technologies, and crowd out high-priority public spending, including spending on physical infrastructure, education, health and social protection. Universal energy-price subsidies for instance tend to be regressive as benefits are conditional upon the ability to purchase subsidised goods and increase with expenditure (IEA et. al., 2010).

Nevertheless, although subsidies are not an efficient mechanism for delivering resources to the poor, they do act to reduce poverty, albeit at a high cost. Empirical studies show that the distributional impact of subsidies is not the same for all types of fuels and electricity. Subsidies for diesel and gasoline are considered to be particularly regressive as these fuels are used primarily for private transport. Subsidies for kerosene and Liquefied Petroleum Gas (LPG) on the other hand, are potentially less regressive or even neutral as these fuels are used by the poor for cooking and for lighting in rural areas (IEA et. al., 2010)

According to the World Bank (2006), data for 2005-06 reveals that petroleum subsidies reduced the incidence of poverty by eight percent in Yemen and by about five percent in Morocco. To remove or not to remove fuel a subsidy is thus not a simple question to answer. This question becomes even more difficult to answer when

the removal of a subsidy will make the poorer worse off. For instance, Coady et al. (2006) found that the removal of fuel subsidies in the five countries surveyed would be regressive or at best, neutral. That is, it would disproportionately affect the welfare of the poor.

Notwithstanding the arguments for and against subsidies, the removal of fuel subsidies comes with welfare implications particularly for the more vulnerable. Any reforms to phase out inefficient energy subsidies must therefore include measures to mitigate likely negative impacts upon those with the lowest incomes.

1.3. Fuel Subsidies in Zambia

Fuel subsidies have been in existence in Zambia for a number of years as a means to ensure affordable fuel prices particularly over the years when international oil prices increased sharply from an average of US\$62.14/barrel in 2009 to an average of US\$107.91/barrel in 2012 (Nalishebo et. al., 2013).

One would argue that this was essential for two main reasons:

1. **The comparative cost of Zambia’s fuel in the southern African region.** According to the World Bank Development Indicators, in 2014, Zambia had the second highest pump price for diesel (US\$1.59/l) in comparison to other landlocked countries: Zimbabwe (US\$1.48/l) and Botswana (US\$1.07/l). The high cost has been attributed to a number of reasons which include the use of oil traders rather than oil producers with a short-term higher profit motive, relatively higher production costs, the feedstock configuration (Nalishebo, et. al., 2013). Whitworth (2015) contends that Zambia’s high fuel prices were largely due to inefficiencies in the way fuel was imported.

2. **Fuel is a key component that facilitates the movement of persons, goods and services.** Goods produced for export, for instance, require some form of transportation to reach export markets. Higher transportation costs would therefore render the goods traded more expensive and less competitive. In addition, the country is landlocked which implies that it has no direct access to sea ports. Industrial output is, therefore, transported through neighbouring countries that have ports. This exacerbates the cost transportation. According to the African Development Bank (2015), transport costs are estimated to add up to 40 percent of the cost of the final product. Fuel is,

therefore, a critical component of the production and distribution cost.

Further, the majority of the population in both urban and rural areas require some form of public transportation to transit to work, for business and/or other social activities. According to the 2015 Living Conditions and Monitoring Survey (LCMS), at national level, 6.5 percent of households' expenditure is spent on transport. When delineated by residence, rural households spend less than urban households at 4.1 and 7.4 percent respectively. Within the rural area stratum, small scale agricultural households with an average monthly expenditure of K698 spend 3.7 percent of their expenditure on transport. The marginal effect of any price increase in the cost of fuel is thus likely to be greater for poorer households.

With half of the population living below total (absolute) poverty line estimated at ZMW 214 per Adult Equivalent), the cost of fuel becomes particularly important as it has a bearing on one's overall welfare.

The fuel subsidy in Zambia was thus over the years, implemented by government making direct transfers to fuel importers which allowed consumers and firms alike to benefit from below market price fuel at pump. Although the ERB has been adjusting domestic fuel prices when the computed wholesale fuel price adjustment exceeds the 2.5 percent threshold as per its Cost-Plus Model since the year 2004, these adjustments have not covered the full cost of procuring and supplying petroleum products. Some level of subsidy has been in existence over the years. The following timeline of petroleum product importation, supply, distribution and consumption in Zambia is worth delving into in a bit more detail:

2013

In 2013, the government announced the removal of the fuel subsidy. In this regard, prices of petroleum products were adjusted at the pump to ensure cost recovery in the price of fuel and guarantee security of supply in the medium to long term (ERB, 2013):

- Petrol prices increased by K1.75/l, from K8.16/l to K9.91/l;
- Diesel prices increased by K1.63/l, from K7.57/l to K9.20/l; and
- Kerosene prices increased by K1.68/l, from K5.15/l to K6.83/l.

Government argued that subsidies were a substantial drain on the budget and had not benefited the poor. It further stated that the money saved from these

subsidies would in the long run go towards the improvement of social infrastructure and other social sectors (Nalishebo, et. al., 2013).

Table 1: Selected National Budget Expenditure Lines, 2013

Programme	Expenditure Outturn
Fuel Subsidy	1.6 billion
Farmer Input Support programme	1.1 billion
Social Cash Transfer Programme	16.5 million
Rural Electrification Programme	46 million
Empowerment Funds	71.5 million
Food Security Pack	28.8 million

Source: MOF, 2014

Indeed a comparison of the expenditure on a non-discriminatory fuel subsidy and other more targeted social programmes shows a disproportionate allocation of resources. While the government spent a total of ZMW1.6bn on the fuel subsidy, only ZMW16.5mn and ZMW28.8mn was spent on the Social Cash Transfer and Food Security Pack programmes respectively. To contextualise this, the expenditure on the fuel subsidy was nearly 100 times the expenditure on the Social Cash Transfer Programme.

2014

While the government announced the removal of fuel subsidies in 2013 and fuel pump prices were seemingly adjusted three times during the year 2014 to account for changes in macroeconomic fundamentals, K307 million was still spent on liquidating fuel subsidy arrears (MOF, 2015).

2015

The largest slump in oil prices since 2008 in 2014 (US\$58.33/bbl in December 2014) necessitated a further downward adjustment in the pump price of petroleum products in 2015. However, the volatility of the kwacha and the significant depreciation of the kwacha against the US dollar later experienced in the year required an upward price adjustment. This was followed by another

upward adjustment as the kwacha continued to perform badly.

Notwithstanding, these upward price adjustments did not ensure full cost recovery of supplying fuel products. Government spent a total of ZMW2.7 billion on fuel subsidies in this year. This was 20 times the expenditure on the Social Transfer Programme and more than 100 times what was spent on the Food Security Pack.

Table 2: Selected National Budget Expenditure Lines, 2015

Programme	Expenditure Outturn
Fuel Subsidy	2.7 billion
Farmer Input Support programme	2.1 billion
Social Cash Transfer Programme	123 million
Rural Electrification Programme	55.6 million
Empowerment Funds	22.7 million
Food Security Pack	25.1 million

Source: MOF, 2016

2016

In October 2016, the ERB announced the upward revision of petroleum pump prices upwards in line with the government's 2014 policy decision to remove fuel subsidies and adopt a policy direction towards cost reflective pricing of energy services and products (ERB, 2016). This implied that the government would no longer subsidise fuel and any future upward or downward adjustments would solely be determined by market fundamentals, mainly changes in the

international price of fuel as well as the exchange rate of the kwacha to the US\$.

