

Gender, Economic Policy, and Domestic Energy Use in Nigeria

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This paper examines the gender impacts of the results of government policies with regard to the prices of petroleum products, by tracing the effects of economic policy beyond the traditional economic domain. Low- and middle-income households in the highly populated city of Ibadan were studied using quantitative and qualitative techniques of data collection and analysis. The results show that upward review of the prices of petroleum products, especially kerosene and cooking gas, in the past decades have influenced the pattern of domestic energy consumption and impacted on social relations within households in ways that are not taken into consideration by policy makers.

Key words: Women, petroleum-derived energy, low- and middle-income households, price and policy

Introduction

The relationship between economic conditions and inequalities between men and women has become a critical issue in international policy making arenas and in the social sciences since the 1990s. This has led international agencies, such as the International Labour Organization, the United Nations, and the World Bank to find means of gaining a better understanding of the gender-specific impact of economic reforms and structural adjustment. The analysis of gender relations of economic policies is able to provide information as to who has access and control and who is likely to benefit or lose from a new initiative. The non-integration of gender analysis into economic policies may result in women's perspectives and priorities being excluded from development strategies. Women in developing countries have been known to play major roles in managing natural resources. Their tasks in agriculture, and the household make them daily managers of the living environment (Dankelman and Davidson, 1988).

In spite of this gender dimension to natural resource use, policy makers have failed to address socioeconomic issues, such as gender roles in energy and resource management (Wakhungu and Cecelski, 1995), especially in developing countries. This imbalance has resulted in increased poverty and environmental degradation. In most cases, the formulation of economic policy is undertaken without reference to the concerns of the sociocultural characteristics of the society. For a long time,

structural adjustment, for example, was considered a purely economic issue and evaluated in economic terms (Jolly, 1987). There are, however, social underpinnings of the economic activity that may manifest in consumption patterns, lifestyles, and gender roles and relations within households. Baden (1997) noted that the urban poor are especially vulnerable under structural adjustment to price rise, as this affects increased direct taxation, job loss, and reduced real wage. Nevertheless, a few studies have attempted to examine the impact of specific policies that are considered part of the reforms on gender inequalities (eg, Baden, 1997; Brown and Kerr, 1997; Elson, 1989, 1994; Forsythe et al., 2003; Haddad et al., 1995; and World Bank, 2001). Much less has even been done in the African context.

Consequently, this paper examines the intra-household changes that have resulted from pressures in the external economic environment, particularly in relation to the continuous upward review of prices of petroleum products in Nigeria since 1994.

Nigeria's Economic Policy in Relation to Petroleum Products Pricing

Since the 1980s, economic decline has been a pervading feature in Nigeria. This has produced a crisis situation that has affected all sectors of the economy, including the households. During the early 1970s, Nigeria witnessed a period of economic growth as a result of the oil boom. The economic growth, as a result of rapid rise in the prices of crude oil from 1973 to 1978 resulted in rapid urbanization,

notwithstanding the severe balance of payments pressures elsewhere. When foreign exchange earnings declined sharply in the 1980s however, due to a marked drop in the price of crude oil, with a consequent reduction in oil revenues from US\$26 billion in 1981 to US\$6 billion in 1985, economic crisis set in. Between 1982 and 1985, the economic situation had reached a disturbing level, prompting the Nigerian government to embark on measures to correct the disequilibria in the economy. In April 1982, the federal government promulgated the Economic Stabilization Act, designed to arrest the deterioration in the economy. More stringent exchange control measures and import restrictions, supported by appropriate monetary and fiscal policies, were put in place. The worsening economic situation during 1982-1985 led to the gradual removal of subsidies on petroleum products, beginning from 1986, and has continued till date. In January 1986, 80 per cent of the petroleum subsidy was removed, leading to an increase in the prices of petroleum-derived energy sources (Ojo, 1989).

In July 1986, Nigeria adopted a structural adjustment programme (SAP), which was in response to the World Bank's demand for renegotiating its debt repayment schedule. The adoption of SAP had detrimental effects. There was negative growth in consumption, both at government and private levels, and high inflation rates reaching up to 26 per cent during 1987-1992. The human development index (HDI) for the country also declined from 0.31, recorded in the period 1980-1985, to 0.20 for the period 1987-1992 (Federal Office of Statistics, 1992). Not in the references. Among the specific reforms prescribed by the World Bank to renegotiate its debt repayment schedule was the removal of subsidies on petroleum products. This led to the gradual removal of subsidies on commercial fuels, such as kerosene and liquefied petroleum gas (LPG); thus making them beyond the reach of the majority of the population, in spite of the fact that people's income was not increased.

The current of globalization of economic activities has further impacted on petroleum products pricing in the country in that the government has not been able to insulate the domestic prices of petroleum products from the world market. This is due to its inability to ensure that the four refineries in the country are working. In 2000, only 17 per cent of petrol consumed in the country was refined locally.

Conceptual Framework

The PASIR analytical framework

A modification of the Pressure-Activity-State-Impact and Response (PASIR) framework by the OECD employed by Duraiappah et al. (2000) is adopted as the analytical structure for this study. The modification incorporates the socioeconomic activity component that arises as a result of external pressure. Also, changes and impacts in the economic and human systems are taken into account in the modified framework. Figure 1 illustrates how the various components of the PASIR are adapted to suit the present study.

