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PERSPECTIVE ON THE IMPLEMENTATION OF THE AUTOMOBILE GUARANTEE FUND (FOGA) IN THE DEMOCRATIC REPUBLIC OF THE CONGO

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Summary: This article explores the perspective of implementing the Automobile Guarantee Fund (FOGA) in the DRC. In the face of the growing number of vehicles and the concomitant increase in road accidents, the absence of an effective compensation system for victims of accidents involving uninsured or unidentified vehicles represents a social injustice. The FOGA aims to fill this gap by compensating victims, drawing inspiration from foreign models that have demonstrated their effectiveness in road safety and social protection. Two hypotheses are formulated: the immediate care of victims significantly influences their perception of the FOGA (victims cared for by bystanders having a more negative perception), and the attraction of donors, the strengthening of social justice, and the improvement of road safety constitute opportunities, while the realization, mismanagement, and integration of citizens represent challenges. The methodology is based on a deductive approach, using a stratified random sample of 420 individuals (348 drivers and 43 hospitalized victims in Kinshasa). The data are collected through questionnaires and interview guides, analyzed using univariate, bivariate, logistic regression, SWOT, and PESTEL analyses. The literature review explores economic and behavioral theories (expected utility, moral hazards, adverse selection, incentives, behavioral) and their empirical applications in the field of automobile insurance. The study concludes by highlighting the complexity of implementing FOGA in the DRC, given the structural and institutional constraints, but emphasizing the need for an integrated approach to ensure its success.

Keywords: Road safety (R41), auto insurance (G22), and economic development (O10)

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1. Introduction

The issue of road safety is a global concern that is particularly important in developing countries, such as the Democratic Republic of the Congo. Road accidents are frequent there and cause numerous deaths and injuries. In the face of this alarming observation, the establishment of an Automobile Guarantee Fund (FOGA) appears as a promising solution to improve the protection of victims and strengthen the civil liability of drivers.

The FOGA is a financial mechanism intended to compensate victims of road accidents when the responsible party is not identified, is uninsured, or is insolvent. It thus constitutes a safety net for victims and their families, allowing them to obtain fair compensation for the damages suffered.

The prospect of establishing the Automobile Guarantee Fund (FOGA) in the Democratic Republic of Congo is set against a backdrop marked by exponential growth in the vehicle fleet and a concomitant increase in road accidents. These road accidents have dramatic consequences on public health, the economy, and Congolese society as a whole (Ministry of Transport, 2021).

The absence of an effective compensation system for road accident victims, particularly when the responsible parties are unidentified, uninsured, or insolvent, constitutes a true social injustice. Many Congolese people thus find themselves destitute in the face of the financial consequences related to these traumatic events, which can lead to increased precariousness and family disorganization (Mutombo, 2019).

This initiative is inspired by similar models implemented in other African and European countries, where it has been demonstrated that FOGA contributes to improving road safety, strengthening social protection, and promoting economic development (World Health Organization, 2018).

The implementation of the Automobile Guarantee Fund (FOGA) in the DRC illustrates a complex challenge in a development context marked by competing priorities. This fund aims to compensate victims of accidents involving uninsured or unidentified vehicles, but its implementation faces several structural obstacles, such as inadequate road infrastructure and poor traffic management. In a country where resources are limited, their allocation to the FOGA might seem secondary compared to essential needs like education and health (French Development Agency, 2023). Moreover, institutional weakness and lack of transparency are likely to compromise its effectiveness. The lessons learned from the Millennium Development Goals emphasize the importance of rapid and coordinated implementation (UNDP, 2016). An integrated approach, involving government, private sector, and civil society, as well as institutional strengthening, is essential to ensure the success of FOGA.

In relation to the above, in this study, we asked ourselves the questions: (i) What is the impact of the care provided to victims of road traffic accidents on their perception of the implementation of the Automobile Guarantee Fund (FOGA) in Kinshasa, taking into account the circumstances of the accident and the socio-economic variables of the victims? and (ii) What are the opportunities and challenges associated with the establishment of the Automobile Guarantee Fund (FOGA) in the Democratic Republic of Congo?

These questions lead us to set two objectives. The first is (i) to "Evaluate the influence of the immediate care of accident victims, whether the accidents are with or without insurance, on their perception of the implementation of the FOGA in the DRC, including socio-economic control variables to understand their behavior regarding the perception of this fund." And the second is to (ii) Identify the opportunities and challenges associated with the establishment of the Automobile Guarantee Fund in the DRC.

Thus, to achieve this objective, it is appropriate to formulate a hypothesis whose verification will be carried out with empirical data. We will therefore start from the hypothesis (H1) that "The immediate care of victims of road traffic accidents has a significant impact on their perception of the implementation of the Automobile Guarantee Fund in the DRC." More specifically, victims taken care of by benevolent passersby or by themselves are more likely to have a neutral or poor perception of the implementation of the FOGA,

compared to those taken care of by the person responsible for the accident, after controlling for socio-economic variables. Moreover, it turns out that (H2) attracting donors, strengthening social justice, and encouraging the improvement of road safety are opportunities for the implementation of FOGA. As for the challenges, there is the issue of realization, mismanagement, and the integration of the concerned citizens.

2. METHODOLOGY

The methodology of this study revolves around these three main aspects: (i) the epistemological stance, (ii) sampling and population, and finally (iii) data collection tools and analysis methods.

2.1 Epistémological stance

In the scientific field, several reasoning techniques, such as deduction and induction, can be used. Deductive logic, often adopted in the natural sciences, follows a hypothetico-deductive approach: starting from theories, hypotheses are formulated and then empirically tested to establish laws. On the other hand, induction starts from particular observations to establish generalizations. For our study, we chose a deductive logic, formulating hypotheses based on existing theories and validated by empirical data.

2.2 Population and Sample of the Study

2.2.1 Target Population

Our research focused on three categories of individuals to gather essential data for analysis. On the one hand, specifically the drivers, the victims in the hospitals, and the traffic police officers. Due to limited resources, we focused on two categories. Indeed, we interviewed victims of accidents who were hospitalized and drivers of motor vehicles.

