

Economic Challenges of the Informal Sectors: Case of Madagascar

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Abstract: *The informal sector plays a crucial role in the development of Madagascar. It contributes to job creation, economic flexibility, income generation, poverty reduction and entrepreneurial dynamism. Informal activities respond to local needs, can withstand economic crises and promote innovation. However, it is important to address challenges such as the lack of social protection and precarious working conditions. To maximize the benefits of the informal sector, it is necessary to promote its gradual formalization by providing appropriate support. So we used the OLS method as a methodology which allows us to know the relationship of a variable in relation to other variables. In fact, the results show us that the informal sectors have significant relationships with unemployment and that of education. On the other hand, for GDP per capita, it has significantly weak and negative relationships with that of the informal sector. In the short term, the informal sectors improve the economic and social situation, but in the long term, this relationship is weak and presents itself in a negative way.*

Keywords: informal sector, economic crisis, development, social protection, GDP per capita

1. Introduction

Informal sector, for almost eighteen years since the term was launched, development economists and sociologists have often tended to confuse, under this unfortunate term, poverty and survival on the one hand, unemployment and underemployment on the other. go. No doubt the three phenomena overlap, but their intersection does not constitute the essential aspect of what is commonly called the informal sector.

The informal sector is omnipresent in sub-Saharan Africa. In the cities, workers in this sector are found in family entrepreneurship, domestic work, and small businesses. Crafts and shoe shining, while in rural areas, informality mainly concerns subsistence agriculture and livestock breeding. The informal sector, according to studies carried out by Charmes, contributes enormously to the development of African economies. This sector represents a remarkable 55% of the GDP of sub-Saharan countries. If we exclude Botswana and South Africa, this rate rises to 60%. The contribution of the informal sector is higher in sub-Saharan Africa than in all other parts of the globe.

The informal sector covers 60% of jobs in the active population internationally. This phenomenon is particularly intense in developing countries, such as Madagascar, 90% of the Malagasy population receive income from this sector. Thus in Madagascar, the informal sectors are little exploited and this leads to the deterioration of state coffers. According to the result of INSTAT Madagascar, 80% of the Malagasy active population lives in the informal sector, we also note that 41% of them are women and 51% men, 45% of respondents are located in the income bracket between 100,000 and 150,000 Ariary, 25% of households receive between 150,000 and 200,000 Ariary and the rest, 30%, receive more than 200,000 Ariary.

With the financial and political crises, a large number of the unemployed working population is embarking on lucrative

activities. The informal sector then develops in the big city. This informal sector serves as a source of survival and at the same time a refuge for a large part of the unemployed population. Certainly, the informal sector generates employment and income for its actors. However, the conditions of informal activities are precarious and the operating system remains irregular, insecure and unstable.

So the question that arises is what is the challenge of the informal sector in Madagascar with regard to development?

2. Literature Review

Theoretically, the informal sector is a part of the economy that is not regulated or controlled by the government. It brings together all economic activities which are not officially registered, here are some definitions and the concept of the informal sector itself.

According to the BTI, without having given an objective definition, the International Labor Office instead put forward the criteria constituting the informal sector in its report in 1972. There are 7 of these criteria, including the following: ease of entry into the activity ; an unregulated competitive market; family ownership of businesses; the restricted scale of activities; the use of local reserves; the use of adapted technology and high labor intensity; and training acquired outside the school system.

These criteria are generally also the characteristics of the economy of developing countries (DCs). The definition of the informal sector has evolved significantly since the adoption of the first attempt in 1972. The 1993 ILO report proposes another definition as "the weak link between official institutions and production units which operate on a small scale, with little or no division between labor and capital as factors of production. Employment relationships, where they exist, are primarily based on casual employment, kinship relationships or personal and social relationships rather than contractual agreements with proper guarantees."

The informal sector has been the subject of several studies in various areas of the economy. The field of study concerning this sector is very vast, and obviously increasingly difficult to define because of the various approaches.