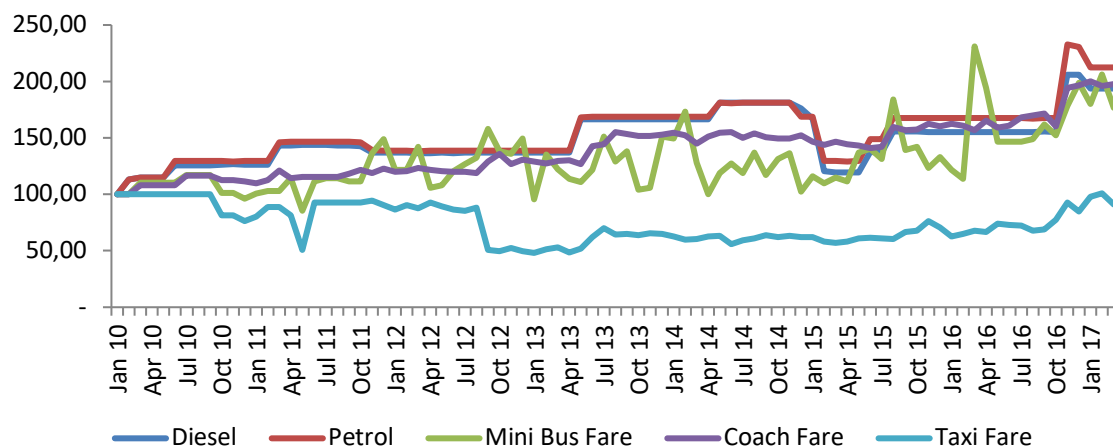
The primary reason for the fuel subsidy removal alluded to this time was the cost (ZMW3.8bn in 2016 and the highest yet in nominal terms) and fiscal pressure that the subsidy exerted on the Treasury which made the subsidy unsustainable. With a prevailing significant high fiscal deficit, there was need for the government to cut spending on some sectors in order to relieve pressure on the Treasury. For instance, Zambia's fiscal deficit was estimated at seven percent for the 2017 Budget. Reducing the fiscal deficit therefore required reducing government expenditure and this entailed cutting back on certain expenditures, such as subsidies.

The 2016 October fuel increase was prompted by the volatility and depreciation of the Zambian kwacha following the last price adjustment carried out in July 2015 (ERB, 2016). Fuel prices were thus adjusted as follows:

- Petrol prices increased from K9.87/l to K13.70/l;
- Diesel prices increased from K8.59/l to K11.4/l;
- Kerosene prices increased from K6.12/l to K8.03/l; and
- Low sulphur gas oil (diesel) prices increased from K10.88/l to K13.69/l.

In turn, the increase in the pump price of fuels triggered an increase of 15 percent in long distance route fares; 18 percent in inter-town route fares and increments of between K0.50 to K1.50 for local route fares within town depending on the distance (Daily Mail, 2016). Figure 1 correlates fuel prices with transportation service fares over the period 2010-2017. The indices of the fuel and transport fares move in unison. This demonstrates the relationship between the pump price of fuel and cost of transportation.

Figure 3: Change in Fuel and Transport Fares [Index Jan 2010 = 100]



Source: Author's own construction based on CSO prices unit data

2017

ERB revised pump prices downwards for petroleum products by K1.20 for petrol; 68 ngwee for diesel; by K1.22 for kerosene; and 68 ngwee for Low Sulphur Gas (diesel). This adjustment was a result of decrease in the cost of importing petroleum products owing to the appreciation of the kwacha and not the reintroduction of the fuel subsidy. This study however, limits its discussion and analysis to the effects of the upward revision carried out in October 2016 and the removal of the fuel subsidy.

1.4. Survey Methodology

The survey and instruments was conceptualised and designed jointly by CUTS and ZIPAR. The research questions were similarly developed collaboratively between ZIPAR and CUTS with both institutions drawing on their knowledge and understanding of consumer behaviour and transport. The survey was implemented by Ipsos on behalf of CUTS and ZIPAR.

Sample design

A predetermined individual-level sample size of 1,000 respondents was targeted premised on two criteria. First, the size was large enough to ensure variability in responses from respondents. Second, time and financial constraints could not permit a larger sample.

This sample was drawn from the true population of individuals who own mobile phones in Zambia estimated at 6,951,482 (ZICTA, 2015).

The sample was then distributed according to the demographic characteristics (sex, age etc.) of the population in the 2010 census (Central Statistical Office 2010 National Housing and Population Census). This was applied across 10 provinces. The distribution of the sample according to urban and rural location was also based on the 2010 Census ratio of 40:60 respectively.

Sample Allocation

Based on the sample design, the sample was stratified according to province and urban and rural location. Due to the low response rate usually associated with the method used for data collection (telephonic interviews), the number of respondents allocated for each stratum was three times the required number. This was to cater for non-responses, elimination of respondents who had taken part in a survey within the last six months and for the phone numbers that were no longer in use.

Data Collection

The questionnaire was programmed into computer software which enabled enumerators to access it on a desktop computer. The method used for data collection was Computer Assisted Telephonic

Interviews (CATI). 10 enumerators were assigned a database for each province to conduct interviews. The

questionnaire had an introductory part which explained who the caller was (and from Ipsos), the reason for call and the purpose of the interview. Consent was sought from the respondent before the enumerator commenced with the interview. Questions were also asked to filter out respondents below the age of 18 and those who do not use public, private or both modes of transportation. The average length of the interview took 20 minutes including introduction. The opinion poll gathered 1,010 responses from a target of 1,000. This represents a response rate of 101 percent that was as a result of sample boosting. While the survey included questions on consumers' experience of the fuel price decrease in January 2017 the report only focuses on the effects of the October 2016 that had a larger price change and thus more significant impact. This may present some bias with regard to how accurately individuals recalled their experiences prior to the downward price adjustment and is therefore one of the limitations of the study.

Data Processing

After completion of an interview the data was automatically saved to a database on a cloud server where the Quality Control Assistant and the Field Manager could download and check for logic, completeness and quotas for each enumerator. After the data quality checks, the data was saved. The Data Processing team then downloaded the data for processing (final cleaning).

Data Weighting and Analysis

The sample data was weighted on the 2010 Census population demographic proportions of sex, and rural and urban distribution. This generates a projected population size of 6,222,313 giving rise to variance of 729,169 compared to the population reported in the 2015 ICT ZICTA Survey (6,951,482). This variance is on account of the exclusion of the age group 10-17 years which is below the legal age of 18 years. The data was analysed using descriptive statistics in Stata. Association between variables was also examined using cross tabulations. For these, the Pearson Chi Square was used to determine significance.

Study Limitations

1. By design, the sample had a selection bias that emanated from the methodology employed in collecting the data. The sample was drawn from a biased sub-population of individuals who own a mobile phone and use either public or private transportation.

As a result, responses may not fully reflect experiences of individuals who do not own a mobile phone. Individuals facing extreme poverty without access to a mobile phone as well as those who do not use public or private transported are thus likely to be excluded.

Further, the study may have inadvertently captured an urban biased sample since people in 'rural areas' maybe have been people in urban centres of predominantly rural districts or areas.