The pressure points in this study are the driving forces which impact on ecological and socioeconomic states through socioeconomic activities. They are mainly the petroleum products pricing policies of the Nigerian government and the reduced real income of the populace. The identified pressure points have given rise to different socioeconomic activities, which include switches in for cooking fuels, increased wood gathering and burning, and increased fuel wood business in urban centres. For the purpose of this study, the income level of households is pertinent; hence, low-income and middle-income classes are considered differently. The increased cost of living in the city also affects household budgets and, consequently, the amount of money available for domestic energy supply after other essential needs have been considered. Changes in socioeconomic states do not, by themselves, say much; but the actual impacts these changes have on the socioeconomic system indicate their importance. This can be observed in terms of health status, poverty, and gendered effect on households. Finally, responses are societal reactions to changes initiated by the pressure points.

It is this unique ability to trace the chain of causality that makes the PASIR framework an ideal tool to analyse the social aspects of domestic energy use in households arising from an increase in fuel prices. Based on the above analytical framework, a gender approach is employed in analysing and explaining the socioeconomic impacts and the final gendered responses.

Gender and Development

The gender and development (GAD) approach is employed in the analysis of the gender impact of the increase in petroleum-derived fuel prices on

households. Different conceptualization approaches to the study of gender-economic relations exist in the literature, which contribute to the application of a GAD approach to economic questions. These approaches have a distinct emphasis on: feminist economics, feminist political ecology and gender, environment, and development (Green et al., 1998).

The GAD approach posits that, rather than focusing on women in isolation, it is important to understand the culturally varied social relationships between men and women (Poats and Feldstein, 1989). GAD analysis posits that the relationship of women

and men with the environment emerges from the social context of gender relations and is, therefore, dynamic. GAD emphasizes the diverse and complex nature of gender roles within households, each with different obligations, use of resources, and returns to labour. GAD perspectives also emphasize that activities, roles and relations of tenure and property, control over resources, products, and decision making shape peoples' environmental interests and opportunities (Green et al., 1998). The use of resources is, therefore, affected by the power relations within social institutions such as marriage.

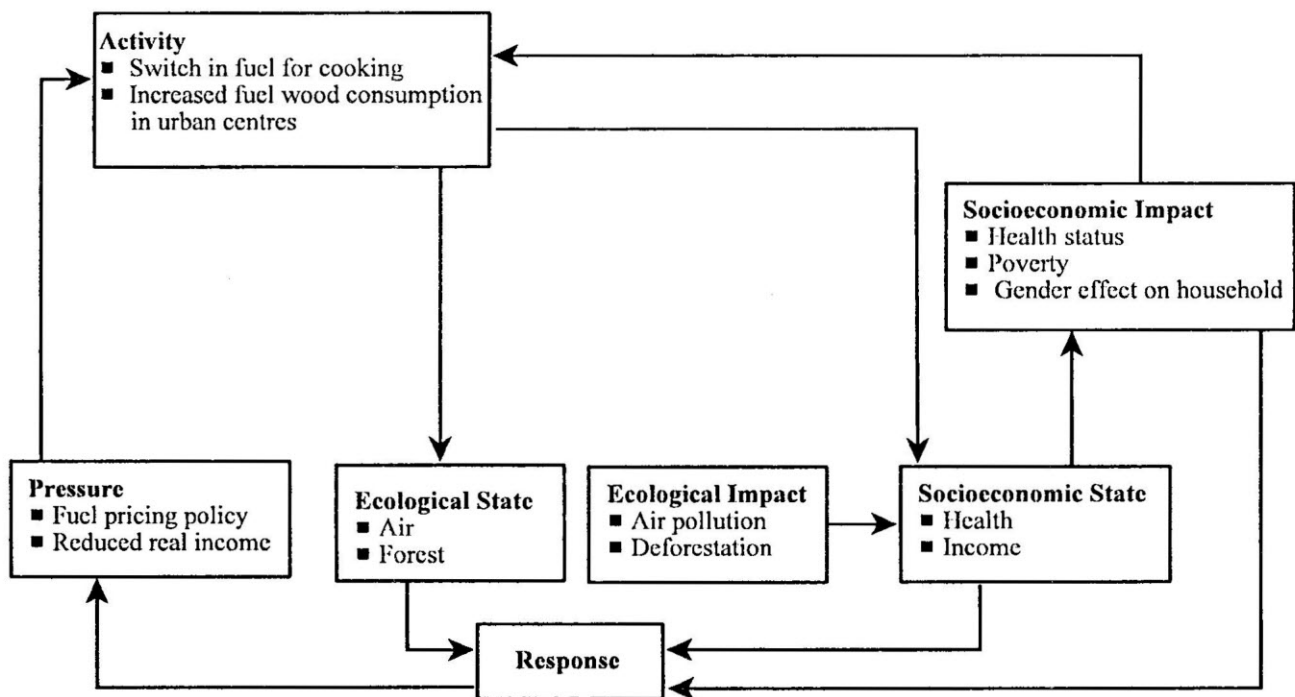


Figure 1. Pressure-Activity-State-Impact-Response (PASIR) framework

The GAD approach also recognizes that gender boundaries are not fixed, with respect to resource activities and control but, rather, are dynamic and interactive, and are related to and interwoven with each other and liable to change. Thus, as economic and social circumstances alter, rights and responsibilities may also be redefined. As such, gender-disaggregated data are needed to identify and compare male and female inputs, constraints, and outputs, which are relevant to different programmes and policies (Blumberg, 1989). When the intertwining of social relations of gender with environmental resource-use is not taken cognizance

of, policies geared toward improved natural resource-management fails.

Objectives of Study

The primary question addressed by this study is: What is the influence of switches in domestic cooking fuels, arising from increases in fuel prices over time, on gender relations within the household?

In order to answer this research question, the specific objectives of the study are to explore the gender responses within low and middle-income households to the increase in prices of petroleum-derived domestic energy sources and to evaluate the

effect of the price shift on the way men and women manage cooking fuels in households. In addition, the study examines the effect of utilization of wood as fuel on the gendered roles and responsibilities in the home.