In its institutional definition, the ILO defines the informal sector as: "a set of units producing goods or services with the main aim of creating jobs and income for the people concerned. These units, having a low level of organization, operate on a small scale and in a specific manner, with little or no division of labor and capital as factors of production. Employment relationships, where they exist, are primarily based on casual employment, family ties or personal and social relationships rather than contractual agreements with proper guarantees. Production units in the informal sector present the particular characteristics of individual businesses. Fixed or other assets used do not belong to the production units"

The concept of the informal sector made its appearance in the economic theory of development with the first work of the World Employment Program undertaken by the International Labor Office in the early 1970s. If Keith Hart (1971) was the first to use This term was really the ILO report on Kenya (ILO, 1972) which launched and popularized the concept. It was in fact the World Employment Program which brought to the fore the concerns of unemployment and underemployment linked to informality, or at least in a fraction of it likely to be modernized a possibility of productively absorb excess labor.

3. Methods

In the methodology, we adopt the ordinary least squares (OLS) method. We will have to estimate the coefficients so as to minimize the squared distance between each observed point y_t and each point \hat{y}_t given by the line. Thus, the estimates are made using the following different tests: Student's test, to find out if a variable plays an explanatory role in a model, we carry out a Student's test or significance test of the coefficient of the explanatory variable.

To do this with a Student test, you must first check that the errors follow a normal law:

$$\varepsilon_t \sim N(0, \sigma_\varepsilon^2)$$

Let us first pose the hypotheses of the Student test, and consider the following general model:

$$y_t = a_0 + a_1x_{1t} + a_2x_{2t} + \dots + a_{k-1}x_{(k-1)t} + \varepsilon_t$$

Pour $t=1,2,\dots,T$

$H_0 : a_i = 0$ où $i = 0,1,\dots,(k-1) \Rightarrow$ the coefficient is not significant.

$H_1 : a_i \neq 0 \Rightarrow$ the coefficient is significant

The Decision Rule is as follows:

If $|t| > t^*$ where t^* is the critical value of the Student table for a fixed risk and a number of degrees of freedom equal to $(T-k) \Rightarrow$ we reject H_0 and we accept H_1 : the coefficient is significantly different from zero and the variable plays an explanatory role in the model.

Fischer test, the Fisher test allows you to test the significance of all the coefficients of a model. Consider the general model:

$$y_t = a_0 + a_1x_{1t} + a_2x_{2t} + \dots + a_{k-1}x_{(k-1)t} + \varepsilon_t$$

for $t=1,2,\dots,T$

The assumptions of the Fisher test are as follows:

$H_0 : a_1 = a_2 = \dots = a_{k-1} = 0$ (the constant a_0 is non-zero) \Rightarrow all of the coefficients of the model are not significant.

H_1 : there is at least one non-zero coefficient.

The decision rule is as follows:

If $f > f^*(p,q)$ where $f^*(p,q)$ is the value given by the Fisher table for given p and q and for a fixed risk \Rightarrow We accept H_1 : there exists at least one non-zero coefficient .

This test is rarely used because when it indicates that there is at least one non-zero coefficient, it does not specify that this test is Student's.

In our work, we used the Breusch Godfrey serial correlation LM test although there are several other tests that can be used.

If the p-value is greater than 0.05, then we reject H_1 and accept H_0 , so the errors are not heteroscedastic.

Test for normality of errors, Jarque Bera test is a hypothesis test that seeks to determine whether the data follows a normal distribution

If the p-value of the test is greater than 0.05 then we accept H_0 and the errors are normally distributed.

4. Results and Discussions

4.1 Results

4.1.1. Informal sector facing unemployment

4.1.1.1 Evolution of the informal sector in Madagascar

We know that the informal sector is family work and does not pay taxes to the government; since 2005 the rate of this informal sector has been increasing little by little, starting at 41.73% up to 46.08% in 2010, and it drops to 35.11% in 2019. In the figure below, we represent the rates of family work in Madagascar since 2005 to 2019.