2. The data collected relied on Recall as opposed to the Diary methods. Since individuals quite often suffer from memory lapses, they may not be in a position to account for all their consumption expenditures incurred. The accuracy of the information obtained is thus subject to how well individuals recall their experiences.

3. The study did not distinguish between essential trips for socio-economic welfare and leisure trips. Therefore, the analysis relating to the changes in the consumption of transport relates to trips for both leisure and socio-economic activities. Further, the study does not obtain information on the quantity of trips undertaken. Thus, the magnitude of change is not calculated for many of the variables.

2. Findings

2.1. Survey Descriptive Statistics

The opinion poll was representative of the population aged 18 and above who own a mobile phone in Zambia. It covered both males and females in all 10 provinces of Zambia. The largest number of respondents was from Lusaka and the Copperbelt which accounted for 19 and 16 percent of the population respectively. Of these, the majority was female at (51 percent) compared to males (49 percent). More than 50 percent of the population was rural residents (57 percent) compared to 43 percent urban residents. This distribution conforms to the national distribution as per national surveys such as the Census.

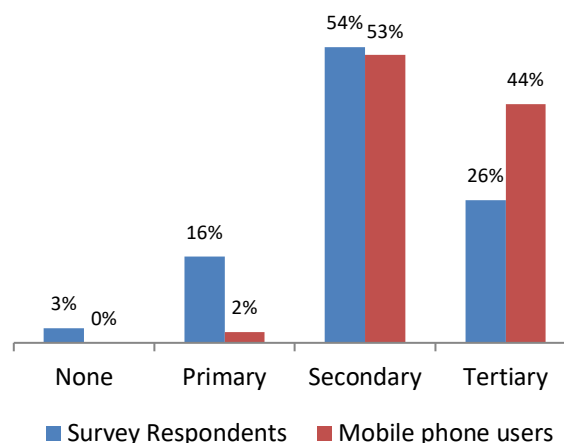
The age distribution of the population shows variation with the majority (37 percent) falling in the age group 25-34.

The majority of respondents (54 percent) had secondary education followed by those who had tertiary education (26 percent). Approximately 16 percent had primary education while three percent said they had never attended school. Nearly one percent did not report their education status.¹ The distribution of the population by education while different from the overall population distribution depicted by the 2010 Census corresponds with the findings of the Zambia Information and Telecommunications Authority (ZICTA) report on the use and ownership of mobile phones.²

According to the report the majority of mobile phone users have secondary education followed by those with tertiary education as shown in Figure 2. Because the survey design was inherently biased towards mobile phone ownership, this distribution was expected.

Approximately 47 percent of the population was employed. Of these, the majority, at 38 percent were self-employed while 22 percent and 14 percent reported full-time and part-time paid employment respectively. This is in line with population's employment status as depicted in the 2014 Labour Force Survey which shows that the self-employed always account for the majority.

Figure 4: Mobile Phone Usage and Survey Distribution by Level of Education



Source: Authors' Own Construction based on data from ZICTA and the survey

The majority of the population (52 percent) earned between ZMW501 and ZMW5,000 while 24% reported monthly incomes below ZMW500. The latter income group is of particular interest because the working poor fall into this income bracket and this income is below the minimum wage of ZMW520. According to the CSO poverty estimates, the total (absolute) poverty line was estimated at ZMW 214 per Adult Equivalent in 2015. The absolute poverty line typically specifies the amount of money that is required to meet a minimum standard of living, such as basic nutritional requirements and essential non-food necessities, such as basic clothing, housing, etc. (CSO, 2016). This implies that respondents earning less than ZMW214 per month are poor.

Only six percent of the population had earnings ranging between ZMW5,001 and ZMW10,000 while less than one percent earned above ZMW10,000. About 18% of the population did not reveal their income.³ The income levels, though self-reported are comparable to those reported in larger surveys such as the Labour Force

¹ CUTS/ZIPAR Public Poll: 'Q3. What is the highest level of formal education you have completed?' n = 1,010; N = 6,222,313

² ZICTA: Survey on access and usage of information and communication technology by households and individuals in Zambia, 2015.

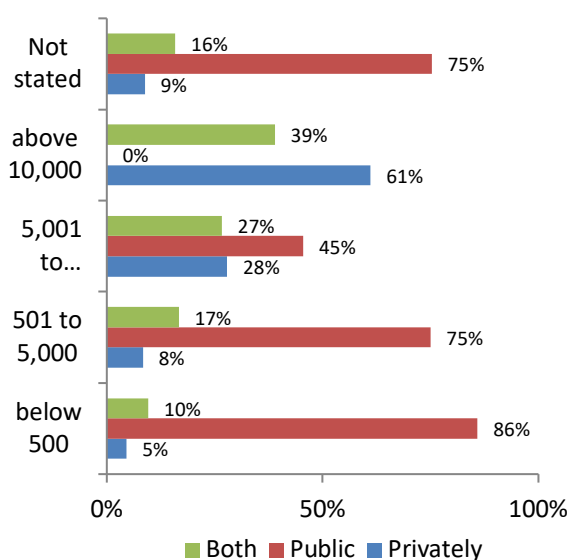
³ CUTS/ZIPAR Public Poll: 'Q17. What was your average personal monthly income last month?' n = 1,010; N = 6,222,313

Survey in which the majority of paid employee on average earn between K520 and K3,499.

Most individuals (75 percent) said they use public transport as their mode of transport compared to nine percent who used privately owned motor vehicles. Public transport in this study refers to use of a mini bus or hiring a taxi while private transportation refers to driving own car. Approximately 15 percent said they use both private and public transport.⁴ This reveals that

while a significant number of the population does not use privately owned-motor vehicles, they use some form of public transportation and will thus be affected by the rise in fuel pump prices through higher bus or taxi fares. When delineated by income, the majority in each income group used public transportation with the exception of those earning above ZMW10,000. The most commonly used mode of transportation for this income group is private (61 percent).

Figure 5: Mode of Transportation by Average Monthly Income



Source: Author's own construction based on survey data

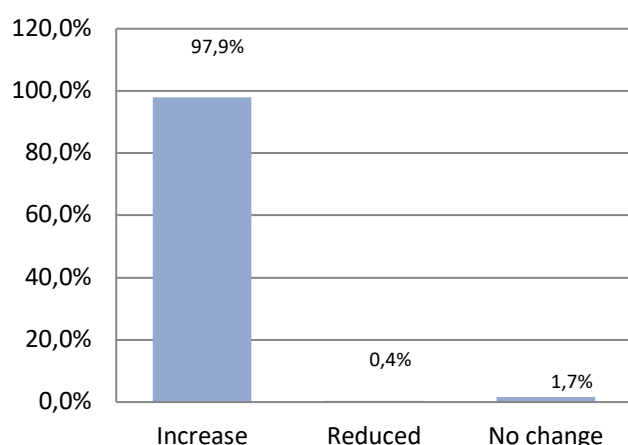
⁴ CUTS/ZIPAR Public Poll: 'Q2. Do you use fuel in any of the following ways?' n = 1,004; N = 6,179,115

2.2. Impact of Increased Fuel Prices: Transportation Cost

Typically, with a rise in fuel costs, an increase in transportation costs for consumers soon ensues. For instance, following the fuel increase in October, the Bus and Taxi Owners Association (BTOAZ) increased bus fares for various routes. It is thus not surprising that nearly all respondents (97.9 percent) said they faced increased costs of transportation following the October 2016 fuel price increase necessitated by the removal of the fuel subsidy irrespective of the mode of transportation. Less than two percent said transport costs did not increase while 0.4 percent said transportation costs actually reduced over the same period.⁵ While the later finding is rather counterintuitive, this could be as a result of a reduction in the number of trips (for various reasons) undertaken by commuters.