Methodology

The study involved data collection in two stages. The first was the review of secondary sources for background information on Nigeria's economic policy and the prices of petroleum products from 1973 to 2004. In the second stage, primary data were collected using both quantitative and qualitative methods. Data for the study were obtained quantitatively through the administration of questionnaires at the household level, while qualitative data were collected through focus group discussions involving men and women. These two methods enabled the gathering of data needed as proxy variables for the four conceptual modes identified in the PASIR model, as described below:

- Pressure: Economic conditions in the country and the prices of petroleum products over the years
- Activity: Switches in types of energy used for cooking during the different periods identified
- State: Household status as characterized by income class
- Impact: Gendered effects on households i.e. effects on gender roles and relations and coping strategies
- Response: Feedback from respondents.

The study was carried out in two residential areas of Ibadan city – a low-income, high population density area and a middle-income, medium population density area. The choice of these areas was influenced by the fact that households in these areas are more affected by prevailing economic conditions, including the pressure points that have been identified in this study. The high-income population group is less affected as they have, to a greater extent, the economic resources to cope with the increasing cost of living.

Using questionnaires, the household survey was conducted to elicit information on the pattern of domestic energy consumption for cooking for three periods: before 1993, 1993-1997, and 1999; and the associated household dynamics in terms of responsibility for funding and procurement and the effect on social relations within households. Three

low-income residential districts in the core area of the city (Beere, Oje, and Oja-Oba) and three middle-income residential districts (Molete, Oke-Ado, and Oke-Bola) were sampled. Seventy questionnaire forms were administered in each district, making a total of 210 questionnaire forms per income group. A total of 420 questionnaires were administered to women responsible for cooking in the households interviewed. The random sampling technique was employed to choose the residences units where the questionnaires were administered. Only one household was sampled in a housing unit, as there is usually more than one household in a building.

Focus group discussions (FGDs) were held with selected men and women's groups in the two income areas. A total of 12 FGDs were conducted in the low-income districts of Ade-Oyo, Foko, and Oje and in the middle-income districts of Ajeigbe, Bashorun, and Oke-Bola. Six FGDs, comprising three for women and three for men, were conducted per income group. The low-income group comprised 33 women and 27 men, while the middle-income group comprised 28 women and 29 men. A total number of 61 women and 56 men were interviewed during the FGDs. The questions posed to the participants were to elicit information on the socioeconomic effect of the increase in petroleum-derived energy prices and the effect of switches in domestic cooking fuels, especially the conversion to firewood, on gender roles and relations. The FGDs were mainly conducted in the Yoruba language because the residents of Ibadan are largely Yoruba-speaking, especially those in the low-income areas.

Quantitative data collected on the field were collated and tabulated. The Statistical Package for the Social Science (SPSS) software was used for the basic statistical analyses, including cross-tabulation of the different variables measured with gender and income classes. Qualitative data obtained from the FGDs were content-analysed along the main themes of the study.

Findings

Socioeconomic Characteristics of Respondents

Headship of household

Male-headed households accounted for 83.1 per cent of the 420 households sampled, while female-headed households formed the remaining 16.9 per cent. These statistics are in agreement with the 1999 household statistics documented by the National

Population Commission (NPC) (2000). The survey showed that, generally, households in Nigeria are predominantly headed by men (83%) with only 17 per cent headed by women.

There are, however, differences in the percentage distribution of male and female-headed households in the low and middle-income areas. Male-headed households accounted for 89.5 per cent of the 210 low-income households sampled, while female-headed households formed the remaining 10.5 per cent. In the middle-income class, the percentages were 76.7 per cent and 23.3 per cent, respectively, for male and female-headed households. Households sampled in the middle-income area, therefore, have twice as many female heads as those of the low-income area.

Age

Table 1 shows that 60 per cent of the respondents in the study area were between age 26 and 45, while 13.6 per cent of them were above 55 years. A cross-tabulation of the ages of respondents and sexes of heads of households shows that 53 (74.6%) of the 71 households headed by women were headed by women in the age group 46 years and above. About 50 per cent of the women heading households were above 55 years old. Younger women in the study area were, therefore, usually not heads of households.

Education

A comparative analysis of the educational status of women in the two income groups is presented in table 2, while that of male and female heads of households is shown in table 3. Male heads of households were better educated than their female counterparts, as reflected in table 3. About 35 per cent of the female heads of households did not have formal education at all, compared to only 6.9 per cent of the male heads of households. Also, 76.2 per cent of the male heads of households have secondary education and above, compared to 40.9 per cent of the female heads of households.

Table 1. Age distribution of female respondents

Age	Income class		Total (%)
	Low (%)	Middle (%)	
16 - 25	25 (11.9)	7 (3.3)	32 (7.6)
26 - 35	80 (38.1)	54 (25.7)	134 (31.9)
36 - 45	51 (24.3)	68 (32.4)	119 (28.3)
46 - 55	20 (9.5)	58 (27.6)	78 (18.6)
Above 55	34 (16.2)	23 (11.0)	57 (13.6)
Total	210 (100.0)	210 (100.0)	420 (100.0)

Source: Computed from field data.

Table 2. Education level of female respondents in low and middle-income households

Level of education	Income class		Total (%)
	Low (%)	Middle (%)	
No formal education	76 (36.2)	11 (5.2)	87 (20.7)
Primary	57 (27.1)	56 (26.7)	113 (26.9)
Secondary	75 (35.7)	86 (41.0)	161 (38.3)
Tertiary	2 (1.0)	57 (27.1)	59 (14.1)
Total	210 (100.0)	210(100.0)	420 (100.0)

Source: Computed from field data.