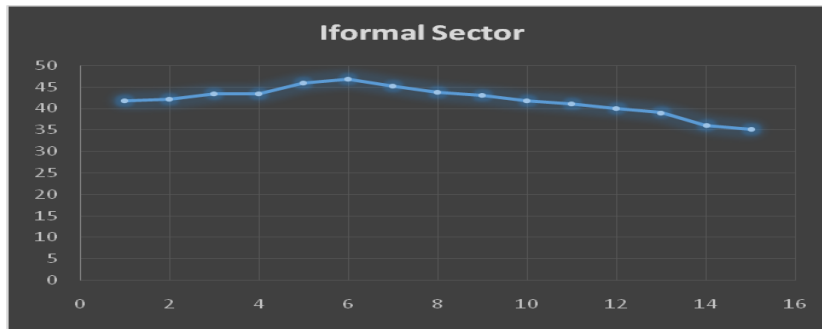


Figure 1: Rate of family work

Source: author 2023

This figure shows the evolution of the informal sector rate in Madagascar from 2005 to 2019. We also see that the informal sectors are family jobs. Thus this figure evolves and reaches 41.73%, then increases to 45.21% in 2010, and it drops to 35.11% in 2019.

4.1.1.2. Evolution of unemployment

This figure shows the evolution of unemployment rates in Madagascar from 2005 to 2019, i.e. total unemployment in 2005 is 2.62%, it increases to 4.28% in 2010 and decreases 0.6% in 2012, and in 2019 the unemployment rate increases to 1.84%.

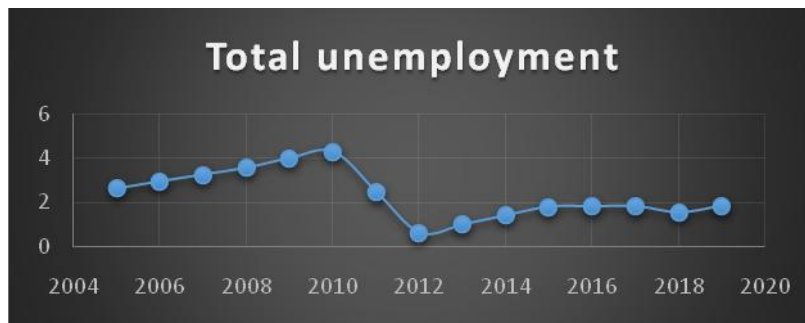


Figure 3: Total unemployment rate

Source: author 2023

4.1.1.4. Econometric analysis

We will present the results using the OLS coefficient estimation method that was brought out by evaluating the relationship between unemployment and the informal sector.

The linear regression model

$$\text{Model equation: } SI = a_0 + a_1 * \text{Ch\^omage} + \epsilon$$

Table I: Estimation of coefficient by OLS method

Included observations : 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	38.21418	1.822634	20.96646	0.0000
Unemployment	1.575534	0.713934	2.206834	0.0459
R-squared	0.272529	Mean dependent var		41.87467
Adjusted R-squared	0.216569	S.D. dependent var		3.305553
S.E. of regression	2.925799	Akaike info criterion		5.108578
Sumsquaredresid	111.2839	Schwarz criterion		5.202985
Log likelihood	-36.31434	Hannan-Quinn criter.		5.107573
F-statistic	4.870118	Durbin-Watson stat		0.231778
Prob (F-statistic)	0.045917			

For the unemployment rates, concerning the Student statistics at the 5% threshold, the royalties derived by the sector are positive 2.206834 and the Student p-value is less than 5% which shows that the unemployment rates are significant. The elasticity between the informal sector and

the unemployment rate is positive at 1.575534, this positivity shows that the more the unemployment rate increases this has a positive influence on the informal sector. Thus, the explained variable compared to that of the explanatory variable is weak because R² is 0.27 which is 50% lower in the coefficient of determination. The Fisher statistic shows a p-value that is less than 5% (0.05), which means that the coefficients of this model are overall significant.

4.1.2. Informal sector versus education

Due to demographic factors, the level of education is becoming lower and lower. Indeed, public school tuition fees are too high for parents, which make them leads them to choose private institutions whose fees are cheaper or even to encourage their children to leave school. Subsequently, the future of professional careers of this future job seeker is no longer promising. Consequently, these masses with low levels of education are only increasing their ranks in the informal sector.

