



Full Length Research Article

PROFILE OF THE OF ILLEGAL FINANCIAL INVESTMENT INSTITUTIONS OF COTONOU IN BENIN

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ARTICLE INFO

Article History:

Received 19th October, 2016
Received in revised form
28th November, 2016
Accepted 20th December, 2016
Published online 30th January, 2017

Key Words:

Ponzi; Institution;
Microfinance;
Illegal investment;
Households.

ABSTRACT

This article aims at analyzing the individual and environmental factors that determined the loss of the savers to a Ponzi scheme known in Benin as ICC *et al.* Data was collected on the populations of Cotonou thanks to an investigation with 5000 households representative of the city. A multilevel logit model was used to research the environmental and individual factors that lead a man or a woman into investing their savings in an illegal institution. The analysis of the results emphasizes the fact that individual variables like the level of education and living standards have a significant and negative impact on the loss of the investments. On the other hand, the environmental variables having a significant impact on the probability of losing one's investment or not are: the availability of a certain number of microfinance institutions, the number of markets, terminals and car parks, the availability of membership organizations and the number of Protestant churches. Whoever has lost their savings in the ICC services *et al.* institutions is an uneducated man or woman, who belongs to the poorest 20%, and lives in a district where there are no formal savings institutions. What is the incidence on public policies?

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INTRODUCTION

Benin, like many countries around the world, had its fair share of illegal financial investment institutions. Investment in banking institutions depends on the confidence between the bank and its client. It also depends on the confidence the bank has on the number of people investing in with it. Indeed it is a fraudulent financial arrangement that seeks to remunerate the investments of oldest clients by the deposits of new ones. These illegal institutions collect savings and invest the money without an approval from the relevant authorities in charge of supervising and controlling the financial sectors. Moreover, these illegal institutions, that wrongly bear the denomination "financial institutions", proliferated by enticing the public with remunerations at high interest rates bordering or exceeding 50% per quarter, that is to say 200% annually. This illegal system is called the Ponzi scheme. Although illegal investments made victims in other countries (Marc Artzrouni, 2009, Jude C Eggoh, Denis Acclassato, 2013) before Benin, the Beninese populations were not deterred as they were manipulated by the founders of the institutions. Illegal financial investment started in Benin with the institution

Investment Consultancy and Computing Services (ICC-Services) in 2007. This illegal activity made great strides during four years. Registered in 2006 as an association under the law 1901, ICC-Services was supposed to be a non-profit organization. It was later registered in the type A companies register at the Benin Chamber of Commerce and Industry (CCIB), with the following areas of intervention: fund deposit, tontine, and savings. The public authorities' casualness made way for this nongovernmental organization (NGO) to undertake microfinance activities. Moreover, in a bid to increase its profits and the number of its clients, ICC-Services offered financial investments at higher interest rates than the commercial banks. These rates vary from 40% to 250% on deposits made at their counters while commercial banks offer 3.5% rates in average¹ (2010). First, this institution's activities were open to the flock of the Church of Celestial Christianity. Then, these activities extended to the whole population who believed State had granted this NGO an authorization to run financial activities. Moreover, some citizens got indebted with the primary banks to enable them make deposits with ICC-Services. The successful activities of ICC services will lead to the institution of almost 200 illegal "financial investment"

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¹: Report issued in BENIN in 2010 by the International Monetary Fund's Monetary and Capital Markets Department.

institutions such as "Libertas Communication, La Cle du Bien-Etre, Fen Finance, Caisse Fifonsi, Sage Finance, Ong la Rosée Bénie, Société Nova Presta Com, Société Financière du Bénin (SoFiB)". These companies are savings collection and capital investment institutions that operate illegally in several cities of Benin. Moreover, these institutions were based on a pyramid scheme. In other words, deposits made by new subscribers were used to pay the formers' maturities. Thus, the number of people defrauded in this financial scam varies between a hundred and a hundred and fifty thousand savers. The illegal investment crisis had very detrimental consequences on the Beninese economy. The total amount of the damage is believed to be around 155.6 billion CFA francs, with more than 150 000 victims (IMF, 2010; Jude C Eggoh, Denis Acclassato, 2013); the various companies were unable to refund their clients. The popular discontent ended up leading to the government's intervention. Thus, through an official statement, the government made the decision to put an end to the activities of the illegal money investment institutions and also launched a legal procedure. Two committees were thus created: a Crisis Committee and a Monitoring Committee. This article aims at determining the factors that influence an individual into depositing their financial resources with an illegal institution offering an annual 200% pay rate. Are these factors individual or do they depend on the environment in which the individual is located? Through contextual factors that are beyond the individual factors, the background analysis comes to a better identification of populations at risk, which is handy during the development of programs. The multilevel models prove particularly suitable to the contextual data analysis, because they take their hierarchical structure into consideration. This article is organized as follows: after the introduction in which the problem is recounted, the second section presents the literature review on the illegal financial investments.