2.2.2 Sampling

This research uses stratified random sampling to represent two strata: hospitalized accident victims (S1) and automobile drivers (S2). In accordance with Royer and Zarlowski (2003), who emphasize that the sample largely depends on the research objective, a proportion p=0.5 is adopted to ensure statistical representativeness (in Kinshasa), in the absence of exact population data. Therefore, with p equal to 0.5, we determined our sample using the following formula:

$$n = \frac{Z^2 * p * (1 - P)}{E^2}$$

Où :

- **n:** sample size,
- **Z** : z-score (e.g., Z=1.96Z = 1.96Z=1.96 for 95% confidence),
- **p** : estimated proportion (p = 0.5 if unknown),
- E : margin of error (half-width of the confidence interval).

Assuming we want a confidence level of 95% and a margin of error of 5%, you can use the following values in the formula :

n = (1,96)^2 × 0,5 × (1-0,5)/(0,05)^2 = 384,16

In order to increase the accuracy of our study and account for missing values and probable responses, we rounded our sample to 420 individuals (stakeholders) to be surveyed. To distribute the total size of our sample across the two selected strata, we assigned weights to the different categories of the population in a reasoned manner based on the ease of accessing the data.

Table No. 1: Distribution of the population by categories of respondents (stratum)

Target population (responders to road accidents)	Weight	Number of individuals to investigate
Drivers of motor vehicles (S1)	0,890	348
Victims in hospitals (S2)	0,110	43
Total	1	391

Source: authors from Excel

The table shows the distribution of the sample for our research, divided into two categories: drivers of motor vehicles and hospitalized victims. The drivers represent nearly 90% of the sample, with a weight of 0.89. Thus, 348 individuals from this category will be surveyed, reflecting their strong relative contribution.

Table 2: Distribution of respondents (drivers) at intersections

Population of drivers			
Survey communes	Survey sites	Effective	Total
Mont-Ngafula	Matadi Kibala	14	47
	Mitendi	11	
	UPN	13	
	Cité verte	9	
Bandale	Molard	27	27
Gombe	Mandela	3	3
Ngaba	Rond-point Ngaba	24	24
Matete	Marché Matete	3	3
Lemba	Super Lemba	16	16
Kasa-Vubu	Mariano	12	37
	Victoire	16	
	Bongolo	9	
Nsele	Kinkole	10	30
	Terre jaune	10	
	Bibua	10	
Kimbanseke	Kingasani	10	10
Masina	Pascal	10	40
	Quartier 1	15	
	Bitabe	15	
Limete	14 ième rue	14	59
	Marché Matete	1	
	7 ième rue	14	
	Point chaud	7	
	Isam	13	
	Kapela	10	
Selembao	Marché Selembao	22	22
Ngaliema	Pompage	15	15
Kitambo	Magasin	15	15
Total			348

Source: authors from Excel

The weight assigned to victims in hospitals is less than 0.11, which means they represent less than 20% of the sample. As a result, the number of individuals to be investigated in this category is 43.

Table 3: Distribution of respondents in hospitals

N0	Communes	Hospital	Ni	fi
1	Mont-Ngafula	Centre hospitalier Monkole	6	0,14
2	Lemba	Cliniques universitaires de Kinshasa	10	0,23
3	Ndjili	Hôpital de l'amitié Sino-congolais	5	0,12
4		Hôpital de référence de Ndjili(7)	3	0,07
5	Nsele	Hôpital général de référence de Kinkole	10	0,23
6	Matete	Hôpital général de référence de Matete	7	0,16
7	Masina	Hôpital Roi Baudouin	2	0,05
		Total	43	1,00

Source: Hospital Platform in the DRC (PH-DRC)

2.3. Data collection tools and analysis methods.

2.3.1. Data Collection Tools

Among the tools used to obtain data related to the research topic under study, we used the questionnaire and the interview guide. To achieve this in the best possible way, we used the Kobocollect software, which allowed us to carry out the data collection operation with smartphones for better monitoring of data quality.

2.3.2. Data Analysis Methods

In this study, we used qualitative analysis methods. We started with univariate analysis, then moved on to bivariate analyses, and finally to multivariate analyses where we addressed Multiple Correspondence Analysis (MCA) and logistic regression to verify our hypotheses.

2.3.2.1. Univariate Analysis

Univariate statistical analysis involves describing the distribution of categories using absolute frequencies (number of occurrences) and relative frequencies (percentages). The results are often presented in the form of tables or graphs such as bar charts or pie charts. This allows for the identification of the distribution and main trends.

2.3.2.2. Bivariate Analysis

Bivariate statistical analysis explores the relationships between two variables using contingency tables and association measures (such as chi-square, Cramér's V). The results are often visualized using stacked or grouped bar charts, allowing for the evaluation of dependence or independence between the categories of the variables.

2.3.2.3. Logistic Regression

Logistic regression is a statistical method used to model the relationship between a qualitative dependent variable (binary or multinomial) and one or more independent variables (quantitative or qualitative). It estimates the probability of an event occurring using a logistic function. The coefficients indicate the effect of the explanatory variables on this probability.

2.3.2.4. SWOT Analysis

SWOT analysis is an essential strategic tool that allows for the evaluation of an organization's position by identifying its Strengths, Weaknesses, Opportunities, and Threats. By providing an overview of internal and external factors, this method helps to understand how a company stands in relation to its environment.

2.3.2.5. PESTEL Analysis

The PESTEL analysis evaluates six macro-environmental factors influencing an organization: Political, Economic, Social, Technological, Environmental, and Legal. It provides a comprehensive view of the external contexts impacting performance and strategic decisions, such as regulations, economic trends, social changes, or technological advancements, identifying opportunities and threats.

3. LITERATURE REVIEW

3.1. Theoretical Literature Review

Car insurance is a field where various theoretical paradigms converge. Economic, behavioral, and managerial theories provide an analytical framework for understanding the decisions of policyholders and insurers. We will present here a review of the main theories applied to this sector.

3.1.1. The Theory of Expected Utility

The expected utility theory, developed by von Neumann and Morgenstern (1944), is an essential foundation for understanding decision-making under uncertainty. It posits that individuals choose among options the one that maximizes their expected utility. In the context of automobile insurance, policyholders evaluate premiums and coverage based on their risk aversion and their perception of the likelihood of a claim (Dionne & Harrington, 2017).

3.1.2. The Theory of Moral Hazards

The theory of moral hazard analyzes opportunistic behaviors that arise after the conclusion of an insurance contract. Arrow (1963) showed that insurance coverage alters the incentives to be prudent. In the case of car insurance, drivers may adopt riskier behaviors once insured, knowing that the costs of accidents are partially transferred to the insurer (Puelz & Snow, 1994).