Nearly all individuals experienced higher costs of transportation following the fuel price increase.

Figure 6: Impact on Transport Costs Following the Fuel Price Increase



Source: Author's own construction based on survey data

Higher costs of transportation were also experienced in both urban and rural areas. More than 90 percent of the population in both rural and urban areas said they experienced increased transportation costs following

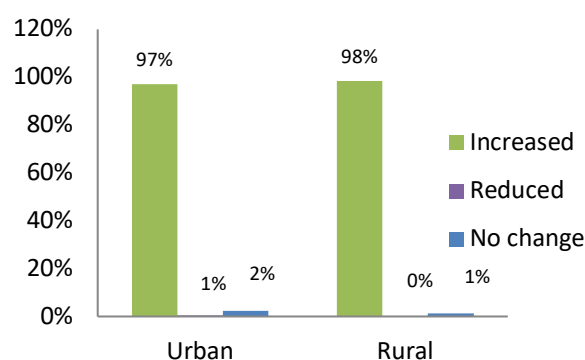
fuel price increases as a result of the removal of fuel subsidies.⁶

With the majority of Zambia's poor population residing in rural areas, this result suggests that vulnerable households in rural areas are also likely to be affected by the increase in fuel prices, albeit to a lesser extent compared to their urban counterparts. This is because public and private motorisation is not the frequent mode of transportation used in rural areas.

Traditionally, walking is the commonly used mode of transportation unless for inter-town and long distance travel.

Only a few individuals, two percent and one percent in urban and rural areas respectively, said transport costs remained the same even after an upward change in the price of fuel and the subsequent adjustment in bus fares. The increase in transport fares by the BTOAZ following the removal of the fuel subsidy in October 2016, naturally led to an increase in the cost of transportation in both rural and urban areas. It should be acknowledged however that the survey did not measure the actual individual transport cost increases.

Figure 7: Change in Transport Costs by Area of Residence



Source: Author's own construction based on survey data

⁵ CUTS/ZIPAR Public Poll: 'Q7. In October, 2016, the Energy Regulation Board (ERB) increased petrol to K13.70 a litre from K9.87; diesel to K11.40 from K8.59 and kerosene to K8.03 from K6.12. How did this price increase in pump prices

affect your expenditure on transportation?' n = 1,010; N = 6,222,313.

⁶ CUTS/ZIPAR Public Poll: Cross tabulation of change in transportation costs by location. n = 1,010; N = 622,231

2.3. Impact of Increased Fuel Prices: Transportation Consumption

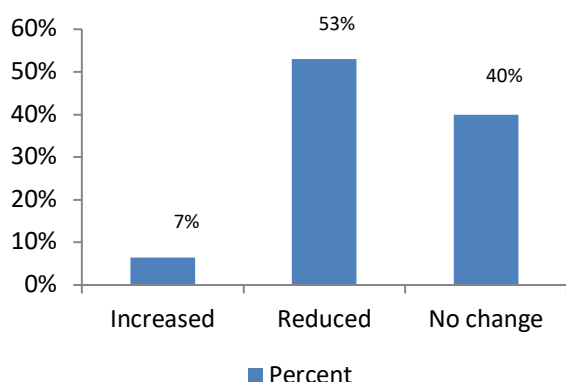
With higher fuel costs, it is likely that consumers may reduce their number of trips all things being equal. In this regard, the survey asked respondents whether they reduced the consumption of transportation (measured by the number of trips taken to work, school, for leisure and other movements) following the increase in transportation costs triggered by fuel increases resulting from the removal of fuel subsidies. Figure 6 shows the reaction of the population to the increase in the cost of transportation.

Overall, more than half reduced the number of trips they make as a result of the increase in transportation costs while 40 percent said they maintained the same number of trips regardless of increase in transportation costs. The 40 percent of the population who did not change their consumption suggests that their consumption is inelastic. For instance, this could consist of individuals who work or are involved in activities outside their residence that require them to move. Hence, they did not have a choice but still had to move even under increased transport costs. Only seven percent said they increased the number of trips they take despite transport costs going up.⁷ This could be as a result to increased activity.

activities. Over 20 percent of respondents in each income group demonstrated inelastic demand for the number of trips they take. These reported no change in their number of trips despite facing higher transportation costs. Equally, individuals who refused to disclose their income exhibited a similar pattern. A relatively smaller proportion of respondents in each income group increased the number of trips following increased transportation costs.

The majority of respondents reported having reduced their transport consumption following fuel price increase while a significant number maintained the same as before.

Figure 8: Change in Transport Consumption



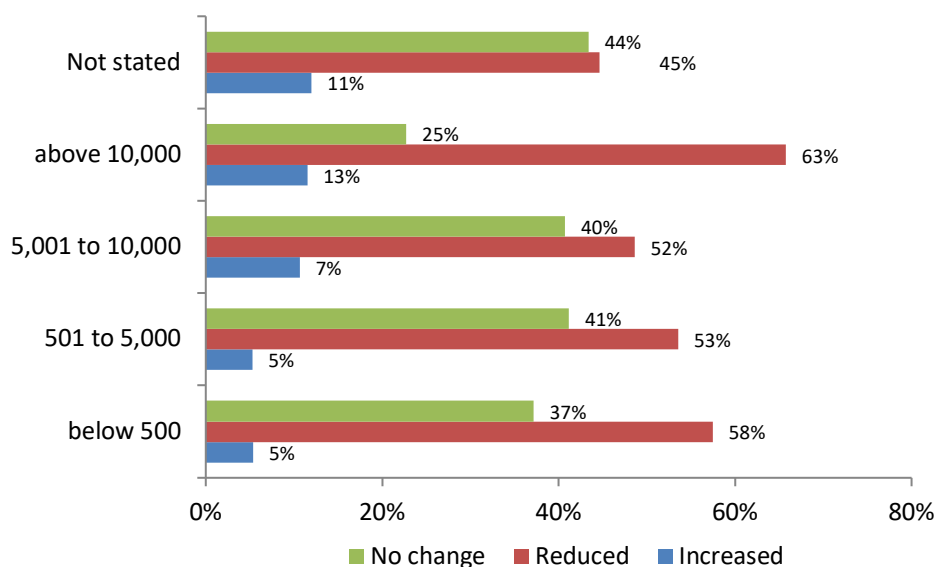
Source: Author's own construction based on survey data

The reaction to the increased cost of transportation following fuel price hikes was not statistically associated to the level of ones' income at five percent level of significance.⁸ The majority of individuals in each income bracket reduced the number of trips for various

⁷ CUTS/ZIPAR Public Poll: 'Q9 Has there been a change in your consumption of transportation (number of trips to work, school, for leisure and other movements) following the increase in fuel pump prices in October, 2016?' n = 1,010; N = 6,222,313

⁸ CUTS/ZIPAR Public Poll: Cross tabulation of change in consumption by income. Pearson chi2 (8) = 16.4931; P value = 0.0576; n = 1,010; N = 6,222,313