Literature Review

Financial innovation can be perceived as a process through which banks or financial intermediaries, on a regular basis, seek to increase their profits, reduce the risks related to financial intermediation, and circumvent the constraints set by the financial authorities as regards to loans, then face competition from the other financial intermediaries (Sobreira, 2014). Against this financial innovation context, problems arise, as to the adequate regulation between what is legal and what is not. Such is the case of Benin, where a financial crisis followed the investment of money with illegal institutions. In this regard, the analyses tackle the issue of the regulatory framework and that of the laws regulating the financial system in Benin. For this purpose, let's recount that in Benin, the legislative and legal framework of the microfinance institutions provided for by the bill regulating mutual or cooperative savings and credit institutions (PARMEC Law) does not ensure the viability of some decentralized financial systems.² The financial crisis rising from the Ponzi scheme that shook Benin is alarming. This scam crisis appeared predictable as in Benin, only an estimated 0.2% proportion of the microfinance institutions are authorized (Lelart, 2008). In addition, it appears that this crisis rises not only from the high output promise but also from the weakness of the Beninese legislation (Eggoh and Acclassato, 2013). According to the IMF report (2010), this financial scam based on the Ponzi scheme during the period from 2006 to 2010, involved 150 000 individuals with an approximate loss of 155.6 billion CFA francs, representing nearly 5% of the 2009 GDP. Regarding the illegal investment institutions in Togo, the amount of money involved is estimated at 38 million dollars with a loss estimated at 1.9% of the GDP. Both the scandals related to the financial deception crisis in Togo and Benin broke out in 2010.

Text Box

A Ponzi scheme is a fraudulent financial arrangement that seeks to remunerate client investment mainly with the funds paid by new investors. When the scam is not uncovered, it is revealed in broad daylight when it collapses, that is when the amounts paid by new investors are not enough to cover the remunerations to older investors. It got its name from Charles Ponzi who became famous after establishing an institution based on that principle in Boston in the 1920s.

Artzrouni (2009) models Ponzi schemes using first order linear differential equations².

Let's consider a fund with an initial deposit $K > 0$ at a time $= 0$, a capital inflow $S(t)$, a promised return rate r_p and an effective return rate r_n . When $r_n > r_p$ then the funds is legal and has a profit rate of $r_n - r_p$. When on the other hand, $r_n < r_p$ then the funds promises more money than it can obtain. In this case, r_p is called the Ponzi rate.

Moreover, in order to model withdrawals made by the investors, Artzrouni (2009) defined a consistent withdrawal rate r_w , applied at any time on the promised accrued capital. The withdrawal at time t is thus worth $r_w K e^{(r_p - r_w)t}$. It is also necessary to add the withdrawals of the investors who joined between the initial time 0 and time t , namely those who invested $S(u)$ at time t . Thus, these investors' withdrawal is $r_w S(u) e^{(r_p - r_w)(t-u)}$.

Integrating these withdrawals between 0 and t and adding the initial investors' withdrawals, we get:

$$W(t) = r_w (K e^{(r_p - r_w)t} + \int_0^t s(u) e^{(r_p - r_w)(t-u)} du)$$

When $S(t)$ is the value of the fund at time t , then $S(t + dt)$ is obtained by adding to $S(t)$ the nominal interest $r_n S(t) dt$, the capital inflow $S(t) dt$ and by subtracting the withdrawals $W(t) dt$. Thus,

$$S(t + dt) = S(t) + (r_n S(t) + S(t) - W(t)) dt; \text{ which leads to the linear differential equation } \frac{dS(t)}{dt} = r_n S(t) + s(t) - W(t)$$

This high interest rates system, is only sustainable when the customers flock, enticed by the financial promises. These "guarantees" are all the more tempting as the first clients are satisfied and advertise considerably the investment. The first investors, happy with this investment, join in the chain again adding up to all those that the institution was able to convince.