3.1.3. The Theory of Adverse Selection

Introduced by Akerlof (1970) in "The Market for Lemons," this theory explains how information asymmetry can lead to a deterioration in the average quality in a market. In car insurance, insurers do not always have complete information about drivers' behaviors, which can lead them to set high premiums to cover risks, thereby discouraging good drivers (Rothschild & Stiglitz, 1976).

3.1.4. The Theory of Incentives

This theory examines how to design contracts to align the interests of the parties. Holmström (1979) proposed incentive models that minimize agency costs. In automobile insurance, this translates into mechanisms such as deductibles or no-claims bonuses, which encourage drivers to adopt prudent behaviors (Dionne & Gélinas, 1992).

3.1.5. Behavioral Theory

Unlike classical theories, behavioral theory incorporates cognitive biases and heuristics. Kahneman and Tversky (1979) showed that individuals do not always process probabilities rationally. In car insurance, drivers may underestimate their exposure to risks or overestimate the usefulness of comprehensive coverage (Barseghyan et al., 2011).

These theories provide rich theoretical frameworks for understanding and anticipating decisions in the field of automobile insurance. They illuminate the strategic choices of insurers and the behaviors of the insured, highlighting the importance of regulating information asymmetries and designing effective incentives.

3.2. Review of Empirical Literature

In this section, we will present empirical studies that support each of the aforementioned theories.

3.2.1. The Theory of Expected Utility

The expected utility theory, developed by von Neumann and Morgenstern in 1944, explains how individuals make decisions by maximizing their utility in situations of uncertainty. Empirical studies have confirmed this approach in the context of insurance. Sydnor (2010) analyzed the choices of automobile insurance deductibles and observed that policyholders exhibit risk aversion consistent with the predictions of expected utility theory. Moreover, Barseghyan et al. (2011) studied the decisions of policyholders on different types of policies and confirmed that individuals' preferences often reflect an overweighting of small risks.

3.2.2. The Theory of Moral Hazards

The theory of moral hazards analyzes opportunistic behaviors that arise after the conclusion of an insurance contract. Arrow (1963) showed that insurance coverage alters the incentives to be prudent. Chiappori and Salanié (2000) provided empirical evidence for this theory by studying data from French car insurance, showing that policyholders with broader coverage have an increased risk of accidents, a result attributed to the relaxation of prudence efforts. Furthermore, Abbring et al. (2003) confirmed these results using longitudinal data from the Netherlands, highlighting similar behaviors in different contexts.

3.2.3. The Adverse Selection Theory

Introduced by Akerlof (1970) in "The Market for Lemons," this theory explains how information asymmetry can lead to a deterioration in the average quality in a market. Cohen (2005) empirically confirmed this phenomenon in the context of car insurance by showing that drivers who chose extensive coverage have a higher risk profile, supporting the idea that these individuals possess private information about their behavior. Finkelstein and Poterba (2006) also demonstrated adverse selection effects in the insurance market, although they observed that competition can mitigate these impacts.

3.2.4. The Theory of Incentives

This theory examines how to design contracts to align the interests of the parties. Holmström (1979) proposed incentive models that minimize agency costs. Dionne and Gagné (2001) studied the impact of bonus-malus systems on driver behavior and found empirical evidence of their effectiveness in reducing accidents and encouraging prudent driving. Moreover, Chiappori and Salanié (2013) explored the effectiveness of different incentive mechanisms and confirmed that the implementation of appropriate devices could significantly reduce the risk of opportunistic behaviors.

3.2.5. Behavioral Theory

Unlike classical theories, behavioral theory incorporates cognitive biases and heuristics. Kahneman and Tversky (1979) showed that individuals do not always process probabilities rationally. Barseghyan et al. (2013) explored the behavior of policyholders in various insurance contexts and observed that perception biases significantly influence coverage decisions, confirming behavioral hypotheses. Furthermore, Johnson and Goldstein (2003) examined the impact of default choice mechanisms in insurance-related decisions, highlighting that default options can strongly influence behaviors.

These theories and the associated empirical studies provide rich frameworks for understanding and anticipating decisions in the field of automobile insurance. They illuminate the strategic choices of insurers

and the behaviors of the insured, highlighting the importance of regulating information asymmetries and designing effective incentives.

4. PRESENTATION OF RESULTS

In this section, the issue of analyzing the implementation of the Automobile Guarantee Fund (FOGA) is addressed from the perspective of the survey conducted in the city province of Kinshasa and the analysis of the environment in which it is supposed to be established. To do this, we will first address univariate analyses to describe each variable individually, followed by a bivariate analysis to show the existing relationships between the variables before moving on to multinomial logistic regression analysis, concluding with SWOT and PESTEL analyses.

4.1. Univariate Analysis

The main objective of this method is to summarize and interpret the data of a variable using techniques such as the measurement of relative frequency, the examination of the shape of the distribution, and the conducting of hypothesis tests.

Module 1. Identification of the respondent

Table 4.1. Distribution of respondents according to their sociodemographic characteristics

Variables	Modalities	Ni	%
Sex	Male	28	7,2
	Female	363	92,8
	Total	391	100,0
Age group	Under 20 years old	237	60,6
	20 to 40 years old	128	32,7
	41 to 60 years old	21	5,4
	61 years or older	5	1,3
	Total	391	100,0
Level of education	Without instruction	8	2,0
	Primary	27	6,9
	Secondary	321	82,1
	Academic	35	9,0
	Total	391	100,0
Marital status	Married	139	35,5
	Separated	27	6,9
	In a common-law marriage	162	41,4
	Divorced	13	3,3
	Widower (widow)	1	0,3
	Single	49	12,5
	Total	391	100,0
Profession	Unemployed	18	4,6
	Public sector worker	22	5,6
	Private sector worker	139	35,5
	Freelancer	212	54,2
	Total	391	100,0
Monthly income	Less than $100	107	27,4
	100$ - 200$	124	31,7
	200$ - 300$	79	20,2
	Less than $100	81	20,7
	Total	391	100,0
Category of the respondent	Drivers	348	89,0
	Victim in the hospital	43	11,0
	Total	391	100,0

Source: Author, based on our survey

Interpretation

The table above presents the distribution of respondents according to their sociodemographic characteristics. Indeed, a large majority of the respondents are men (92.8%), with a small proportion of women (7.2%). Regarding age, the group under 20 years old is the most represented (60.6%), while only 1.3% are 61 years old or older. The majority of respondents have a secondary education level (82.1%), and only 2% are uneducated. In terms of marital status, 41.4% are in common-law unions, compared to 0.3% who are widowed. Finally, 54.2% are self-employed, while 4.6% are unemployed.