4.1.2.1. Link between informal sector and education

This figure represents the rates of young boys aged 25 who stop studying in primary school since 2005 to 2019.

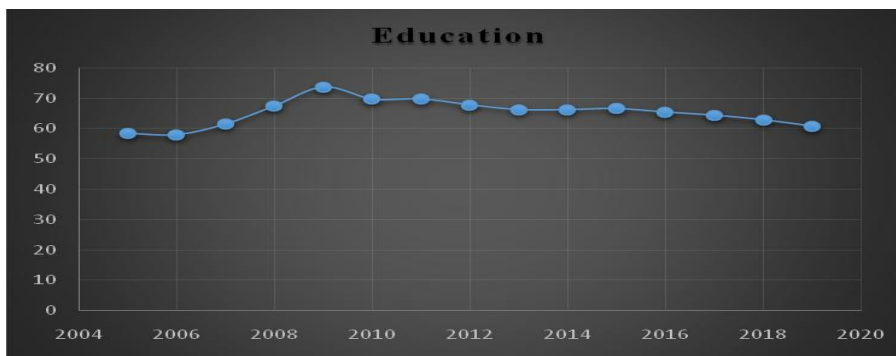


Figure 4: Primary school completion rate for boys aged 25
Source: author 2023

4.1.2. 2.Econometric analysis

We will present on the econometric analysis by the method of estimating the OLS coefficient, the relationship between education and that of the informal sector.

Model equation: $SI = a_0 + a_1 * Education + \epsilon$

Table II: Coefficient estimation table using the OLS method

Included observations : 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.74358	11.11169	1.146863	0.2721
Education	0.446312	0.169887	2.627118	0.0209
R-squared	0.346791	Meandependent var	41.87467	
Adjusted R-squared	0.296544	S.D. dependent var	3.305553	
S.E. of regression	2.772443	Akaike info criterion	5.000900	
Sumsquaredresid	99.92370	Schwarz criterion	5.095307	
Log likelihood	-35.50675	Hannan-Quinn criter.	4.999895	
F-statistic	6.901750	Durbin-Watson stat	0.258782	
Prob(F-statistic)	0.020902			

For education, regarding the statistics of t-Student at the 5% threshold, the royalties drawn by the sector are positive 2.627118 and the p-value of t-Student is less than 5% which shows that the rates of The 25-year-old boy's primary school

completions are significant. The elasticity between the informal sector and education is also positive at 0.446312, this positivity shows that the higher the primary school completion rate for boys aged 25, this has a positive influence on the informal sector. Thus the degree of explanation of the variable explained by the explanatory variable is low, with an R² value of 0.35 which is lower than the coefficient of determination which is 50%.

The Fisher statistic of p-value which is less than 5% (0.05), which shows that the coefficients of our model are overall significant.

4.1.3. Informal sector and growth

The informal sector has a significant impact on the country's economy. In Madagascar, it represents a significant part of economic activity.

4.1.3.1. Evolution of GDP per capita

We will present the GDP per capita from the year 2005 to the year 2019. We will also test with the informal sector using the least squares method.

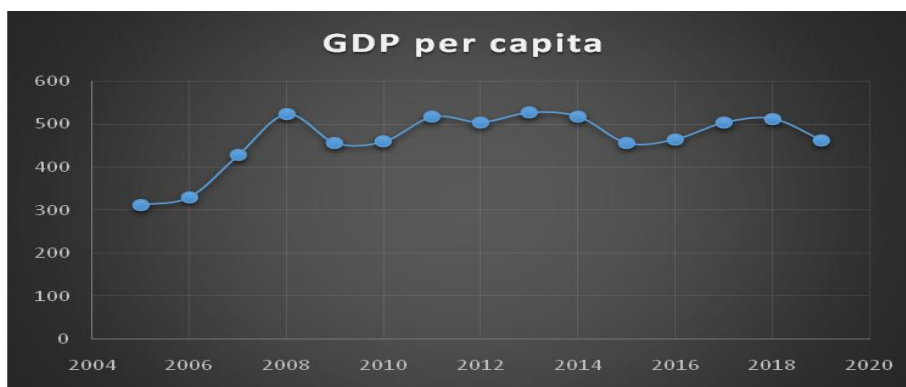


Figure 5: GDP per capita

Source: author, 2023

4.1.3.2. Econometric analysis

We will present on the econometric analysis using the OLS coefficient estimation method, the relationship between GDP per capita and that of the informal sector.