Source : Artzrouni (2009) le système de Ponzi, https://fr.wikipedia.org/wiki/Système_de_Ponzi

The third section presents the multilevel model used to determine the profile of the households investing in the illegal institutions in the city of Cotonou. The fourth section relates to the interpretation and economic policy implications from the model's results.

Côte d'Ivoire also suffered from this plague that run between 2005 and 2006. There is also the case of Albania with a total loss around 1.7 billion US dollars (Jarvis, 2000; Monroe *et al.*,

²January 30, 2012's issue of the "Le Matinal" newspaper.

2010). This plague is not particular to Africa as several cases were recorded throughout the world; inter alia, the Bernard Madoff case in the United States. In the Madoff case, the scam involved 65 billion US dollars. The consistent and high yields, ranging between an average 7 and 11% per annum, offered by the Madoff funds, whatever the economic circumstances, were sustained thanks to a Ponzi scheme. The Madoff case stresses the significance of community bonds and that of social networks based on confidence in this type of scam and questions the quality of the control exerted on the regulated institutions. After the United States, a smaller Ponzi scheme was tried out in Japan in 2009. The amount of the prejudice is estimated at 126 billion yens (or 1.1 billion Euros) and supposedly involved 37 000 people, for a 36% return on investment. The majority of the studies did not define the standard profile of the victims or that of the people who established these kinds of illegal money investment institutions. This shows that there is a need for research in order to determine the standard profile of the victims to these financial scams. Whether in developed or developing nations, there is the need to determine the standard profile of the victims to illegal investment. Having an idea of the description of the victims reported in Benin is necessary for the definition of better public and population sensitizing policies. This paper aims at contributing to meeting this need for information by getting the standard profile of the people who fall victim to this scam.

MATERIALS AND METHODS³

Taking into account the structure of our data and taking into consideration all the factors unnoticed as to the possibility of investing in a Ponzi scheme, using a standard logit model becomes unsuitable. Indeed, individuals of the same environment present common characteristics that go unnoticed by the econometricians. Under these conditions, the hypothesis of the independence of the residues between individuals is not tested whilst the multilevel models, through a separate modelling of the observed heterogeneity attributable to the environment and that related to the individuals, makes it possible to obtain unbiased results. Multilevel models are models that analyze data having a hierarchical structure. The overall goal of these models is to measure environment influence on individual behaviors. Therefore, they make it possible to relate the features of different statistical units and produce an overview between individual and contextual observation in order to explain a social phenomenon. Many studies have stressed out that the inclusion of contextual factors in analyses, in addition to individual features, could lead to a better identification of populations at risk in the development of prevention or resource distribution programs (Diez- Roux AV, 1998, Palmer RF *et al.*, 1998).

Thus, we will observe how individual and aggregated features differently impact on the behaviors of the individuals living in each zone. For example, by studying the weight of children in Iran, the authors observed that 60% of residual variation was at the individual level, 20% at the household level, 12% were related to the neighborhood and 8% to the province of residence (Hosseini M. *et al.*, 1998). The variable explained in this study is a dichotomous variable (whether or not one has lost its savings in the ICC Service Gate). The model adapted to the objectives set is then multilevel logit model. Multilevel

models differ from conventional regression models due to the complex specification of residuals, simultaneously estimated at the level of individuals (ϵ_{ij}) and groups (u_{0j}). We consider that at each level, residuals are drawn from a larger population (Diez-Roux AV, 2000): they are mutually independent, normally distributed, and with 0 as average. Moreover, u_{0j} are assumed to be independent ϵ_{ij} (ChaixB. Chauvin P. 2003). The model estimated in this study is bilevel where the response variable y_{ij} is a binary variable.

$$\begin{cases} y_{ij}^* = x'_{ij}\beta + u_j + \epsilon_{ij} \\ y_{ij} = I(y_{ij}^* > 0) \end{cases}$$

$i = 1, \dots, n$ is the index of the district, $j = 1, \dots, m$ is the index of the districts. $x'_{ij}\beta$ represents the fixed portion of the model with x'_{ij} , being the vector of explanatory variables related to the savers and the original district. As for β it is the vector of regression coefficients. $u_j + \epsilon_{ij}$ represents the random part of the model and include the sum of the model residuals with u_j representing the unobserved heterogeneity between the districts and ϵ_{ij} being the error term for the individual i of the district j .