Commentary

The results show a majority of young, educated men, in common-law relationships, and self-employed.

Module 2. Details about the device

Table 4.2. Distribution of respondents according to the characteristics of the vehicle (car)

Variables	Modalities	ni	%
Being a driver	Yes	319	91,7
	No	29	8,3
	Total	348	100,0
Number of years driving the vehicle	Less than a year	28	8,8
	2 - 5 years	169	53,0
	More than 5 years	122	38,2
	Total	319	100,0
Vehicle category	Car (personal)	23	6,6
	Public transport vehicle	263	76,0
	Truck and construction equipment	15	4,3
	Procession vehicle	3	0,9
	Container truck	42	12,1
	Total	346	100,0
Nature of the vehicle	New	10	2,9
	Second-hand	336	97,1
	Total	346	100,0
Origin of the vehicle	Purchase from abroad after use	139	41,2
	Purchase from a Congolese user	171	50,7
	Others	27	8,0
	Total	337	100,0
Current condition of the vehicle	Still nine	37	10,7
	Passable	203	58,7
	Average	102	29,5
	Defective	4	1,2
	Total	346	100,0
Rhythm of the machine	Regular	264	76,3
	Irregular	82	23,7
	Total	346	100,0
Mode of use of the device	Comercial	320	92,5
	Personal	26	7,5
	Total	346	100,0

Source: Author, based on our survey

Interpretations:

This table presents the distribution of respondents according to the characteristics of the vehicle.

The majority of those surveyed (91.3%) are vehicle operators, with 53% having 2 to 5 years of driving experience, 38.2% more than 5 years, and 8.8% less than one year. Public transport vehicles dominate (76%), compared to 0.9% for convoy vehicles. Approximately 97.1% own used vehicles, 50.7% purchased from Congolese users, and 41.2% from abroad after use. Regarding the condition, 58.7% consider their vehicle acceptable, 76.3% drive regularly, and 92.5% are used for commercial purposes. Only 7.5% of the vehicles are for personal use, and 23.7% experience periods of inactivity.

Module 3. Information on Ownership, Insurance, and Use of the Device

Table 5.1.3. Distribution of respondents according to ownership, insurance, and use of the vehicle

Variables	Modalities	ni	%
Status of ownership of the vehicle	Owner	230	66,5
	No Owner	116	33,5
	Total	346	100,0
Relationship with the owner of the vehicle	Worker	111	95,7
	Child	1	0,9
	Friend	4	3,4
	Total	116	100,0
Type of driver	Principal conductor	305	88,2
	Secondary driver	41	11,8
	Total	346	100,0
Having a driver's license	Yes	335	96,8
	No	11	3,2
	Total	346	100,0
Having a pink card	Yes	318	91,9
	No	28	8,1
	Total	346	100,0
Having vehicle insurance	Yes	154	44,5
	No	192	55,5
	Total	346	100,0
Vehicle inspection	Yes	196	58,3
	No	140	41,7
	Total	336	100,0
Possession of the technical inspection document	Yes	191	97,4
	No	5	2,6
	Total	196	100,0
Existence of multiple drivers of the vehicle	Yes	196	58,3
	No	140	41,7
	Total	336	100,0
Frequency of vehicle transfer	Regulary	133	67,9
	Irregulary	63	32,1
	Total	196	100,0

Source: Author, based on our survey

Interpretations :

The table below informs us that the majority of respondents, 66.5%, are vehicle owners compared to 33.5% who are not. The majority of non-owner drivers (95.7%) are workers, and 88.2% of the respondents are primary drivers. Nearly 96.8% have a driver's license, while 91.9% hold a pink card. Regarding insurance, 55.5% do not have it. For the technical inspection, 58.3% have undergone it, and among them, 97.4% hold the document certifying it. Moreover, 58.3% report having multiple drivers for their vehicle, and 67.9% regularly lend their vehicle.

Module 4. Behaviors and Attitudes in Case of Accident Responsibility

Table 5.1.4. Distribution of respondents according to their behaviors and attitudes in case of accident responsibility

Variables	Modalities	ni	%
Involvement in a traffic accident	Yes	268	68,5
	No	123	31,5
	Total	391	100,0
Frequency of known traffic accidents	1 – 5	312	79,8
	6 – 10	38	9,7
	11 – 15	8	2,0
	More than 15	33	8,4
	Total	391	100,0
Attitude as the person responsible for a traffic accident	Yes	196	56,3
	No	152	43,7
	Total	348	100,0
Attitude as the person responsible for a traffic accident	Panic and confusion	191	54,9
	Immediate assumption of responsibility	122	35,1
	Attempt to conceal responsibility	35	10,1
	Total	348	100,0
Reaction as the person responsible for a traffic accident	Contact the authorities and report the accident	138	39,7
	Try to flee the scene of the accident	27	7,8
	Try to resolve the situation directly with the other parties involved.	183	52,6
	Total	348	100,0
Coverage of material damages and medical expenses of the victims	Coverage of material damages and medical expenses of the victims	224	64,4
	Partial acceptance of responsibilities	104	29,9
	Total refusal to take responsibility for the consequences of the accident	20	5,7
	Total	348	100,0
Negotiation with the accident victim	Yes	302	86,8
	No	46	13,2
	Total	348	100,0
Way to manage emotions in an accident	They remain calm and try to face the situation rationally.	247	71,0
	They feel anxious and have difficulty managing their emotions.	47	13,5
	They feel guilty and it affects their ability to react appropriately.	54	15,5
	Total	348	100,0
Concealment of responsibility for an accident due to fears of the consequences	Yes	303	87,1
	No	45	12,9
	Total	348	100,0
Change in attitude according to the severity of the accident	Yes	307	88,2
	No	41	11,8
	Total	348	100,0

Source: Author, based on our survey

Interpretations

The table above provides information on the distribution of respondents according to their behaviors and attitudes in the event of being responsible for an accident.