Table 3. Education level of male and female heads of households

Level of education	Household head		Total (%)
	Male (%)	Female (%)	
No formal education	24 (6.9)	25 (35.2)	49 (11.6)
Primary	59 (16.9)	17 (23.9)	76 (18.1)
Secondary	176 (50.4)	17 (23.9)	193 (46.0)
Tertiary	80 (25.8)	12 (17.0)	102 (24.3)
Total	349 (100.0)	71 (100.0)	420 (100.0)

Source: Computed from field data.

Principal occupation

Most of the women sampled (68.8%) were engaged in trading. The percentage varies, however, among the low and middle-income groups, with 88.1 per cent and 49.5 per cent respectively (table 4). The high proportion of traders among the low-income class is most probably related to the low educational background of the majority of them, which limits their ability to engage in other occupations. The middle-income areas feature, therefore, substantial percentages for other occupational groups, – civil servants (20.0%), artisans (16.7%), professionals (5.2%), retirees/ pensioners (3.8%), and others – which included housewives (7.1%) – compared to almost nothing for the low-income areas. The principal occupations of male and female-heads of households are presented in table 5. Male heads of households engaged mostly in crafts (33.8%), the civil service (23.8%) and trading (20.9%), while two-thirds of the female-headed households were largely engaged in trading (66.2%). Their percentages in the occupations trailed off, with 11.3 per cent each for crafts and the civil service, 9.8 per cent for pensioners, and 1.4 per cent for professionals.

Table 4. Principal occupation of female respondents in low and middle income households

Principal occupation	Income class		Total (%)
	Low (%)	High (%)	
Trading	185 (88.1)	104 (49.5)	289 (68.8)
Artisan	13 (6.2)	35 (16.7)	48 (11.4)
Civil Servant	6 (2.9)	42 (20.0)	48 (11.4)
Professional	-	11 (5.2)	11 (2.6)
Pensioner	-	3 (1.4)	3 (0.7)
Others	6 (2.8)	15 (7.1)	21 (5.0)
Total	210 (100.0)	210 (100.0)	420 (100.0)

Source: Computed from field data.

Income

There are two salient points on the monthly income of female respondents (table 6.):

- 1 Close to one-third of the females (29.5%) in middle-income households were either unwilling or unable to provide information on their monthly income, compared to less than 2.4 per cent for the low-income group.

- 2 Close to half of the female respondents in the low-income class (45.7%) earned less than ₦1000 per month, while 49.5 per cent of them earned between ₦5,001 and ₦10,000 per month.

The high educational level of women in the middle-income group has therefore contributed significantly to their higher incomes.

Table 5. Principal occupation of household head

Principal occupation of head of household	Sex of household head	
	Male (%)	Female (%)
Artisan	118 (33.8)	8 (11.3)
Civil servant	83 (23.8)	8 (11.3)
Trader	73 (20.9)	47 (66.2)
Farmer	7 (20)	-
Professional	31 (8.9)	1 (1.4)
Pensioner	8 (2.3)	3 (4.2)
Others	29 (8.3)	4 (5.6)
Total	349 (100.0)	71 (100.0)

Source: Computed from field data.

Table 6. Monthly income of female respondents

Monthly Income(₦)	Income class		Total
	Low (%)	Middle (%)	
< 100	96 (45.7)	96 (45.7)	120
1,000 - 5,000	1 (0.5)	11 (5.2)	12
5,001 - 10,000	104 (49.5)	81 (38.6)	185
10,001 - 15,000	-	10 (4.8)	10
Above 15,000	4 (1.9)	22 (10.5)	26
No Response	5 (2.4)	62 (29.5)	67
Total	210 (100.0)	210 (100.0)	420 (100.0)

Source: Computed from field data.

Table 7. Number of persons per household

No. of persons	Low income (%)	Middle income (%)
1 - 2	19 (9.0)	5 (2.4)
3 - 8	166 (79.0)	189 (90.0)
9 and above	25 (12.0)	16 (7.6)
Total	210 (100.0)	210 (100.0)

Source: Computed from field data.

Household size

Most households surveyed comprised 3-8 persons (table 7). This relatively large household size has implications for the pattern of domestic energy consumption in the study area, as energy use increases with household size.

Petroleum Products Pricing in Nigeria

Within the last decade, as a result of the structural adjustment programme (SAP) adopted in Nigeria, a litre of petrol increased from ₦0.60 in 1991 to ₦11 in 1994 and ₦20 in 1998 (an increase of nearly 3000 per cent in less than ten years). Kerosene also increased from ₦0.27 per litre in 1993 to ₦6 in 1994 and ₦17 in 1998 (table 8). Also, a 12.5kg cylinder of cooking gas rose from an initial price of ₦200 in 1993 to ₦450 (1994) and later to ₦1000 (1998).

Between 1999 and 2004, the prices of petroleum products were reviewed seven times, amounting to about 165 per cent increase. The government's economic policy to deregulate the downstream of the oil sector and, ultimately, create price stability has been mainly responsible for the incessant price reviews. Rather than achieve this price stability, spiral inflation has set into the economy, reducing the real income of the populace. The increment in prices

of petroleum products has consequently presented itself as an indirect tax on income.

At the household level, this pressure has led to either a switch in the choice of energy for domestic use or a situation of energy combination by different income groups. With regards to household consumption of energy for cooking purposes, the proportion of consumers of firewood has continued to increase. This is because consumers of kerosene are prompted to switch over to firewood or other fuels as an alternative energy source, depending on their socioeconomic class.

Dynamics of Household Energy Use

In 1991, a litre of kerosene was sold for 40 kobo, while a gallon cost ₦2.25. Kerosene was readily available at petrol stations for anyone to purchase. During this period also, kerosene was the primary source of energy for cooking in both low and middle-income households.