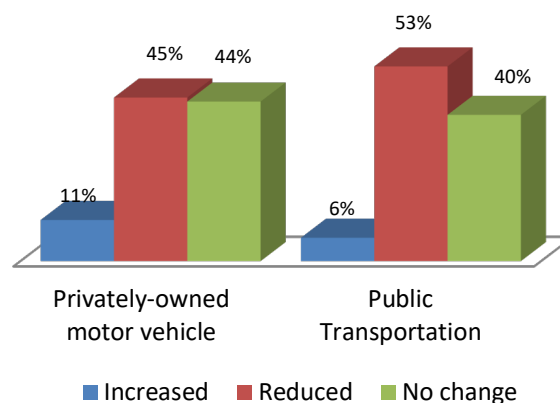
Figure 9: Change in Transport Consumption by Level of Income



Source: Author's own construction based on survey data

For both public and private transport consumers, the majority (53 percent and 45 percent respectively) said they had to cut on their number of trips following the rise in fuel prices. There is no statistical significance of association between change in consumption and the mode of transportation used.⁹ Equally, a significant number of individuals - 40 percent and 44 percent - using public and private transport respectively, did not change their consumption after experiencing increased transportation costs following the increase in fuel prices. On the other hand, a few individuals reported to have increased their consumption following the change in fuel prices.

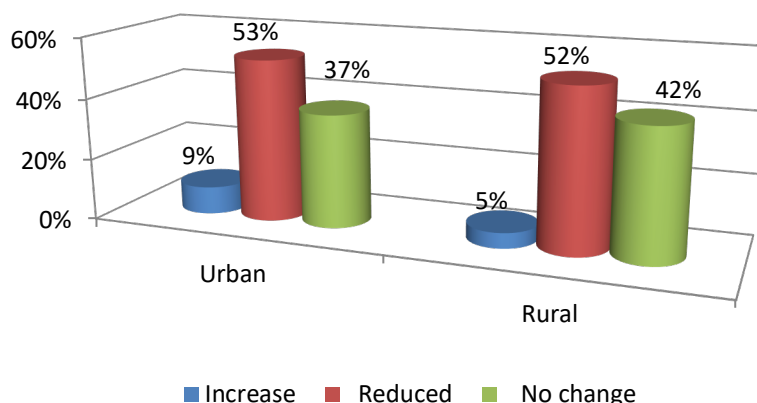
Figure 10: Change in Consumption by Mode of Transportation



Source: Author's own construction based on survey data

⁹ CUTS/ZIPAR Public Poll: Cross tabulation of change in consumption by mode of transportation. Pearson $\chi^2(4) = 4.8808$; P value = 0.3540; n = 1,004; N = 6,179,115.

Figure 11: Change in Transport Consumption by Area of Residence



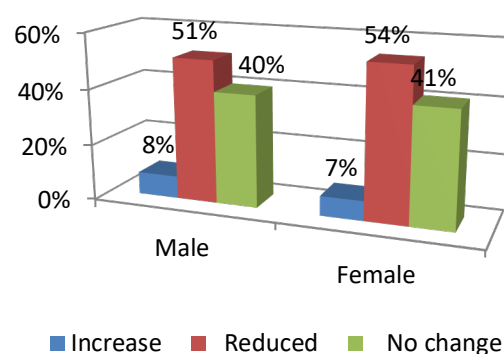
Source: Author's own construction based on survey data

With regard to the cost of fuel being only an urban concern, the survey reveals that both the urban and rural populace are affected. Even then it is true that motor vehicle transportation may not be a major mode of transport in rural areas. For rural respondents who said they use motor vehicle transportation, more than half said they reduced their number of trips following the increase in transportation costs. There was little variation in the responses of urban residents as 53 percent also gave the same response. Slightly more rural residents (42 percent) compared to 37 percent of urban residents said they had to maintain the same number of trips taken before regardless of the increase in fuel prices.¹⁰

Both males and females responded in a similar way when transportation costs went up. Approximately 51 percent and 54 percent of males and females respectively said they reduced their number of trips. Similarly 40 percent and 41 percent of males and females respectively said they had to maintain the same number of trips regardless of the increase in the cost of transportation. Only few respondents, eight percent for

males and seven percent for females said they travelled more regardless of the increase in the cost of transportation.¹¹

Figure 12: Change in Transport Consumption by Sex



Source: Author's own construction based on survey data

¹⁰ CUTS/ZIPAR Public Poll: Cross tabulation of change in consumption by location. Pearson $\chi^2(4) = 7.8808$; P value = 0.0306; n = 1,010; N = 6,222, 312.

¹¹ CUTS/ZIPAR Public Poll: Cross tabulation of change in consumption by location. Pearson $\chi^2(4) = 7.8720$; P value = 0.1805; n = 1,010; N = 6,222, 312.

2.4. Coping Strategies

It is common for consumers to develop coping strategies when prices of goods and services are adjusted upwards especially if there are no increases in their incomes to offset price increases.

This section highlights the coping strategies that respondents said they employed when the cost of transportation went up as a result of the increase in fuel prices triggered by the removal of the fuel subsidy. The responses were taken and reported as given by respondents and the study design did not have a way of confirming how true and accurate these were. Nonetheless, literature has shown that subsidy removal reforms tend to have negative impacts on different social groups including the poor and Zambia is not expected to be an exception.¹²

Approximately three in every five respondents said they had to cut expenditure on basic needs (health,

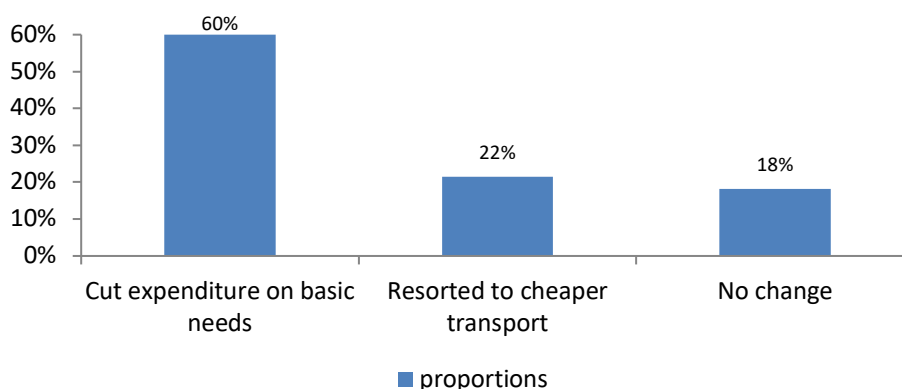
education and food etc.) as a way of coping with the increased cost of transportation while about one in every five said they resorted to a cheaper mode of transport. Approximately one in six people said they continued meeting their costs of transportation without cutting expenditure on basic needs or finding cheaper means of transportation.¹³

The majority of the respondents said they shifted expenditure from basic needs towards transport while a few resorted to cheaper modes of transport as coping strategies

The high proportion of respondents reporting a shift in expenditure from basic needs to meet transport costs indicates that individuals do not have sufficient income to increase allocations to their transportation

costs without suffering any setback on their consumption of other essential items. Hence, consumers are faced with the task of making tough choices between maintaining their usual number of trips often required for important activities such as work, and maintaining their consumption of basic needs.