To take into account the structure of the data and the correlation between observations (two individuals in the same district will have the same features at least for certain variables), we used a random coefficient model. The structural form of the multilevel binary logit model applied to our study gives:

$$\begin{cases} y_{ij}^* = \beta_{0j} + x'_{ij}\beta_i + \epsilon_{ij} \\ \beta_{0j} = \beta_{00} + u_{0j} \end{cases}$$

with ϵ_{ij} being the error term that measures the deviation between the explained variable for the individual i in the environment j . β_{00} represents the average value of the explained variable for all individuals and u_{0j} is the error term measuring the difference between β_{00} and the explained variable of the environment j . ϵ_{ij} et u_{0j} are supposed to be consistent with a normal distribution having zero mean and of constant variance respectively σ_1^2 and σ_2^2 . As errors are assumed independent of each other, then we have:

$$V_{y_{ij}} = V_{\beta_{00} + u_{0j} + \epsilon_{ij}} = V_{\epsilon_{ij}} + V_{u_{0j}} = \sigma_1^2 + \sigma_2^2$$

The variance decomposition formula used to estimate the share of the explained variable attributable to a j level of analysis is as follows:

$$\frac{\sigma_j^2}{\sigma_1^2 + \frac{\pi^2}{3}}$$

The estimation of the multilevel model is usually done in two steps. First, we estimate an empty model, a model without explanatory variables. That model allows to estimate the different components of the variance by evaluating the explained part at each level of the analysis and to evaluate the impact of each hierarchical level on the likelihood to be enrolled at school.

The specification of the empty model is as follows:

$$y_{ij} = \gamma_{00} + u_{0j} + \epsilon_{ij}$$

³ : This section was prepared with the support from M. Zinsalo Lorenz

Secondly, the models are estimated with level 1 and level 2 explanatory variables. The introduction of explanatory variables then makes it possible to evaluate their impact on variance reduction and the residual variability at individual and contextual levels.

Survey data

The data originates from the 2005 Survey on the Community Poverty Monitoring System (SSCP) in the city of Cotonou. In the context of decentralization, the SSCP proposes to observe the living conditions of populations in administrative settings, *i.e.* the communes and/or municipalities of the country. In addition, Benin is the fourth African country shortlisted for the implementation of the Community Poverty Monitoring System after Senegal, Burkina Faso and Ghana, and the pilot phase of the scheme was launched in May 2005. That system allows the local community to be actively involved in the process of data collection and analysis. It allows municipal authorities to progressively monitor the living conditions of the populations. This monitoring system which is very popular in the Asian countries and in particular in the Philippines, allowed to investigate 5027 households in order to facilitate:

- The identification and location of vulnerable households;
- The better targeting of vulnerable households; and
- A more rational use of public resources in a context of scarce Official Development Assistance.

The field of study is the thirteen (13) districts of Cotonou. The surveyed population consists of heads of household or their representatives as well as local and/or municipal authorities. The sample includes 5027 households randomly selected in all the 13 districts of Cotonou.