Out of the 90 per cent of low-income households surveyed 67.6 per cent of middle-income households used kerosene for cooking. The reasons given for the widespread use of kerosene were that the kerosene stove did not need tending and that kerosene was affordable and readily available.

Table 8. Price of petroleum products in Nigeria (1973 - 2004)

Year	Petrol		Kerosene		LPG (cooking gas)	
	Naira/Litre	% Change	Naira/litre	% Change	Naira/litre	% Change
1973-1978	0.1	-	0.08	-	31.2	-
1979-1985	0.15	61.1	0.11	30	32.3	3.5
1986-1989	0.4	158	0.11	0	40	24
1990	0.51	29	0.15	42.9	40	0
1991-1992	0.6	17.6	0.4	166.7	80	100
1993	3.25	442	2.75	587.5	200	150
1994-1997	11	238	6	118.2	200	0
1998-1999	20	81.8	17	183.3	450	125
2000-2001	22	10	17	0	1000	122.2
2002	26	18.2	24	41.2	1200	20
2003	40	53	38	58.3	1500	25
2004	43	7.5	51	34.2	1700	13.3

Source: (1) Nigerian National Petroleum Corporation, Lagos

(2) Central Bank of Nigeria: Annual Reports and Statements of Accounts, various issues

Table 9. Number of households and their first-order cooking fuel

Year	Before 1993		1993 - 1997		1999	
	LI (%)	MI (%)	LI (%)	MI (%)	LI (%)	MI (%)
Firewood	13 (6.2)	7 (3.3)	79 (37.6)	43 (20.5)	13 (6.2)	21 (10.0)
Charcoal	3 (1.4)	4 (1.9)	12 (5.7)	33 (15.7)	-	2 (0.9)
Kerosene	189 (90.0)	142 (67.6)	93 (44.3)	72 (34.3)	182 (86.7)	41 (67.1)
Gas (LPG)	3 (1.4)	53 (25.3)	-	10 (4.8)	-	23 (11.0)
Electricity	2 (1.0)	1 (0.5)	13 (6.2)	8 (3.8)	3 (1.1)	5 (2.4)
Sawdust and others	-	-	4 (1.9)	41 (19.5)	-	14 (6.7)
No response	-	3 (1.4)	9 (4.3)	3 (1.4)	12 (5.7)	4 (1.9)
Total	210 (100.0)	210 (100.0)	210 (100.0)	210 (100.0)	210 (100.0)	210 (100.0)

Source: Computed from field data.

Note: LI = Low Income; MI = Middle Income

Before 1993, gas was the second most important cooking fuel in the middle-income areas, with 25.3 per cent of households using it as a first-order fuel. Also, a very few low-income households used firewood, charcoal, or electricity for cooking (table 9). Among low-income households, firewood was the second most important cooking fuel, with 6.2 per cent of households using it as a first-order fuel. The use of charcoal, gas, and electricity for cooking was not significant in the low-income areas during the pre-1993 period. During this period, 83.8 per cent and 76.2 per cent of households surveyed in the low and middle-income areas, respectively, did not use other energy types for cooking apart from the first-order fuels described above. In the middle-income area, 15.2 per cent of sampled households used kerosene as a second-order fuel. These households, in most cases, used gas as their primary energy source for cooking.

In 1993, the prices of petroleum-derived energy sources were increased due to further removal of subsidies on petroleum products. There was a 587.5 per cent increase in the pump price of kerosene from the 1991 price. Kerosene became scarce at petrol stations, as many people engaged in selling the product as retailers. By 1994, the selling price of a gallon of kerosene by middlemen ranged between ₦200 and ₦250. Also, the official price of cooking gas, relative to that of 1991, increased by 150 per cent. The high cost of petroleum-derived energy for cooking, coupled with the scarcity of the products led many households to change their energy sources for cooking. In both low and middle-income households,

although kerosene was still the main energy source, the proportion of households using kerosene as the primary source of energy for cooking during this period reduced from the pre-1993 value: the use of firewood assumed a significant proportion relative to its use before 1993, for both income areas. In the low-income areas, 37.6 per cent of sampled households used firewood as their primary energy source, while in the middle-income areas, the proportion was 20.5 per cent. The use of sawdust and other things like cardboard, was next to the use of kerosene and firewood in the middle-income areas (19.5%) followed by charcoal (15.7%). The use of wood shavings and sawdust for cooking was a major development during this period. Many households that had never used sawdust for cooking in the past were introduced to it. During this period, the use of gas as a primary fuel for cooking fell from its former order of importance, from the second position to fifth position. The use of electricity for cooking gained some importance during this period, with 3.8 per cent of households using small electric stoves for cooking.

There was a marked change in the pattern of energy use during the 1993-1997 period in the low-income areas. The use of firewood greatly increased, with 37.6 per cent of sampled households using firewood as primary energy source for cooking, as against 6.2 per cent before 1993. Also, the use of charcoal and electricity increased, while none of the households used gas. A very small proportion (1.9%) of households in this group used other fuel sources, such as sawdust, palm kernel residue, cardboard,

plastic, and tyres. A larger proportion of households, relative to the pre-1993 period, used a mixture of fuels. In the middle-income areas, 52.9 per cent of the households combined the first-order fuels with other fuels. Of this proportion, 17.1 per cent made use of firewood as a second-order fuel. Kerosene was next (13.8%), followed by charcoal (7.6%) and sawdust (7.1%). The use of electricity and gas as second-order fuels was not significant. In the low-income areas, 32.6 per cent of the households made use of other fuels in addition to the primary energy used for cooking. Of these, 18 per cent used kerosene, followed by firewood (6.7%), charcoal (5.6%), electricity (1.1%), and other fuels (1.1%).