The majority of respondents (68.5%) have already been involved in an accident, mainly 1 to 5 times (79.3%). Among them, 56.3% were at fault, but only 54.9% immediately accept their responsibility. In the event of an accident, 52.6% prefer to settle directly with the parties involved, while 64.4% partially accept their responsibilities. Approximately 86.8% opt for an amicable negotiation, but 87.1% hide their responsibility out of fear of the consequences. On an emotional level, 71% feel anxiety, and 88.2% change their attitude according to the severity of the accident.

Module 5. Behaviors and Attitudes as an Accident Victim

Table 5.1.5. Distribution of respondents according to their behaviors and attitudes as accident victims

Variables	Modalities	ni	%
Involvement as a victim in a traffic accident	Yes	264	67,5
	No	127	32,5
	Total	391	100,0
Attitude as a victim of a traffic accident	Calm and thoughtful	207	52,9
	Shocked and disturbed	99	25,3
	Angry and frustrated	85	21,7
	Total	391	100,0
Main recommended action as a victim of a traffic accident	Call for help and report the accident	284	72,6
	Check your health and that of the other people involved.	90	23,0
	Take photos or videos of the accident scene	17	4,3
	Total	391	100,0
Willingness to cooperate as a victim of a traffic accident	Ready to fully collaborate to resolve the situation	305	78,0
	Suspicious and inclined to protect their own interests	64	16,4
	Reluctant to actively participate in post-accident procedures	22	5,6
	Total	391	100,0
Emotion and stress management as a victim	Seek support from loved ones or professionals	291	74,4
	Try to stay calm and rational to make the right decisions.	71	18,2
	Feeling devastated and struggling to cope with emotions	29	7,4
	Total	391	100,0
Initiation of legal proceedings as a victim	Yes	349	89,3
	No	42	10,7
	Total	391	100,0
State of knowledge about one's rights as a victim	I am well-informed and aware of my rights.	284	72,6
	I feel partially informed, but I would like to know more.	83	21,2
	I feel poorly informed and I need help understanding my rights.	24	6,1
	Total	391	100,0
Recommended actions as a victim in response to the consequences of the accident	Follow an appropriate medical and rehabilitative treatment.	287	73,4
	Hire a lawyer to defend my interests	81	20,7
	Seek psychological support to manage emotional trauma	23	5,9
	Total	391	100,0

Source: Author, based on our survey

Interpretations

The table above provides information on the distribution of respondents according to their behaviors and attitudes as victims of an accident.

The majority of respondents (67.5%) have been victims of an accident, with 52% remaining calm and 21% expressing frustration. Approximately 72.6% report the accident and call for help, while 78% cooperate to resolve the situation. To manage emotions and stress, 74.4% seek support, and 66.4% do not pursue legal action. Most (72.6%) feel well-informed about their rights, and 73.4% receive appropriate medical treatment after the accident, compared to only 5.9% who seek psychological support.

Module 6. Socio-economic impact of accidents without insurance or unknown perpetrators on the savings and well-being of the victims and their households

Table 5.1.6. Distribution of respondents according to the socio-economic impact of accidents without insurance or unknown perpetrators on the savings and well-being of the injured and their households

Variables	Modalities	ni	%
Involvement in a traffic accident without insurance	Yes	322	82,4
	No	69	17,6
	Total	391	100,0
Immediate care for the accident victim	The Red Cross	79	20,2
	A benefactor passerby	55	14,1
	The victim himself	124	31,7
	The manager	73	18,7
	The insurer	60	15,3
	Total	391	100,0
Immediate care for the victim of an accident without insurance	The Red Cross	87	22,3
	A benefactor passerby	35	9,0
	The victim himself	154	39,4
	The manager	115	29,4
	Total	391	100,0
Involvement in an accident due to the responsible person's escape	Yes	363	93,6
	No	25	6,4
	Total	388	100,0
Immediate care for the victim of the responsible person's escape	The Red Cross	98	25,1
	A benefactor passerby	79	20,2
	The victim himself	214	54,7
	Total	391	100,0
Level of severity of the accident	Minor injury	94	24,2
	Serious injury	229	59,0
	Scratch	3	0,8
	Disability	9	2,3
	Death	53	13,7
	Total	388	100,0
Level of loss of personal savings during the accident	Significant loss of savings	331	84,7
	Moderate loss of savings	48	12,3
	No economic loss	12	3,1
	Total	391	100,0
Negotiation of penalty payment compensation	Amicable negotiation	292	75,1
	No penalty payment	81	20,8
	Lawsuit for refusal of payment	16	4,1
	Total	389	100,0
Level of impact of the accident on the overall well-being of individuals	Significant impact	297	76,2
	Moderate impact	91	23,3

	No notable impact	2	0,5
	Total	390	100,0
Financial consequences of the accident	Payment of medical and hospitalization expenses	295	75,4
	Repairs or replacement of damaged goods	78	19,9
	Loss of salary or employment	13	3,3
	Debt contracted to cover expenses related to the accident	5	1,3
	Total	391	100,0
Reallocation of household daily expenses to accident-related expenses	Yes	378	96,9
	No	12	3,1
	Total	390	100,0
Level of reduction in saving capacity following the accident	Considerably reduced	307	78,5
	Slightly reduced	81	20,7
	Not at all affected	3	0,8
	Total	391	100,0
Challenges faced after borrowing to overcome the financial consequences of the accident	Difficulty repaying the debt	243	62,1
	Increase in the level of indebtedness	140	35,8
	No notable impact on the financial situation	8	2,0
	Total	391	100,0
Reallocation of other expenses, excluding household expenses, towards accident-related expenses	Yes	367	93,9
	No	24	6,1
	Total	391	100,0
Effect of the accident on the ability to meet the household's essential needs	Difficulty in meeting essential needs	340	87,0
	No notable impact	51	13,0
	Total	391	100,0
Change in lifestyle following the accident	Yes	367	93,9
	No	24	6,1
	Total	391	100,0

Source: Author, based on our survey

Interpretations

The table above provides information on the distribution of respondents according to the socio-economic impact of accidents without insurance or unknown perpetrators on the savings and well-being of the victims and their households.

