



## ANALYSIS OF PROFITABILITY OF INFORMAL GASOLINE TRADE IN COMMUNE OF PARAKOU IN NORTHERN BENIN

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### ABSTRACT

This article analyzes the profitability of informal gasoline trade basising on two indicators: Net Margin and Benefit/Cost ratio. Indeed, 168 informal gasoline sellers have been randomly chosen and surveyed in commune of Parakou. Data on socio-demographic characteristics, prices, quantities of inputs and outputs used in this trade have been collected by questionnaires. The results show that the informal trade in gasoline is an economically and financially profitable activity for the actors in this area.

**KEYWORDS :** Informal Sale Of Gasoline, Economic And Financial Profitability

### 1-INTRODUCTION

The informal sector has always been very active in economic activity and is therefore very important in the economies of developing countries (Dcs), whether in terms of production, income distribution or the creation of employment. In Benin, it accounts for about two-thirds of gross domestic product and 98% of enterprises in Benin are individual and develop in the informal sector (INSAE, 2016).

One of the heavily sector affected by the informal activity in Benin is the tertiary sector, where smuggling is predominant. This type of trade is particularly developed between Benin and Nigeria. One of the main outcomes of informal trade relations between Nigeria and Benin is the smuggling of petroleum products.

Thereby, the informal market of petroleum products has supplanted the official market to the point where it registered 41,946 actors in 2005, with an imported volume of 244,984,926 liters compared to 91,104,581 liters of official sales, or about 70 % of the national need. This activity gives those who practises it a monthly gross margin comprises between 70 and 170,000 CFA francs, approximately an annual net profit for the entire industry of 34 billion CFA francs (LARES, 2005).

No locality in Benin is spared by this informal trade in petroleum products. There are more than 50,000 outlets hidden in all towns and villages, while some communities in Benin do not even have a gas station (Atanasso, 2009). The commune of Parakou, in north of Benin, which abounds a multitude of actors of this trade is chosen like area's study to analyze the profitability of informal trade in gasoline

### 2- RESEARCH METHODOLOGY

#### 2-1 STUDY AREA

The study was conducted in northern Benin in the commune of Parakou. The choice of this Commune is based on its geographical position and especially its proximity to Nigeria which is the country of import of these petroleum products.

#### 2-2 SAMPLING AND DATABASE

The data used in this study are essentially primary data collected from 168 actors in the informal petrol trade. The choice of respondents was made basing on two criteria namely: the practical of informal sale of gasoline at least one year, continuously and be owner of the trade. Data on the sale of gasoline, quantities and prices of inputs and outputs involved in trade have been collected using a structured questionnaires administered to each sampled actor. In addition, semi-structured interviews and focus groups have been organized. The research unit is the gasoline seller in the informal circuit. The process of sellers choice to be surveyed randomly sampled 168 gasoline vendors in the informal circuit. This number has been chosen taking into account the constraints of the sales force, time and financial constraints, but responds well to the statistical inference theory requirements : Central Limit Theorem (Gujarati, 2003).

#### 2-3 METHODS OF ANALYSIS

To analyze the economic and financial advantage of selling smuggled gasoline, 'gross and net margins' have been used as indicators of economic profitability and 'Benefit-Cost Ratio' as an indicator of financial profitability.

### INDICATORS OF ECONOMIC PROFITABILITY

Taking inspiration from the work of Paraíso et al. (2011), Paraíso et al. (2012) and Yabi et al. (2012), economic profitability indicators are defined by:

#### GROSS MARGIN (MB)

The gross margin was obtained by deducting the variable costs (CV) of the gross product in value (PBV) or total revenue, given by the physical product multiplied by the unit price  $p$  of the product's sale. The gross margin was expressed in FCFA / ha by the following formula

$$MB = PBV - CV \quad [1]$$

If it is positive, then it is concluded that the gross product can cover all the variable costs and that the production is economically profitable (without deduction of fixed costs). But, if the gross margin is negative, then the gross product can not cover all the variable costs. In this case, the production is not economically profitable.

#### NET MARGIN (MN)

The net margin of production was obtained by deducting from the gross products in value (PBV), the total costs (CT), which are the fixed costs (CF) added to the variable costs (CV) or deducting from the gross margin (MB) fixed costs (CF). It is expressed in CFA francs per hectare (F CFA / ha) by the following formula:

$$MN = PBV - CT = PBV - CF - CV = MB - CF \quad [2]$$

Still called net profit or profit, if the net margin is positive, it follows that the gross product manages to cover all the total costs (fixed + variables) and that the production is economically profitable. But, if the net margin is negative, then the gross product can not cover all the total costs. In this case, the production is not economically profitable.