By 1999, the market prices of kerosene and gas had, to some extent, stabilized and the products were more available, compared to the period 1993-1997. The pattern of energy consumption for cooking in households changed to what obtained during the pre-1993 period with some modification. The proportion of households using kerosene as a first-order fuel in both the low- and middle-income areas increased again to record levels of 86.7 per cent and 67.1 per cent, respectively, while the use of firewood decreased considerably. In the low-income areas, charcoal and gas were not used at all, while the use of electricity decreased from 6.2 per cent during 1993-1997 to 1.1 per cent in 1999. For the middle-income areas, the proportion of households using gas for cooking increased (11%) relative to the proportion recorded for the 1993-1997 period (4.8%). Although the use of sawdust had reduced at this time, its patronage nevertheless continued at a lower level of 6.7 per cent, as against 19.5 per cent in 1993-1997.

Social Impacts of Patterns of Domestic Energy Use

Gender roles

In traditional African societies, socioeconomic activities out on the basis of division of labour, according to sex and age structure. Women undertook many of the household activities, such as food preparation and reproductive roles, including childcare. In addition, women participated in the economic spheres along with men. As the society develops, women's roles have shift to suit both household and social needs, but still within the traditional division of labour (Koda and Omari, 1991). The economic crises in most African countries affected, to varying extents, the traditional roles of

men and women in the household. In Nigeria, the increase in commercial fuel prices within the past decade has impacted on gender roles and the responsibilities, with respect to the use of fuel for cooking. This is observed in terms of changes in responsibility for providing funds for cooking fuels.

Source of funds for purchase of fuel

In recent years, women have become increasingly responsible for providing for the purchase of cooking fuels either solely or in partnership with the men (table 10). The proportion of households in which male heads of households took sole responsibility for providing money for cooking fuel reduced from 36.2 per cent in the period before 1993 to 23.6 per cent in the 1993-1997 period, with a slight increase to 24.1 per cent in 1999. Similarly, the proportion of households in which women took sole responsibility for purchasing cooking fuel increased from 20.5 per cent to 22.4 and 26.7 per cent, respectively, in 1993-1997 and 1999. By 1999, 46.4 per cent of households had men and women jointly responsible for the purchase of cooking fuel as against 33.1 per cent in the period before 1993.

This shift in responsibility was captured by both men and women participants in the FGDs. In the low-income area of Foko, a female participant explained as follows:

Before, men provided money for everything — school fees, feeding allowance, etc. Our men are no more successful in their businesses. Some men wake up very early to go out in order to avoid the children. Then, the wife would be left with the children and she would not want her children to suffer. Some women are now men. All the jobs we were not exposed to before we now know how to do. So many women have experienced hunger and, therefore, learnt how to work.

Similarly, during the women's FGD among the middle-income group in Ajeigbe area, a woman captured the incidence as follows:

In the past, at the end of the month, husbands provided the feeding allowance and also supply of a keg of kerosene. But now it is not so. Even the feeding allowance is difficult to get. The money is often not sufficient. Now it is 50-50. Women also

provide money; women now provide money for kerosene.

Table 10. Persons responsible for providing money for the cooking fuels in the household

Monthly Income	Before 1993 No. (%)	1993 - 1997 No. (%)	1999 No. (%)
Men	152 (36.2)	99 (23.6)	101 (24.1)
Women	86 (20.5)	94 (22.4)	112 (26.7)
Men and women	139 (33.1)	194 (46.2)	195 (46.4)
Women with assistance from others	5 (1.2)	8 (1.9)	8 (1.9)
Other male adult	2 (0.4)	1 (0.9)	1 (0.2)
No response	36 (8.6)	24 (5.7)	3 (0.7)
Total	420 (100.0)	420 (100.0)	420 (100.0)

Source: Computed from field data.

The men in the low-income area of Foko corroborated the increased responsibility of women in funding the purchase of fuel for cooking and providing for the home thus:

When the husband has no job, nowhere to go, he cannot have money to give his wife at home. Majority of us here are unemployed. Our wives feed us. We have no money to buy kerosene. Our wives do it... Our wives have been of great help to us. Our wives no longer engage in just one economic activity; they combine many economic activities. You can see a sewing mistress over there, who also sells fried fish. Can men do that? No, men cannot!

Most men in the low-income class are traders and artisans, engaged in craft work, such as carpentry, welding, tailoring, driving, masonry, and motor mechanics. The economic crisis in the country has adversely affected their businesses due to reduced patronage from clients. Consequently, male respondents have been hindered in their productive role and are, therefore, not able to fulfill their traditional role as providers within the home. This has placed an increased burden on women, leading to their engaging in one or more income-generating activities, in addition to their principal occupations. This is in order to meet the demands of the home.

Women's contributions to household budgets have therefore increased.

Procurement of cooking fuel

Women are traditionally associated with the task of sourcing for cooking fuel, as in the case of gathering fuel wood (Rodda, 1991). Before 1993, when petroleum-derived energy sources were affordable and the products were easily available, it was mainly the responsibility of women, and male and female children in poor urban households, to purchase kerosene for household use. With the further removal of subsidies on petroleum products, however, which resulted in increased prices of these products and greater participation of middlemen in the sale of kerosene and gas, it became exceedingly difficult for women in particular to get kerosene at petrol stations. This was because between 1994 and 1997, petrol stations that had supplies of kerosene for sale had very long queues. Sometimes it required up to four hours of struggling to get a few gallons of kerosene. During this period, it was not unusual to find men purchasing kerosene for their households at petrol stations, since it was much cheaper there than buying from the middlemen. The statement by one of the participants of the male FGD in the middle-income area of Ajeigbe applies to the entire group:

Before, it was our wives who used to go and buy kerosene, but now it is survival of the fittest at petrol stations. Women cannot buy kerosene. We men that go get our clothes torn in the process of struggling to buy a gallon of kerosene.