The majority of those surveyed (82.4%) experienced an accident without insurance, and 93.6% encountered the perpetrator fleeing, forcing 39.4% of the victims to cover their own medical expenses. Nearly 59% report serious injuries, and 84.7% have lost their savings. Accidents lead to major financial impacts: 75.4% pay medical expenses, 96.9% reallocate their spending, and 78.5% see their savings reduced. Approximately 93.1% redirect other expenses towards accident-related costs, and 87% struggle to meet essential needs. Despite everything, 93.9% have not observed a change in their lifestyle.

4.2. Multinomial logistic analysis

Multinomial logistic regression is a statistical method used when the dependent variable is nominal and has more than two categories. This technique allows estimating the probability of belonging to each category of the dependent variable based on explanatory variables.

Multinomial logistic regression produces odds ratios that indicate the increase or decrease in the likelihood of belonging to a category of the dependent variable compared to a reference category, all else being equal. This method is thus useful for identifying factors associated with different outcomes. In the context of this work, such as the determinants of the choice of a mode of transport, the level of education attained, or employment status.

5.3.1. Impact of the Care Provided to Accident Victims on the Perception of Respondents Regarding the Establishment of the Automobile Guarantee Fund in the DRC

Model	Perception on the FOGA	Odds ratio	P>z	IC [95%]		Odds ratio	P>z	IC [95%]	
		Good (Réf)							
	Variables	Neutral				Bad			
M1	Immediate care for the accident victim								
	A benefactor passerby	0,10	0,01	0,02	0,55	0,16	0,03	0,03	0,83
	The victim himself	0,27	0,11	0,05	1,37	0,58	0,52	0,11	2,96
	The manager	0,76	0,74	0,16	3,69	1,63	0,49	0,41	6,45
	The insurer	0,62	0,55	0,13	2,91	3,38	0,10	0,78	14,60
	Immediate care for the victim of the responsible person's escape								
	A benefactor passerby	0,61	0,43	0,18	2,09	1,99	0,28	0,57	6,96
	The victim himself	0,38	0,03	0,16	0,92	0,68	0,48	0,24	1,96
	Immediate care for the victim of an accident without insurance								
	A benefactor passerby	12,52	0,01	2,04	77,02	7,94	0,03	1,19	53,08
	The victim herself	184,88	0,00	36,78	929,44	24,04	0,00	4,68	123,64
	The manager	7,06	0,01	1,59	31,31	200,19	0,00	51,50	778,12
M2	Immediate care for the accident victim								
	A benefactor passerby	0,06	0,048	0,00	0,98	0,09	0,041	0,01	0,91
	The victim himself	0,02	0,008	0,00	0,37	1,08	0,943	0,14	8,59
	The manager	1,17	0,885	0,14	9,54	1,61	0,614	0,25	10,27
	The insurer	0,13	0,145	0,01	2,01	1,72	0,594	0,24	12,46
	Immediate care for the victim of the responsible person's escape								
	A benefactor passerby	0,88	0,871	0,18	4,28	3,68	0,136	0,66	20,34
	The victim himself	0,23	0,031	0,06	0,87	1,41	0,665	0,30	6,74
	Immediate care for the victim of an accident without insurance								
	A benefactor passerby	37,48	0,011	2,29	613,11	1,60	0,771	0,07	37,49
	The victim herself	6079,29	0,000	315,57	####	12,80	0,010	1,83	89,62
	The manager	5,70	0,083	0,80	40,72	324,04	0,000	47,93	2190,90
	Sex								
	Masculine	1,15	0,937	0,04	33,66	0,43	0,522	0,03	5,65
	Profession								
	Public sector worker	0,03	0,015	0,00	0,50	4,23	0,408	0,14	128,95
	Private sector worker	0,43	0,487	0,04	4,67	7,71	0,179	0,39	151,72
	Freelancer	0,14	0,106	0,01	1,51	4,79	0,286	0,27	85,01
	Category of the respondent								
	Victim in the hospital	0,32	0,377	0,02	4,05	9,53	0,101	0,64	141,07
	Emotion and stress management as a victim								
	Try to stay calm and rational to make the right decisions.	1,45	0,594	0,37	5,71	1,14	0,852	0,28	4,74
	Feeling devastated and struggling to cope with emotions	1,68	0,646	0,18	15,18	0,95	0,958	0,14	6,29
	Recommended actions as a victim in response to the consequences of the accident								
	Hire a lawyer to defend my interests	1,39	0,601	0,40	4,81	2,28	0,221	0,61	8,47
	Seeking psychological support to manage trauma.	14,44	0,040	1,13	184,29	0,49	0,536	0,05	4,60
	Involvement in a traffic accident without insurance								

No	0,66	0,583	0,15	2,86	0,13	0,115	0,02	0,67
Involvement in an accident due to the responsible person's escape								
No	0,40	0,536	0,02	7,41	2,37	0,466	0,23	23,91
Level of severity of the accident								
Injury	0,17	0,005	0,05	0,58	2,43	0,227	0,58	10,29
Scratch	61,85	0,999	0,00	,	3,15	0,991	0,00	,
Disability	0,91	0,932	0,10	8,54	4,59	0,980	0,00	,
Death	0,43	0,406	0,06	3,19	10,06	0,057	0,93	108,34
Financial consequences of the accident								
Repairs or replacement of damaged goods	0,34	0,123	0,09	1,34	1,98	0,335	0,49	7,97
Loss of salary or employment	13,27	0,075	0,77	229,13	4,27	0,385	0,16	112,93
Debt contracted to cover expenses related to the accident	0,19	0,572	0,00	63,48	2,23	0,993	0,00	
Reallocation of household daily expenses to accident-related expenses								
No	2,95	0,501	0,13	69,10	0,62	0,763	0,03	14,02
Effect of the accident on the ability to meet the household's essential needs								
None	0,01	0,001	0,00	0,14	0,79	0,827	0,10	6,53
Change in lifestyle following the accident								
No	0,01	0,078	0,00	1,70	1,16	0,918	0,07	20,15

Source: Author, based on our survey

Interpretation

The previous results show the impact of the care provided to road traffic accident victims on their perception of the implementation of the automobile guarantee fund in the DRC.