Figure 13: Strategy to Manage High Costs of Transportation

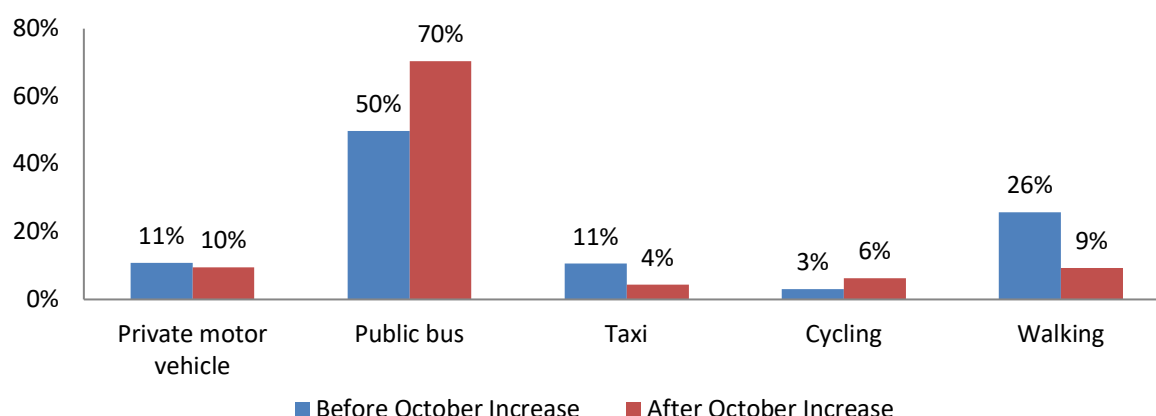


Source: Author's own construction based on survey data

¹²Analysis of the scope of energy subsidies. Joint report prepared for submission to the G-20 summit meeting Toronto (Canada), 26-27 June 2010.

¹³ CUTS/ZIPAR Public Poll: Tabulation of coping strategies used. n = 1,010; N = 6,222, 312.

Figure 14: Mode of Transportation before and after the Increase in Fuel Prices



Source: Author's own construction based on survey data

For respondents who reported to have resorted to a cheaper mode of transportation, Figure 12 shows the mode of transportation used before and after the increase in the price of fuel. Before fuel was increased, half of the population travelled using public buses, 26 percent were walking while equal proportions (11 percent) used private motor vehicles and taxis. Only three percent were cycling. Following fuel prices increase there was an increase in the number of public bus users from 50 percent to 70 percent. At the same time, the proportion of those who used private motor vehicles and taxis reduced to 10 percent and 4 percent respectively.¹⁴

Thus, public buses have a larger positive substitution effect while taxis have the largest negative substitution effect. We also note an increase in the proportion of those using cycling from three to six percent. Interestingly, there were fewer people walking after fuel price increase than before. While this is counterintuitive as more people are expected to be walking after fuel goes up and not the other way round since walking uses no fuel, this finding is explained by the employment status of the individual. A cross tabulation of employment status by mode of transportation reveals that 68 and 67 percent of respondents using walking as the mode of transportation before and after the fuel subsidy removal respectively, did not have a job. This implies that their movements were not for binding work purposes but for other activities which are relatively more flexible. Therefore, the movement of these

individual is quite elastic and can reduce substantially according to want.

For the rest of the observations, the demand for public buses significantly increased when fuel prices went up while the demand dropped significantly for taxis but not so much for private motor vehicle users.

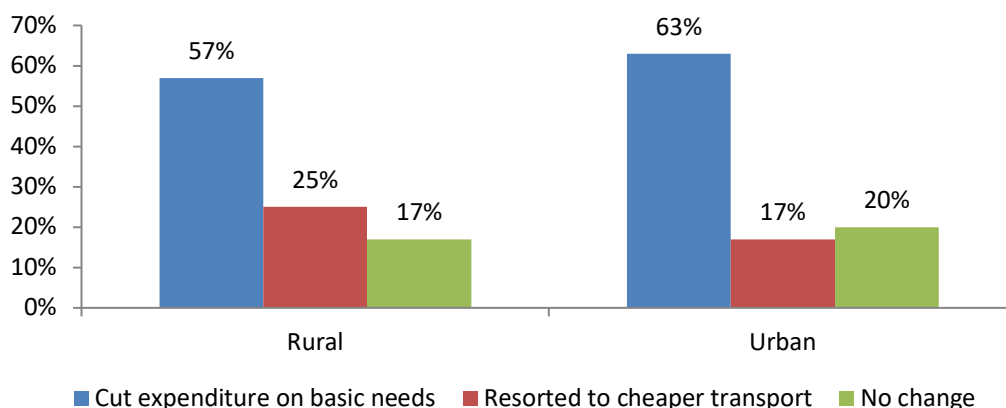
While rural and urban residents employ similar coping mechanisms, more urban residents (63 percent) said they shifted expenditure from basic needs to transport to meet higher transportation costs compared to rural residents (57 percent). On the other hand, more rural respondents (25 percent) resorted to cheaper modes of transport compared to 17 percent of urban residents. Furthermore, more urban residents (20 percent) said they did not employ any coping strategy than rural dwellers (17 percent).¹⁵

These reactions between rural and urban residents could be explained from various viewpoints. Most obvious, there are fewer transport options for those living in the urban areas than those in rural areas making it harder for the former to find cheaper options. Urban dwellers often live far from where they work which is a common characteristic of city life. Thus options may mean walking for longer distances that may not be efficient. The more efficient option for them though costly is to compromise spending on basic needs to meet the cost of transportation. Unless it is for long distance trips, rural residents often walk or cycle within the local areas.

¹⁴ Note: There is a significant difference between Modes of transportation before and after the increase in October. P value= 0.0000, for the Chiz.

¹⁵ CUTS/ZIPAR Public Poll: Cross tabulation of coping strategies by location. Pearson chi2 (4) = 10.8487; P value = 0.007; n = 1,010; N = 6,222, 312.

Figure 15: Coping Strategies by Are of Residence



Source: Author's own construction based on survey data

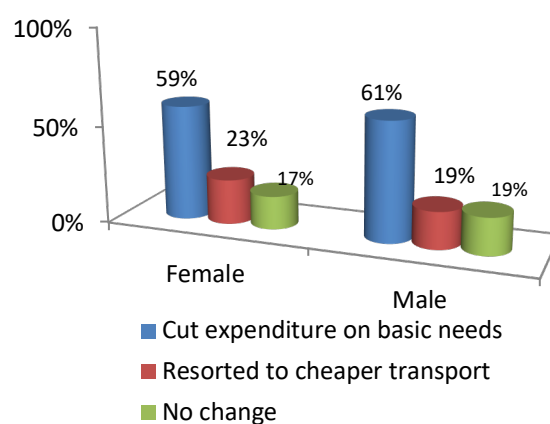
Both males and females reacted in a similar way with regard to the increase in transportation costs. Males had the larger proportion (61 percent) shifting expenditure from basic needs to transport to meet the higher cost of transportation compared to females (59 percent). But this was not statistically significant. On the other hand females had the larger proportion (23 percent) resorting to cheaper modes of transport than males (19 percent). Approximately 17 percent of females and 19 percent of males said they did not use any coping strategy.¹⁶

On the other hand, coping strategies differed between the types of transportation respondents used. More respondents (63 percent) using public transport reported shifting expenditure from basic needs to transport to meet the increased cost of transportation compared to 50 percent of those who used private transportation. It is not very clear why more people who use public transport reported shifting spending from basic needs as a coping mechanism. This difference could be as a result of relatively inelastic demand for public transport users owing to fewer substitution options for important trips such as transiting to and from work. In contrast, those who own private transport have more flexibility to limit their movements to strictly necessary ones as one way of managing costs and coping with increased fuel prices.