Table 1. Distribution of Household Heads in Cotonou per District

Districts	Total	Percentage
1 st district	344	6.8
2 nd district	345	6.9
3 rd district	453	9
4 th district	291	5.8
5 th district	246	4.9
6 th district	502	10
7 th district	339	6.7
8 th district	287	5.7
9 th district	464	9.2
10 th district	317	6.3
11 th district	267	5.3
12 th district	672	13.4
13 th district	500	9.9
Set	5027	100

Source: Field data, SSCP survey, 2012

The data collection method consisted beforehand of a census of all the households in the targeted areas and then on the one hand of a selection of 5027 households in proportion to the size of each district and on the other to that of each neighborhood. The data is collected by means of a standard appreciation, a household questionnaire with a qualitative component and a community questionnaire. The standard appreciation made it possible to assess the situation regarding the living conditions of the populations. Broken down into several sections, the household questionnaire was directed to the household heads or their representative and allowed to collect information on the members of the household, their

socio-demographic features and their living conditions. As regards the community sheet, it made it possible to collect information on the transportation, housing, communication, education and health infrastructures available in each district. These sheets were directed to the head of district and neighborhood chief head of quarter. The questionnaire is the same for all the countries. However, each country can add specific components. In Benin two specific components have been added: access to illegal placement agencies and personal records. This study reveals the profile of the savers having put their money in illegal placement structures. The dependent variable to be studied is therefore the financial placement in an agency deemed illegal. This variable is dichotomous. In the households surveyed, 1445 individuals have a savings account. So our study will focus on this population. 25.14% of this population, *i.e.* 363 individuals, reported having lost their savings at ICC services and co.

Table 2. Distribution of People Who Have Lost Their Savings

Explained variable: Loss of savings in the ICC Gate	Frequency	Percentage
No	1081	74.86%
Yes	364	25.14%
Total	1444	100%

Source: SSCP Survey, 2012

Given the literature on the determinants of saving and the goals to achieve in this study, the explanatory variables are of two kinds. First, we have the level 1 variables that are features specific to the individuals themselves and, secondly, the variables related to the environment in which they live. Apart from the invest saver's religion and level of education, our individual explanatory variables are of demographic and economic nature. The data collected showed that the invest savers database has more men than women. Indeed, in our database we have about 83% of males and 17% of females. The variable "marital situation" has six parts. In this variable, about 52.89% of savers are monogamous, about 24.4% are in cohabitation and 24% of the savers are distributed among polygamous, single, divorced, separated and widowed. All the ethnic groups of Benin are more or less represented with predominance of the Fon ethnic group (48.17%) followed by the Bariba ethnic group (17.23%), the Adja ethnic group (13.63%) and the Yoruba ethnic group (12.87%). The distribution according to religion reveals that the majority of those who put up their money in these agencies deemed illegal are Catholics (60.07%). The other very well represented religion is Islam (about 15.92%). Protestants, Celestials and other Christians together account for only 24.01% of savers. It is important to know the distribution of the population according to the level of education in order to assess the effect of the level of education on the likelihood to put up money in these illegal agencies. The data collected reveals that more than 88% of the people surveyed (Table 3 below) have at least primary education. Among those with secondary education, 25% have a JSS level and 24% have an SSS level. The population living standard was developed from a set of goods and properties owned by the population. Five categories of living standard have been defined with a predominance of the 20% moderately poor who account for about 46.50% of the savers and the 20% who are neither rich nor poor, that is to say who have an annual income equal to the poverty line represent 36% of the savers. The age of the surveyed is a basic continuous variable. Age groups have been developed as part of this study. The vast majority of savers (78%) are aged

between 20 and 55 years, the minimum age being 12 years. The oldest savers is 97 years old. The other individual variable that was taken into account in the study is the relationship with the household head. It should be noted that over 97% of the savers are household heads.

The outcomes of this econometric analysis indicate that the model is globally significant, as evidenced by the Prob (Prob > chi-squared) = 0.0000 with 1% risk factor. This is verified when calculating the statistics of the likelihood-ratio test.