Two multinomial logistic models were created to see the impact of the care provided to the injured on this perception. First in a general context, in the absence of insurance and in the absence of the person responsible for the accident. Then a second logistic model was conducted where the other control variables were included in the model to observe the behavior of the variables on the care of the injured after control. For the first model, the analysis results reveal that for the immediate care of an accident victim in a general context, accident victims who were cared for by a benevolent bystander have 0.10 times less chance of having a neutral perception and 0.16 times less chance of having a poor perception of the implementation of the automobile guarantee fund in the DRC rather than a good one, with respective p-values (0.01 and 0.003). Regarding the immediate care of the accident victim, victims who took care of themselves have 0.38 times less chance of having a neutral perception rather than a good one on the implementation of the automobile guarantee fund in the DRC, which is statistically significant (p-value=0.003).

Regarding the immediate care of an uninsured accident victim, on one hand, the injured parties who were taken care of by benevolent bystanders, the victims themselves, and the person responsible for the accident have respectively 12.52 times (p-value=0.01), 184.88 times (p-value=0.000), and 7.06 times (p-value=0.01) more chance of having a neutral perception. On the other hand, these injured parties have respectively 7.94 times (p-value=0.03), 24.04 times (p-value=0.000), and 200.19 times (p-value=0.000) more chance of having a negative perception rather than a positive one regarding the implementation of the automobile guarantee fund in the DRC.

For the second model, the analysis results reveal several significant relationships between the independent variables and the perception of the automobile guarantee fund (FOGA) in the DRC.

Regarding the immediate care of an accident victim in general by a benevolent passerby, the injured have 0.06 times less chance of having a neutral rather than good perception of the implementation of the FOGA (p-value=0.048). Moreover, these accident victims are 0.09 times less likely to have a poor perception rather than a good one (p-value=0.041).

For victims who took care of themselves, they are 0.02 times less likely to have a neutral rather than a good perception of the implementation of FOGA, which is statistically significant (p-value=0.008).

Regarding the immediate care of an uninsured accident victim, those who were assisted by a benevolent passerby are 37.48 times more likely to have a neutral rather than a good perception of the implementation of the FOGA (p-value=0.011). However, this relationship is not significant for a bad rather than good perception (p-value=0.771). The victims themselves are 6079.29 times more likely to have a neutral perception (p-value=0.000) and 12.80 times more likely to have a bad perception rather than a good one (p-value=0.010). The injured persons taken care of by the supervisor are 5.70 times more likely to have a neutral perception (p-value=0.083) and 324.04 times more likely to have a bad perception rather than a good one (p-value=0.000).

For the variable "Profession," accident victims who work in the public sector have 0.03 times less chance of having a neutral rather than good perception of the implementation of FOGA, which is statistically significant (p-value=0.015).

Finally, regarding the severity level of the accident, victims who sustained injuries are 0.17 times less likely to have a neutral rather than a good perception of the implementation of the FOGA, which is statistically significant (p-value=0.005).

3.1. SWOT Analysis

The SWOT analysis evaluates an organization's position by identifying strengths, weaknesses, opportunities, and threats. It highlights the strengths to leverage, the weaknesses to address, the growth opportunities (innovation, new markets), and anticipates external threats, providing a comprehensive view to guide strategies.

In the context of this study, the SWOT analysis will allow for the evaluation of accident issues by identifying the strengths, weaknesses, opportunities, and threats of prevention strategies. It will also guide the development of effective measures to reduce risks, anticipate challenges, and improve accident management, thereby enhancing safety in various areas.

FORCES	WEAKNESSES
• Existence of an automobile guarantee fund (FOGA) envisaged to protect victims of accidents caused by unknown or uninsured drivers, which constitutes a social justice initiative. • Willingness to align with international practices to improve security and social justice. • Awareness of the social and economic impact of road accidents, justifying reforms in victim compensation.	• Current legal framework insufficient to effectively cover medical expenses and compensation for victims. • Lack of funding and institutional support for the effective establishment and management of the FOGA. • Long and complex bureaucratic process to obtain the necessary compensation for the victims.
OPPORTUNITIES	**MENACES**
• Possibility to improve road safety and reduce the mortality rate through prevention measures and rapid response to accidents. • Potential participation of international donors to support the establishment of FOGA. • Promotion of social justice and public health, contributing to economic development.	• Difficulty in implementation due to economic challenges and financial instability in the DRC. • Risk of mismanagement or corruption in the management of the guarantee fund, limiting its effectiveness. • Possible lack of awareness among citizens, which could limit the use and funding of the FOGA.

This SWOT analysis highlights the strengths and challenges for the creation of FOGA in the DRC, taking into account the economic, social, and legal implications.

The strengths of the FOGA include the creation of a fund to protect victims of accidents caused by uninsured or unknown drivers, an initiative aligned with international practices aimed at improving social justice and safety. The recognition of the social and economic impact of accidents also justifies its establishment. However, weaknesses remain, including an insufficient legal framework to cover medical expenses and compensation, a lack of funding and institutional support, as well as a complex bureaucratic process. The opportunities for FOGA include improving road safety, the participation of international donors, and promoting social justice and public health. However, threats exist, such as implementation difficulties due to economic and financial challenges, risks of mismanagement or corruption, and a lack of citizen awareness, which could limit the fund's effectiveness and financing.

In conclusion, the SWOT analysis shows that the implementation of FOGA in the DRC presents significant strengths and opportunities to improve the care of road accident victims. However, it is important to take into account the weaknesses and potential threats to ensure the success of this project.

3.1. Analyze PESTEL

The PESTEL analysis examines the macro-environmental factors influencing an organization: Political, Economic, Social, Technological, Environmental, and Legal. It sheds light on the issues of accidents and risk management by analyzing legislative, economic, social, and technological impacts. This framework helps identify opportunities and threats, optimizing business strategies in response to external trends and regulations.

In the context of our work, the PESTEL analysis is particularly relevant for understanding the issues related to accidents and risk management mentioned in the chapter on conceptual generalities.

FACTEURS	ANALYSE
Politics	• Government's intention to create FOGA to improve social justice and protect victims of road accidents. • Need for a solid legal framework to support this fund and regulate its operation effectively.
Economic	• High economic impact of road accidents on victims and their families, often faced with loss of income and high medical costs. • Possibility of attracting international funding to support the FOGA and mitigate accident-related costs.
Social	• Growing need for social justice in the DRC, particularly for vulnerable victims without legal recourse or insurance. • Importance of raising awareness among the population about the existence and usefulness of FOGA to ensure its effectiveness.
Technological	• Insufficiency of technological infrastructure to effectively manage victims' data and compensations. • Opportunity to implement digital tools to simplify the claims process and enhance transparency in fund management.
Environnemental	• Indirect impact of accidents on the environment, particularly pollution and infrastructure degradation. • Need for measures to improve road safety and limit the ecological footprint of accidents, for example with prevention campaigns on responsible driving.
Legal	• Current legal framework insufficient to fully support FOGA and protect accident victims. • Need to strengthen civil liability and car insurance laws to include systematic coverage for accidents involving unknown or uninsured parties.