The women's FGD in Foko also corroborated the role change:

At that time, our men really suffered. They didn't succeed in buying kerosene at petrol stations. They were beaten there. That was why we all changed to the use of fuel wood. People began to use wood.

The consequent use of fuel wood and sawdust as alternatives to kerosene in many households, especially in the low-income areas within the urban centre, had a significant effect on the roles of women and children. In households that used fuel wood, the women preferred to do the purchasing of firewood themselves instead of sending their children as they did when kerosene was affordable. The reason given

for this is that children cannot differentiate between dry wood and wood that is not properly dried, as such, wood sellers tend to sell them fresh, and such wood does not burn well but makes a lot of smoke. In order to prevent this inconvenience, the women did the purchasing themselves. The purchasing of firewood was considered by both men and women to be the responsibility of women. The reason for this is that, men would not carry firewood on their heads.

For households that collected firewood from natural forests and government-reserved forests, the responsibility was that of the women and children. They spent hours searching for wood. For example, participants in the women's FGD at Ade-Oyo have this to say:

We spend two to three hours gathering wood, because we move from place to place searching for wood. When we get enough we turn home.

Many children, both male and female, either got to school late due to slow preparation of breakfast with the use of firewood for cooking or missed school totally as a result of helping their parents in collecting firewood. The same group at Ade-Oyo stated that:

Sometimes we disrupt our children's schooling. On Fridays we ask them to go and look for firewood instead of going to school. On Saturdays and Sundays we also go in search of firewood. On Mondays, they then go to school or where they are learning a trade.

Furthermore, the use of firewood for cooking consumed hours that women could have spent on other productive work outside the home. Participants of the women's FGD at Foko pointed out that:

We spend many hours tending the fire. We don't leave the fire untended. Instead we look after it to ensure it burns well. If one were to leave it, it quenches. You know if stove is used, nothing puts off the fire. It continues to burn so long as there is kerosene in it.

Most women interviewed were, however, not able to estimate the number of hours spent tending the fire. Moreover, cooking with firewood affected the social and economic responsibilities of the women, as it affected the income-generating activities

of the women. The women in the FGD at Ade-Oyo stated:

We could not go to places we wanted to go. This is because there was no opportunity of going out until we provide the children with food.

The burden of firewood use on women was also compounded by the fact that the majority of youths did not know how to cook with firewood as they were not accustomed to it, unlike the use of kerosene stove. These additional roles and multiple responsibilities of women, especially those of the low income area of Ibadan, coupled with the use and management of fuel wood for cooking during periods of economic stress, meant that they assumed a disproportionate share of the productive and reproductive labour. This is in line with the findings of Elson (1989) and Moser (1997).

Gender relations

Gender relations have been defined as the social constructs of how men and women behave, in relations to, and in transactions with each other. They are also signifier of power relations between men and women (Kynch, 1998). Elson (1989, 1992), while writing on gender and structural adjustment, notes that there are transformational possibilities inherent in crisis. This has been found to be the case with the increased use of firewood and the sourcing for cooking fuels in households. The burden of going to search for wood and tending the fire resulted in the late preparation of meals in homes, which at times became a source of conflict between the husband and wife. According to some participants in the men's FGD at Oke-Bola:

Nigeria has changed. Anyone who wants to have a good home must be ready to endure. One needs patience because what you expect to meet at home (ie, food) may not be there. The woman may have wandered out in search of fuel for cooking. So, if one is not patient, quarrel may ensue between husband and wife.

The women's group at Foko also stated that:

Occasionally, our husbands got angry and left the house when food was not ready on time. They went to buy cooked food outside.

In order to avoid conflict, the decision as to which fuel type to use and where to get it is largely taken by the women. About 95 per cent of the women interviewed noted that once the man provides money for food, it is not his business what fuel type is used to prepare the food. The man is only interested in having food to eat. This is well captured in the statements of a man at the FGD in the middle-income area of Oke-Bola:

My concern is that food be prepared. If I make the decision that she must use kerosene and it is when we have scarcity of kerosene, how will she do it? So whatever fuel type she decides to use and it is available then it is all right with me as long as the fuel cooks fast.

Household Coping Strategies

The poor have always had strategies for coping with low incomes, high consumer prices, and inadequate or unreliable economic and social infrastructure (Moser, 1997). With regard to energy resources, Brouwer et al. (1989) showed that fuel scarcity impacts on availability of food, as household management strategies may include a reduction in the frequency of cooking, substitution of less nutritious but quicker preparation of foods, eating cold leftovers, or warming previously cooked food. The response of women in both low and middle-income areas of Ibadan to the increase in prices of commercial fuels, indicated that they developed different coping strategies to alleviate the hardship they experienced. These strategies included a reduction in the number of times meals were cooked per day and a reduction in the number of meals eaten each day.

Frequency of cooking

Table 11 shows the changes in the frequency of cooking in the sampled households over the years. Before 1993, about 70 per cent of households cooked at least three times a day. This proves that fuel for cooking was not a problem in terms of availability and cost for the majority of the people in the low and middle-income areas. Between 1993 and 1997, however, the proportion of households cooking three times a day had decreased to 41.2 per cent, while more households cooked only once (from 2.4 to 12.1%) or twice (from 20 to 43.6%) a day. For some households, the reduction in their frequency of

cooking implied cooking two or more meals at a time or reducing the number of meals cooked in a day.