Table 3. Distribution of Population According to Individual Features

Explanatory Variables	Savers	Frequence	Percentage	ICCFrequence	Percentage
Sex	Male	1204	83.32%	291	80.17%
	Female	241	16.68%	72	19.83%
Family Relationship	HouseholdHead	1407	97.37%	357	98.35%
	Other	38	2.63%	6	1.65%
Marital Status	Single	114	7.89%	25	6.89%
	Married	824	57.02%	192	52.89%
	Cohabitation	342	23.67%	88	24.24%
Ethnic Group	Divorced/Separated/Widowed	165	11.42	58	15.98%
	Adja and affiliated	197	13.63%	46	12.67%
	Bariba and affiliated	249	17.23%	79	21.76%
	Fon and affiliated	696	48.17%	162	44.63%
Religion	Yoruba and affiliated	186	12.87%	48	13.22%
	Other	117	8.10%	28	7.71%
	Muslim	230	15.92%	49	13.50%
	Catholic	838	60.07%	213	58.68%
	Protestant	89	6.16%	21	5.79%
	Celestial	48	3.32%	12	3.31%
	Other	164	11.35%	54	14.88%
Levelof Education	Vodoun	18	1.25%	6	1.65%
	No religion	28	1.94%	8	2.20%
	None	106	7.34%	42	11.57%
	Primary	229	15.85%	64	17.63%
Quality of Life	Secondary	647	44.78%	180	49.59%
	Higher	463	32.04%	77	21.21%
	20% Poorest	189	13.10%	69	19.01%
Quality of Life	20% Moderately Poor	657	45.53%	169	46.56%
	20% Half Moderately Poor-Half Moderately Wealthy	522	36.17%	113	31.13%
	20% Moderately Wealthy	67	4.64%	12	3.31%
	20% Wealthiest	8	0.55%	0	0%

Source: SSCP Survey, 2012

Table 4. Distribution of Descriptive Statistics of Level 2 Variables per Level

Variables	Minimum	Average	Maximum
<i>Number of Neighborhoods</i>	4	11	15
<i>Number of Banks</i>	0	4	16
<i>Number of Microfinance Institutions</i>	1	6	11
<i>Number of Markets</i>	1	3	6
<i>Number of Savers</i>	0	2	6
<i>Number of Associations</i>	0	10	25
<i>Number of Catholics</i>	1	3	6
<i>Number of Protestants</i>	0	1	4
<i>Number of Celestials</i>	0	1	9

Source: SSCP Survey, 2012

Level 2 variables in this study are: the population of each district in the city (estimation by INSAE in 2007), the number of neighborhoods in each district, the number of banks and formal microfinance institutions in the district. In addition to these, the number of markets, the number of stations and parkings and the number of associations in each district of the municipality were recorded. Regarding religion, we have taken into account the number of churches of each denomination in the setting: Catholic, Protestant, Evangelic, Celestial, Muslim and Animist.

Outcomes

The first part will consist of the rough analysis of the variance. This analysis will give an idea of the importance of inter-class variance in the total variance. For this, an empty model (without explanatory variables) will be estimated. The second part will deal with individual features and environmental variables. In the third part, there will be discussion of the different outcomes and some recommendations.

Indeed, the calculated statistic gives a value of 2.2537 which is lower than the Chi-squared statistic at 18 degrees of freedom. In order to evaluate if there is a heterogeneity between the districts that partly determines the fact that an individual loses his/her savings in an illegal agency, a multilevel model with no explanatory variable has been estimated to decompose the variance. The aim here is to ensure that there is a significant heterogeneity attributable to each level of the model. Being a bi-level model, the intra-class correlation coefficient expresses the dependence or interactions between individuals. In this study, intra-class correlation is equal to 0.167. This suggests that 16.7% of the loss of savings variability is among the districts.

Characteristics having or not an impact on the loss of savings

An estimation of random coefficient models was carried out and the explanatory variables on the individual and the variables related to the environment in which these people live

have been introduced. In order to measure the magnitude of effects of the explanatory variables on the explained variables, the odds ratio have been estimated.

average 20% moderately poor are 1.445 times less likely to participate and lose their money in a Ponzi scheme. A side from the 20% who are neither poor nor rich and for whom the