### FINANCIAL PROFITABILITY INDICATOR

The indicator of financial profitability used is the Benefit-Cost ratio that expresses the total financial gain obtained by the investment of a monetary unit (1 FCFA for example). Let  $B$  be the total profits obtained after a total investment  $T$  and  $Rf$  the financial profitability indicator. It follows then according to Darbelet and Laugine (1990) that:

$$Rf = \frac{B}{CT} \quad [3]$$

If  $B/CT > 1$ , then 1 invested franc generates more than 1 FCFA as a profit and the activity is said to be financially profitable. But, if  $B/CT < 1$ , then 1 invested franc generates less than 1 FCFA as profit, and the activity is not financially profitable. The investor then earns less than he invests.

### 3- RESULTS AND DISCUSSION

#### SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

Table 1 shows that informal trade in gasoline is an activity that occupies many young people: (29.51%) retailers are under 30 years, (31.15%) are between 30 and 40 years, this means that 60.66% of retailers are under 40 years old. The statistics are almost similar for wholesalers where 52.17% are under 40 years old. This explains that that activity is very hardshipful and requires a lot of physical effort.

Also, the results show that the majority of respondents, both retailers (65.57%) and wholesalers (78.26%), were men, indicating that the informal sale of gasoline in commune of Parakou is much more a masculine activity and is mainly practised by young people under 40 years old.

**Table 1 : Ages and sexes of the respondents**

	Type of actors	
	Retailers	Wholesalers
ages	Number (%)	Number (%)
20 to 29 years	36 (29,51)	5 (10,87)
30 to 39 years	38 (31,15)	19 (41,30)
40 to 50 years	23 (18,85)	12 (26,09)
50 years and over	25 (20,49)	10 (21,74)
Total	122 (100)	46 (100)
Sexes	Number (%)	Number (%)
Masculine	80 (65,57)	36 (78,26)
Feminine	42 (34,43)	10 (21,74)
Total	122 (100)	46 (100)

Source: Survey Data Analysis Results, 2018

Table 2 shows that informal sellers of gasoline are for the most part poorly educated and illiterate, 32.79% of retailers, compared to 36.96% of wholesalers, have a primary level, while for secondary school, 26.23% of retailers are registered, compared to only 10.87% of wholesalers.

**Table 2 : Level's education of the actors**

	Type of actors	
	Retailers	Wholesalers
Level of education	Number (%)	Number (%)
No	21 (17,21)	19 (41,30)
Literacy	8 (6,56)	0 (0)
Primary	40 (32,79)	17 (36,96)
Secondary	32 (26,23)	5 (10,87)
Superior	21 (17,21)	5 (10,87)
Total	122 (100)	46 (100)

Source: Survey Data Analysis Results, 2018

#### ECONOMIC AND FINANCIAL PROFITABILITY

Table 3 indicates that the net margin (economic profitability indicator) resulting from the activity varies from 560 F CFA/can to 760 F CFA/can, approximately an average net margin of 660 F CFA/can at retailers while at wholesalers, it ranges from 1100 F CFA/can to 1500 F CFA/can or an average of 1300 F CFA/can. This result shows that the activity is economically profitable.

**Table 3 : Operating Account of Informal Gasoline Vendors (in F CFA/can)**

	Type of actors	
	Retailers	Wholesalers
	Minimum (Maximum)	Minimum (Maximum)
PBV	8750 (10000)	8000 (9000)
CV	8000 (9000)	6000 (6500)
MB	750 (1000)	2000 (2500)
CF	190 (240)	900 (1000)
MN	560 (760)	1100 (1500)
B/C ratio	2,95 (3,17)	1,22 (1,5)

Source: Survey Data Analysis Results, 2018

PBV = gross product in value ; CV = variable costs ; CF = fixed costs ; MB = gross margin ; MN = net margin  
1 can = 25 liters

In addition, table 3 showed that the retailer Benefit/Cost ratio ranges from 2.95 to 3.17, all right an average ratio of 3.06. This indicates that by investing 1 F CFA in informal trade of gasoline, sellers would earn on average more than triple of their investment or 3.06 F CFA retailers. For wholesalers, the Benefit/Cost ratio varies from 1.22 to 1.5, thus an average ratio of 1.36. This means that a wholesaler who invests 1 FCFA in informal trade of gasoline earns on average 1.36 FCFA. From the analysis of the Benefit/Cost ratio (financial profitability indicator used), it appears that the informal trade of gasoline in the area's study is financially profitable. This result leads to the conclusion that, with retailers, the informal trading activity of gasoline is financially more

profitable than the production of maize, peanuts and rice in Gogounou that generate B/C ratios respective of 1.61; 1.4 and 1.38 according to Yabi et al. (2012). By contrast, wholesalers are less profitable than fonio production in Boukombé, that generates an average B/C ratio of 2.78 (Paraíso et al., 2011).

#### 4-CONCLUSION

By considering the net margin and the Benefit / Cost ratio, the present study has shown that the informal trade in gasoline is an economically and financially profitable activity in the municipality of Parakou. This result calls for the establishment of prospective research programs whose purpose would be to propose appropriate solutions that can facilitate the gradual transfer of this trade from its informal activity status to formal activity status.

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