The cooking patterns that developed between 1993 and 1997 are still evident in present times in many low and middle-income households in the city, despite the fact that kerosene is more readily available although it is mostly sold by middlemen and retailers. The proportion of households that cook only once a day in 1999 is also greater (9.2%) than that (2.4%) recorded before 1993. 85 per cent of the respondents attributed the change in the cooking patterns to the harsh economic condition in the country.

Number of meals eaten

An important effect of the change in the cooking patterns is that fewer meals were eaten in most households. Batliwala (1983) noted that reduced supplies of fuel might result in fewer meals being cooked in a day and the nature and quantity of fuel available affects not only the time required for cooking but also the type of food consumed.

Table 11. Frequency of cooking in a day

Frequency	No. of household before 1993(%)	No. of household 1993-1997(%)	No. of household 1999(%)
Once	10 (2.4)	51 (12.1)	39 (9.23)
Twice	84 (20.0)	183 (43.6)	197 (46.9)
Thrice	293 (69.8)	173 (41.2)	180 (42.9)
Others	5 (1.2)	4 (1.0)	4 (1.0)
No response	28 (6.7)	9 (2.1)	-
Total	420 (100.0)	420 (100.0)	420 (100.0)

Source: Computed from field data.

In all the FGDs, it was estimated that over 70 per cent of households in the study areas skipped at least one meal a day and substituted it with drinking *gari* (processed cassava flour) or eating bread. In most cases, women and children were at the receiving end of this management strategy. A smaller proportion of households bought their meals from food vendors, which they claimed solved the problems related to cooking with firewood. Many children were given money to buy food from vendors at school. Also, meals that required a lot of energy to cook, such as

beans, were reduced or removed completely from household diets. This coping strategy has serious implications for the nutritional status of families, as beans are a cheap and affordable source of protein for most of the population. Other management strategies included cooking soups that do not require much heating to preserve, such as bitter leaf soup. Some women also added potash to their soups and stews to preserve them. A participant in the women's FGD at Ade-Oyo noted that:

I cook once a day and to hasten the cooking I add to my stew potash. If I don't reheat it in two days it would not spoil. That was how we managed. And the children take a lot of gari.

This coping strategy was especially important for many low-income households, as they did not own refrigerators. Another participant in the FGD at Ade-Oyo stated that:

The cost of kerosene and its scarcity almost rendered us poor and useless. That was why we devised the idea of cooking breakfast and supper together.

Many of the FGD participants in the low and middle-income areas agreed with the assertion that a participant in the middle-income women's FGD at Oke-Bola mad:

Some in the compound I live eat irregularly. They practiced O10,¹ while some practised O01.² Some households do without food till 12 noon when food is cooked. What they eat in the afternoon is also what they eat at night. Sometimes we eat what we cooked the previous night the following morning. This is to avoid repeated cooking.

Policy Implications

The PASIR analysis showed that responses to external pressure can be triggered at different levels. This paper has shown the interplay that exists between the socioeconomic states and the social responses, as result of the socioeconomic impacts. Based on the key findings of the study, some issues germane to policy are thus, highlighted.

¹ Only lunch eaten

² Only supper eaten

Price regulation for petroleum-derived energy

There is need for government to reassess its economic policies regarding the prices of kerosene and cooking gas. The continual upward review of the prices of these products does not augur well for the socioeconomic welfare of the populace, especially the low- and middle-income population groups. It is therefore advocated that the prices of these petroleum products be reduced and the stability of the prices ensured.

Availability of cooking fuel as an index for measuring human developments

Since availability, in terms of accessibility and affordability, of energy for cooking is as important as water supply in performing the domestic role of women, it is imperative that it be considered as, and incorporated into the indexes for measuring human development in developing countries. This is because availability of cooking fuel has implications for the nutritional and health status of families. Furthermore, the non-availability of kerosene indirectly affects school attendance of children of the urban poor.

Need for gender consideration in national policies

Following from the impacts of government's economic policy on gender roles and relations within households with regards to petroleum products pricing, it is important to take into consideration gender aspects at the planning stage of any economic policy. There is the need to monitor gender-disaggregated impacts of economic policies that will inform future policy developments.

Addressing environmental degradation

Finally, the woman is the major decision maker concerning form of energy to use for cooking. The use of firewood contributes significantly to deforestation and air pollution. The appropriate pricing of petroleum-derived energy sources for cooking is therefore an important means of addressing these problems.

Conclusion

This paper has attempted a context-specific gendered research by investigating the relationship between economic policies which lead to incessant upward reviews of prices of petroleum products and its effects on low and middle-income districts of the population, using Ibadan, one of the largest urban

centres in Nigeria, as a case study. The major outcome of the problem under study is the impact of disproportionate allocation of roles and responsibilities to women. The results showed that women are more disadvantaged than men in that they bear more of the socioeconomic burden of the upward review of the prices of petroleum-derived energy for cooking. There is, therefore, gender inequality with regards to the effects of the macroeconomic policy within the households.

The disproportionate burden on women has led to the development of coping strategies that do not portend well for the health status of families. In all probability, the government has taken some decisions to increase the prices of petroleum products without considering the sociocultural characteristics of the society. This seeming exclusion has consequently manifested in changing domestic energy consumption patterns and gender relations and roles within the households; and these will become more pronounced as prices of domestic energy continue to increase in the country.

Furthermore, it is important to understand that the different roles and responsibilities of women and men are closely linked to some environmental changes. This is because women and men affect the environment through their economic and household activities. The increasing use of fuel wood and other fuels instead of kerosene and cooking gas has implications for deforestation and air pollution which invariably affect people's well-being. The understanding of gender differences is therefore, an important element in developing policies aimed at achieving better environmental outcomes and the well-being of people.

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