Table 5. Distribution of Econometric Estimates per Selected Variables

VARIABLES	Coef	P. Value	Odds Ratio	P. Value	
Household Size	-.0032 (.0321)	0.920	.9937 (.0322)	0.846	
Sex	.1004 (.1925)	0.602	1.1181 (.2167)	0.565	
Age1	-.0247 (.0286)	0.388	.9750 (.0280)	0.379	
Family Relationship	-.5475 (.3745)	0.144	.5734 (.2127)	0.134	
Marital Status	.1108 (.0926)	0.231	1.1106 (.1038)	0.262	
EthnicGroup1	-.0291 (.0629)	0.643	.9682 (.0611)	0.610	
Religion	.0621 (.0458)	0.175	1.0659 (.0491)	0.167	
	20% poorest		Ref	ref	
	20% moderatelypoor		.6808 (.1289)	0.042	
	20% neitherpoornorwealthy		.6908 (.1429)	0.074	
	20% moderatelywealthy	-.1982** (.0881)	0.024	0.054	
Living standards	20% wealthiest		.0001 (.0001)	0.986	
	None		Ref	ref	
	Primary		.5917 (.1567)	0.048	
Education	Secondary	-.3126*** (.0786)	0.000	0.047	
Level	Higher		.3350 (.0902)	0.000	
Number of Neighborhoods		-.0584 (.0398)	0.142	.9335 (.0377)	0.089
Number of Banks		-.0867 (.0559)	0.121	.9159 (.0511)	0.116
Number of Microfinance Institutions		-.1273** (.0544)	0.019	.8732 (.0475)	0.013
Number of Markets		.5101*** (.1275)	0.000	1.6977 (.2162)	0.000
Number of Stations/Parkings		.3646* (.2046)	0.075	1.4567 (.2975)	0.065
Number of Associations		-.0863*** (.0250)	0.001	.9153 (.0228)	0.000
Number of CatholicChurches		-.2259 (.1403)	0.108	.7974 (.1116)	0.106
Number of Protestant Churches		.2980 ** (.1590)	0.061	1.3258 (.2107)	0.076
Number of Celestial Church		.0438 (.0571)	0.443	1.0392 (.0596)	0.503
cons		.2839 (.7373)	0.700	1.7399 (1.3329)	0.470

Note: *** Statistical significance at 0.01 %, 0.05 %, * 0.1%.

Standard deviation in parenthesis.

Source : The Author

Individual feature sand loss of savings

The outcomes of the models show that variables specific to the saver such as: standard of living, educational level have a significant influence on the likelihood that an individual decides to put up his/her money into an illegal structure. These two variables are significant at the threshold of 1% for education level and 5% for the standard of living. Therefore; there are level of education and standard of living effects that negatively play on the loss of savings in a Ponzi scheme. In order to better understand the determinants of Ponzischemes, odd ratios were estimated. These calculations have focused more on both significant and saver specific categorical variables. Given the odds ratio table, we can say that a citizen with primary education level is 1.69 times less likely to lose his or her savings in a Ponzi scheme compared to someone who has no level of instruction. Similarly, individuals with a high school and university education are 1.615 and 2.985 respectively less likely to participate and lose their savings. The decision to put up money into illegal placement agencies is greatly influenced by the saver's level of education.

This means that ignorance of saving standards was a factor that led the population to resort to these structures in order to benefit from savings rates ranging from 150% to 200%. Individuals with secondary education area bit more likely to deposit their savings in illegal agencies than those with primary education. These figures show that there is no difference in behavior between those with primary level and those with secondary level. Only individuals with higher education did not take much risk. Low education is a factor of ignorance and poverty. Regarding the standard of living and taking into account the 20% poorest as a benchmark, individuals with a standard of living corresponding to the

odds ratio has increased from 1.445 to 1.447 times less likelihood, the odds ratio increased for individuals with a high standard of living striking 2.076 for the 20 % moderately wealthy and 10,000 for the 20% wealthiest. Thus, the 20% moderately wealthy are 2,076 times less likely than the 20% poorest. In addition, the 20% wealthiest are 10,000 less likely to invest and losing their money in Ponzi scheme. We easily notice that the higher the level of poverty the greater the risk of depositing one's savings in illegal agencies and losing it. Lack of livelihoods means lead to resort to all means and opportunities to increase one's resources. The interest rates applied are perceived as factors of immediate enrichment without compensation. This easy gain is a manifestation of the current perception of enrichment in Benin. Corruption, embezzlement of public funds and cybercrime have biased the good values of enrichment. Gender inequalities in the society also have an impact on investment in illegal agencies but not significant. The outcomes suggest that there is differing behavior between men and women. Compared to men, women are 1.12 more likely to lose their savings through this scheme. Indeed, women already suffer the lack of education and low standard of living. In addition, they are the ones who usually go to markets. It was subsequently shown that markets facilitate the circulation of all kinds of information which, in the case of placement in illegal agencies, have a negative impact on the living conditions of the populations.