Table III: Estimation of coefficient by the OLS method

Included observations : 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.58963	6.513855	6.538314	0
GDP	-0.001538	0.013886	-0.110788	0.9135
R-squared	0.000943	Meandependent var	41.87467	

Adjusted R-squared	-0.075907	S.D. dependent var	3.305553
S.E. of regression	3.428717	Akaike info criterion	5.425815
Sumsquaredresid	152.8293	Schwarz criterion	5.520222
Log likelihood	-38.69361	Hannan-Quinn criter.	5.424809
F-statistic	0.012274	Durbin-Watson stat	0.181826
Prob(F-statistic)	0.913476		
	0.000943		

For economic growth, regarding Student's statistics at the 5% threshold, GDP per capita is negative -0.110788 and Student's p-value is greater than 5% which shows that GDP per capita is significantly low. The elasticity between the informal sector and GDP per capita is negative at -0.001538, which means that the more GDP per capita decreases, the more the informal sector influences it.

The degree of explanation of the variable explained by the explanatory variable is not good with an R^2 of 0.000943 which is lower than the determination coefficient of 50%. The Fisher statistic of p-value which is less than 5% (0.05), which shows that the coefficients of our model are overall significant.

4.2 Discussions

As we said above, the informal sector is a sector that is not regulated or controlled by the State. It includes all these small economic activities that take place outside the legal framework, such as small street businesses, street vendors, self-employed workers, and many others. This informal sector plays an important role in the economy, contributing to job creation, the production of goods and services, as well as the generation of income for many families. On the other hand, if the government decided to simply expel the informal sector, it would risk creating major problems.

Indeed, some believe that if people in the informal sector have access to better training or education, it could help them exit this sector and join the formal sector. Because many people work in the informal sector out of necessity, not by choice. So if we give them the means to learn new skills, they could find better paid and more stable jobs. Training or education could allow workers in the informal sector to improve their technical skills and their knowledge of the market. It could also help them understand the issues of formal sector regulations and standards, and to comply with them. In addition, better training could also encourage the entrepreneurial spirit.

The formal sector must also offer employment opportunities to trained people. The informal sector contributes to Madagascar's economic growth through job creation. So, the idea is that the informal sector can generate a lot of jobs, especially for people who do not have access to the formal sector. We see that small jobs like street vendor or self-employed worker, but it allows these people to earn a little living. And what's more, the more employment there is, the more income circulates in the economy. People spend their money, it helps keep commerce and small businesses running.

5. Conclusion

To conclude, the challenges of the informal sector in the face of development are an unavoidable phenomenon these days. This is a subject that concerns the country's leaders. Several definitions have been adopted to define the informal sector as follows; the informal sector in fact designates all activities which do not have legal recognition. This means that it escapes tax control. Madagascar is surrounded by the Scattered Islands of the Indian Ocean. 41% of jobs in the informal sector are held by women and the remaining 59% are held by men. More than a third of heads of informal production units are under 30 years old. In most cases, more girls enter the informal sector than boys. They often work as itinerant traders, family helpers, and work with families. The precariousness of informal work is due to the lack and/or low level of education. The lower the level of education, the lower the quality of work offered; this hampers competitiveness in the market.

Indeed, the challenge of the informal sector in Madagascar with regard to development lies in the need to find a fair balance between the promotion of economic activity and the social protection of informal workers, while guaranteeing an equitable contribution to development. economy of the country. This requires efforts from both the government, economic actors and society as a whole.

The questions arise: "what are the main opportunities and challenges linked to the informal sector in Madagascar?"

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