About 19 percent of respondents using public transport said they resorted to cheaper modes of transport

compared to 27 percent of those using private transport.¹⁷

Figure 16: Coping Strategies by Sex

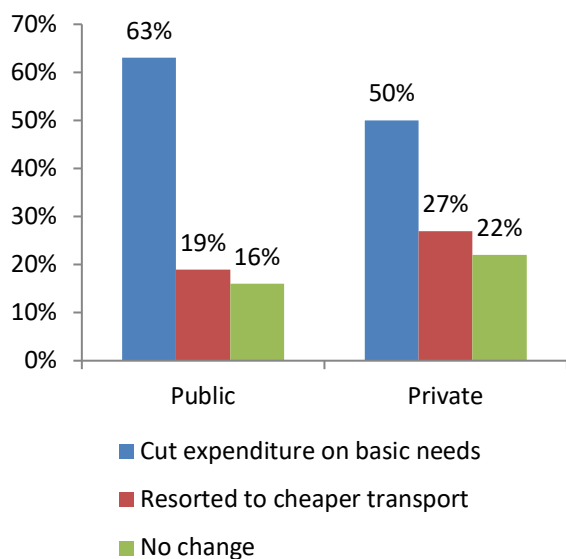


Source: Author's own construction based on survey data

¹⁶ CUTS/ZIPAR Public Poll: Cross tabulation of coping strategies by sex. Pearson chi2 (2) = 2.4209; P value = 0.3311; n = 1,010; N = 6,222, 312.

¹⁷ CUTS/ZIPAR Public Poll: Cross tabulation of coping strategies by modes of transport. Pearson chi2 (2) = 14.9608; P value = 0.0013; n = 1,010; N = 6,222, 312.

Figure 17: Coping Strategies by Mode of Transportation



Source: Author's own construction based on survey data

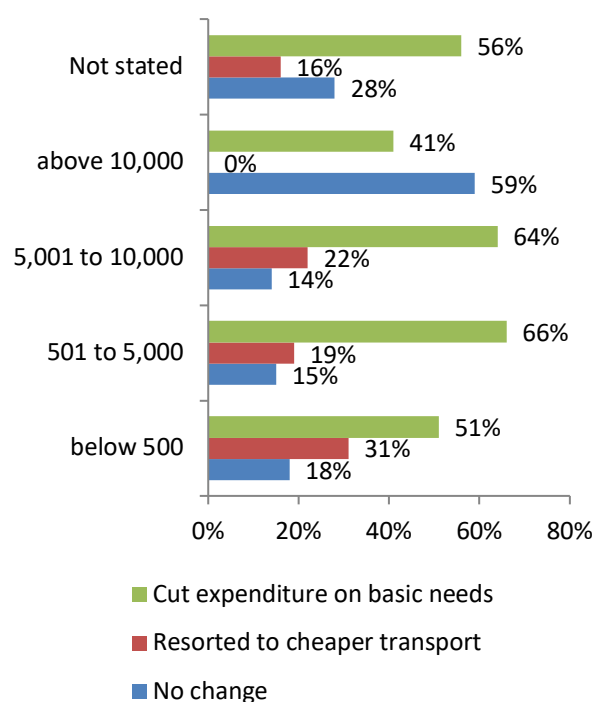
It is expected that more of those using private transport should opt for cheaper modes of transport such as public transportation which costs less. This is because paying a bus fare is cheaper in monetary terms than buying fuel for a private car. Thus, one using private transport has more options than one using public transport.

Assessing coping strategies by respondents' reported incomes reveals a correlation between income and coping strategies. More than half of the respondents earning below the minimum wage cut back expenditure on basic needs in order to meet increased transport costs. This is of particular concern because this group, as earlier indicated includes those whose income falls below the minimum wage who can also be referred to as the working poor. This seemingly reduction in

expenditure on basic needs puts them at risk of becoming more impoverished.

Similarly, 66 percent of those in the income brackets 501-5,000 and 64 percent of those in the income bracket 5,001 to 10,000 shifted expenditure from basic needs to meet higher transport costs. In contrast, the majority of those earning above 10,000 did not report a change. Only 41 percent said they had to shift expenditure meant for basic needs to meet the increased cost of transportation.¹⁸ None of those in the highest income bracket said they resorted to cheaper modes of transport.

Figure 18: Coping Strategies by Level of Income



Source: Author's own construction based on survey data

¹⁸ CUTS/ZIPAR Public Poll: Cross tabulation of coping strategies by income levels. Pearson $\chi^2(8) = 40.9628$; P value = 0.000; n = 1,010; N = 6,222, 312.

2.5. Level of Understanding and Support for Fuel Subsidies

The ability of citizens to comprehend policy issues is necessary if they are to appreciate and support government's policy decisions. It is thus imperative to ensure that issues such as subsidies or lack thereof are well articulated, communicated and understood by everyone in order to prevent public discord. The survey thus sought to gauge the public's awareness and support of the fuel subsidy removal.

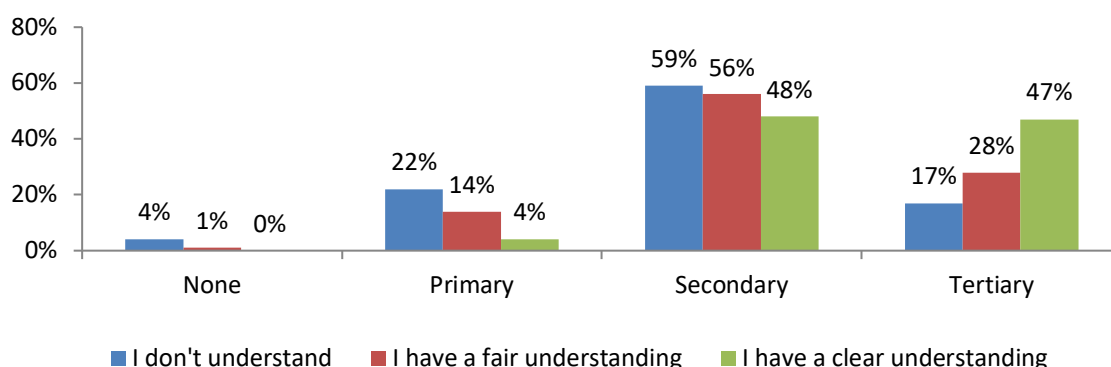
Respondents were asked to state if they understood the meaning of fuel subsidies and how they work. It is widely accepted that the level of one's understanding is likely to be correlated with one's education attainment. More educated individuals tend to be more enlightened and open to new ideas making them easy to adjust to change. Thus, the subsidy understanding variable was cross tabulated with level of education attainment.