Environmental features and loss of savings

Variables related to the environment in which the individual lives and works, variables such as the existence of some microfinance institutions, number of markets, stations and parking, the existence of associations and some Protestant churches have significant impacts on the likelihood of saving

through illegal placement agencies. Apart from the number of stations and parkings and the number of Protestant churches variables that are significant at 10% and the number of microfinance institutions which is significant at 5%, the number of markets and the number of associations explain the likelihood of losing one's savings at 1%. Unlike the market environment and the belonging to Protestant churches that have a positive impact on this probability, belonging to an association and the presence of a legal microfinance institutions have a negative impact on the likelihood of losing one's money. The outcomes thus found show that the market is the meeting place where all the information come and go without a real checking. Information on placement in illegal agencies is uncontrolled and the people visiting these areas are lured with the benefits of such placement. On the other hand, when the district has official microfinance agencies, the population place their savings in these agencies regardless of the relatively low interest rate. Therefore, what drives the population is not the exorbitant rates of remuneration but the inexistence of legal structures. The illegal agencies have met the population's need for saving. Associative life is a training and education factor, because belonging to an association reduces the risk of putting one's savings in illegal investment institutions. In the associative arena, the people are informed and educated. Consequently, it is possible to define the profile of people who have lost their savings in illegal investment agencies.

Profile of an ICC and co. victim

The outcomes of the multilevel analysis show that individual and environmental variables lead to the decision to save money with an illegal investment institution. Variables such as level of education, level of poverty at the individual level and the presence of some formal or non-formal microfinance institutions, number of markets, stations and parkings, existence of associations and a number of Protestant churches at the environmental level, are key in deciding to save in these institutions. Thus, the citizen who decides to save in these institutions is an uneducated man or woman who is not a member of an association, who belongs to the 20% poorest and is living in a district where there is a market and there is no formal microfinance institution. More than men, women have been the victims of loss of savings. This profile calls for the following public policies.

Development of Economic Policies

The level of education is a very decisive factor in any decision-making process throughout one's lifetime.

- It is important that education be made compulsory until the age of 16 and that measures are taken to motivate or punish parents who do not send their children to school.
- The fight against poverty must be a constant concern. This entails creating jobs, training craftsmen, professions people and small traders. This will be about setting up:
- A community-based poverty monitoring system in all municipalities to better identify the poor in order to develop the best strategies of poverty reduction. This monitoring is being carried out in some countries, for example Asia countries where poor households benefit from special conditions.

The inexistence of formal microfinance agencies in the districts was an aggravating factor in the decision to resort to illegal agencies. Therefore, it is necessary:

To give the entire population the same chance to have access to formal microfinance institutions throughout the country in order to make the populations benefit from the same opportunities. The associative life makes it possible to often overcome the bad practices. Indeed, an association brings together different categories of individuals, some having more information than the others. Those who are educated or informed, also inform the others about bad practices in the field of saving. This is why association membership has had a negative impact on the likelihood of depositing one's savings in illegal structures. Markets, on the other hand, are vehicles of information that is not always right, especially in an environment where most actors are illiterate.

Conclusion

The collection of data on the living conditions of the population in the city of Cotonou has provided information on those who have suffered the loss of financial resources in the ICC and co. Gate. This collection of data which covered the entire city of Cotonou and sampled some 5000 households made it possible to describe the people who have been victims of the Ponzi scheme. The low level of education, the level of poverty, the non-existence of legal savings structures and the default of belonging to an association have been the determining factors in the decision to invest in agencies such as ICC-Services and Co. in order to benefit from very high interest rates. Ignorance of the saving standards has been a negative factor on the populations 'decision. In addition, policy measures have been proposed to prevent people in the future from making decisions that would worsen their poor living conditions. The Government has a very important role to play in ensuring a proper distribution of legal institutions throughout the country and ensuring regular monitoring of the savings institutions in the country. The law on setting up microfinance institutions must be popularized and the population made aware of the interest rates of an investment. All the actors at the decentralized level must be sensitized to avoid the despoliation of people.

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