The study finds a correlation between one's education attainment and understanding of a fuel subsidy. More individuals with tertiary education (47 percent) said they had a clear understanding of fuel subsidies. On the other hand, the majority of individuals with secondary

education (59 percent) did not understand what a fuel subsidy is. Only four percent of those with primary education had a clear understanding of what a subsidy is. Among those who said they did not understand a fuel subsidy 17 percent had tertiary education while 22 percent had primary education. About 28 percent of those with tertiary education said they had a fair understanding of what a fuel subsidy is.¹⁹

Incidentally, support of the fuel subsidy removal is correlated with the level of understanding. The majority of those who did not support the subsidy (53 percent) are those who did not understand it. This was followed by those who had a fair understanding (32 percent). The majority of those in favour of the subsidy are those who said they had a fair understanding of the subsidy. This is interesting as one would expect that those with a clear understanding will be the majority to support the subsidy. There was little difference in terms of proportions between those who supported the subsidy and had a clear understanding and those who did not support it who did not understand it. The proportions were 29 percent and 28 percent respectively.²⁰

Figure 19: Level of Understanding of Fuel Subsidy by Education Attainment

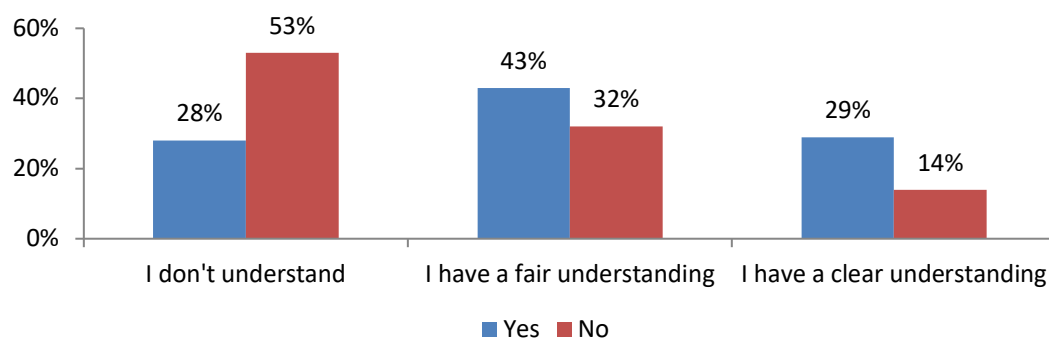


Source: Author's own construction based on survey data

¹⁹ CUTS/ZIPAR Public Poll: Cross tabulation of level of understanding by education attainment. Pearson χ^2 (8) = 90.8178; P value = 0.0000; n = 1,010; N = 6,222, 312.

²⁰ CUTS/ZIPAR Public Poll: Cross tabulation of level of understanding by support for fuel subsidy removal. Pearson χ^2 (2) = 60.1701; P value = 0.0000; n = 1,010; N = 6,222, 312.

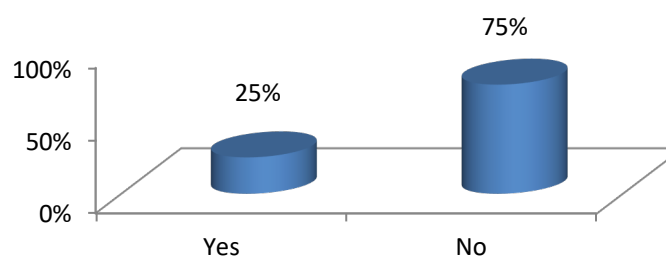
Figure 20: Support of the Fuel Subsidy by Level of Understanding



Source: Author's own construction based on survey data

Respondents were also asked to indicate their perceptions on the extent to which government communicated reasons for removing the fuel subsidy. Results are presented in Figure 19. Approximately 75 percent said that the government did not communicate adequately compared to 25 percent who said communication was adequate.²¹ However, it is not clear if more sensitisation would have led to support for the removal of fuel subsidy. International literature shows that adequate communication is important in ensuring public support when introducing subsidy reforms.

Figure 21: Government Communication on the Subsidy Removal



Source: Author's own construction based on survey data

²¹ CUTS/ZIPAR Public Poll: Tabulation of extent of communication. n = 1,010; N = 6,222, 312.

3. Conclusions and Recommendations

The study reveals useful insights about the change in consumption as well as the coping mechanisms that individuals employed following the removal of the fuel subsidy. It should be noted that the study was based on a survey of respondents located in all provinces of Zambia whose perceptions were obtained via telephonic interviews.

While the survey covered all provinces in Zambia in both urban and rural areas, it had a selection bias emanating from limited use or ownership of mobile phones. Data from ZICTA shows that most mobile phone owners are those who have completed secondary education. Indeed, the majority of respondents in this study fall in this category.

Nonetheless, the results bring out some expected results on this subject. The main findings can be summarised as follows:

- Removal of fuel subsidies in October 2016 and the subsequent increase in fuel prices affected just about everyone in the economy through increased costs of transportation in rural and urban areas. This also applies to those using private-owned cars as well as those using public transport.
- Following this, majority of respondents said they reduced their consumption (made less trips to school, work or leisure) which may have implications on their well-being especially for productive trips. A significant proportion of respondents said they could neither reduce nor increase the number of trips but had to maintain their consumption by bearing the higher costs of transportation.
- The majority of respondents said they had to shift expenditure meant for basic needs to transport to meet the increased cost of transportation. More than half of respondents earning below the minimum wage cut back expenditure on basic needs in order to meet increased transport costs. This puts this particular income group at risk of becoming more impoverished.
- Those who could not make the tradeoff but still needed to travel said they had to resort to cheaper modes of transportation. Mainly those who use private vehicles resorted to public transport raising demand for this particular mode of transport. More people had to cycle as a result.

- Lastly, it was found that people generally do not understand the meaning and purpose of fuel subsidies. Surprisingly this includes those who can be considered as educated. As a result, the majority said they were not in support of the removal. Buttressing their position is the fact that they felt the government did not communicate adequately before removing the fuel subsidy.

In view of the above, there are following recommendations:

1. To cushion the effects of increased costs emanating from the removing fuel subsidies, there is need to allocate more resources towards well-targeted social safety nets that have high coverage of poor households and little leakage to non-poor households. Particularly, the current Social Cash Transfer Schemes and Food Security Packs that target the poorest households in rural areas can be enhanced to play this role. A significant number of respondents including those earning less than ZMW1,000 per month reported that they reduced their expenditure on essential basic needs as a means of coping with the increased transportation costs. This renders them worse off.
2. While various empirical studies have shown that universal subsidies on fuel disproportionately benefit the more affluent and tend to be regressive, other studies have equally shown that subsidies reduce poverty to a certain extent and subsidies on particular fuels such as kerosene and LPG used for lighting and cooking by the poor are neutral. Government should therefore consider targeted subsidies on fuels such as kerosene used for cooking and lighting by the poor. This will alleviate the effects of increased fuel costs on the overall welfare of the most vulnerable who tend to reduce expenditure on basic needs to meet higher transportation and fuel costs,
3. Future decisions to remove fuel subsidies should be made after conducting empirical studies and deliberating the effects of the removal on the poor. Following which, a phased approach with gradual reductions over several months up to a year or so should be taken when phasing out subsidies to minimise the impact on the poor.
4. Government needs to carry out more awareness and sensitisation before implementing policies on key national issues such as subsidies. This will

ensure that the public understands what they are, the cost implications and the reasons for the removal. This will further prepare consumers and garner wider public support. More efforts need to be targeted towards the population with lower levels of education since the study finds a correlation between level of education and understanding of a fuel subsidy and consequently, support for the removal.

5. Lastly, it is important that the government initiates studies that determine the efficiency and cost-effectiveness of fuel procurement in Zambia compared to other countries in the region like Malawi, Zimbabwe and Botswana to see how it can reduce the costs associated with procuring fuel and ensure a lower pump price. This would lessen the burden of transport costs on the poor.

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