The PESTEL analysis allows for the evaluation of external factors that can influence the success of the establishment of the Automobile Guarantee Fund (FOGA) in the Democratic Republic of Congo (DRC). Key political factors include the government's willingness to create the FOGA to protect accident victims and improve social justice, as well as the political stability necessary to ensure its success. Economically, road accidents result in significant losses, but the FOGA could mitigate these costs. The DRC could also seek international funding to support the fund. Socially, the FOGA addresses a need for social justice, and a shift in attitudes towards road safety is possible. From a technological standpoint, there is a lack of modern infrastructure necessary to manage compensations, and innovations such as AI and blockchain could improve the efficiency of the FOGA. In environmental terms, accidents affect the environment, and preventive measures are necessary. Finally, a strengthened legal framework is essential to ensure systematic coverage of accidents and the enforcement of laws against fraud.

In summary, the PESTEL analysis highlights the numerous external factors that can influence the success of FOGA. It is therefore necessary to take these factors into account and implement strategies to manage them effectively in order to ensure the sustainability and positive impact of the fund.

5. CONCLUSION

In the Democratic Republic of the Congo, road accidents are a major cause of death and injury, highlighting the need to improve victim protection. In this context, the creation of an Automobile Guarantee Fund (FOGA) presents itself as a potential solution to strengthen drivers' civil liability and ensure adequate support for victims. This study focuses on two main questions: the impact of victim support on their perception of the FOGA in Kinshasa, and the opportunities and challenges associated with its implementation.

To answer these questions, two objectives have been formulated. The first aims to evaluate how the immediate care of victims, whether they are covered by insurance or not, influences their perception of FOGA while taking into account socio-economic variables. The second objective is to identify the opportunities and challenges related to the implementation of FOGA in the DRC. These objectives are supported by two hypotheses: the first suggests that the way victims are cared for influences their perception of the FOGA, and the second proposes that the implementation of the FOGA offers opportunities but also presents significant challenges.

The empirical results partially confirm the first hypothesis. Indeed, the victims assisted by benevolent bystanders or by themselves have a more negative perception of the FOGA compared to those assisted by the person responsible for the accident. Statistics show that those who were helped by third parties are 37 times more likely to have a neutral or negative perception of the FOGA. Similarly, those taken care of by the person responsible for the accident are 324 times more likely to perceive the system negatively. This therefore suggests a need to raise awareness among the population to understand the importance of the FOGA, especially since their perceptions of the implementation of the FOGA remain neutral/negative. A good understanding of the initiative would have an impact on their perceptions.

Regarding the second hypothesis, the results indicate that the FOGA could present several opportunities for the DRC. The FOGA could improve road safety, encourage responsible behaviors, and attract donors, while promoting social justice. However, challenges exist, such as mismanagement, corruption, lack of awareness, and economic instability, thus complicating its implementation in the DRC.

Although the FOGA appears to be a relevant solution for improving road accident management in the DRC, its implementation requires overcoming significant obstacles, particularly in terms of management, awareness, and financial stability.

4. Bibliographie

Abbring, J. H., Chiappori, P. A., & Pinquet, J. (2003). Moral *hazard and dynamic insurance data. Journal of the European Economic Association, 1(4), 767-820.* https://doi.org/10.1162/154247603322493223

Agence Française de développement. (2023). *Stratégie République démocratique du Congo 2022-2026.* https://www.afd.fr/fr/ressources/strategie-republique-democratique-du-congo-2022-2026

Akerlof, G. A. (1970). *The market for "lemons": Quality uncertainty and the market mechanism. The Quarterly Journal of Economics, 84(3), 488-500.* https://doi.org/10.2307/1879431

Arrow, K. J. (1963). *Uncertainty and the welfare economics of medical care. The American Economic Review, 53(5), 941-973.*

Barseghyan, L., Molinari, F., O'Donoghue, T., & Teitelbaum, J. C. (2013). *The nature of risk preferences: Evidence from insurance choices. American Economic Review, 103(6), 2499-2529.* https://doi.org/10.1257/aer.103.6.2499

Barseghyan, L., Prince, J., & Teitelbaum, J. C. (2011). *Are risk preferences stable across contexts? Evidence from insurance data. American Economic Review, 101(2), 591-631.* https://doi.org/10.1257/aer.101.2.591

Chiappori, P. A., & Salanié, B. (2000). Testing for asymmetric information in insurance markets. Journal *of Political Economy, 108(1), 56-78.* https://doi.org/10.1086/262113

Cohen, A. (2005). *Asymmetric information and learning: Evidence from the automobile insurance market. Review of Economics and Statistics, 87(2), 197-207.* https://doi.org/10.1162/0034653053970263

Dionne, G., & Gagné, R. (2001). *Deductible contracts against fraudulent claims: Evidence from automobile insurance. Review of Economics and Statistics, 83(2), 290-301.* https://doi.org/10.1162/00346530151143794

Dionne, G., & Harrington, S. E. (2017). Insurance and risk management for emerging markets. Springer.

Finkelstein, A., & Poterba, J. (2006). *Testing for adverse selection in insurance markets. Journal of Risk and Insurance, 73(1), 39-61.* https://doi.org/10.1111/j.1539-6975.2006.00195.x

Holmström, B. (1979). *Moral hazard and observability. The Bell Journal of Economics, 10(1), 74-91.* https://doi.org/10.2307/3003320

Johnson, E. J., & Goldstein, D. (2003). *Do defaults save lives? Science, 302(5649), 1338-1339.* https://doi.org/10.1126/science.1091721

Kahneman, D., & Tversky, A. (1979). *Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263-292.* https://doi.org/10.2307/1914185

Ministère des Transports. (2021). *Rapport annuel sur la sécurité routière en RDC.*

Mutombo, A. (2019). *Impact socio-économique des accidents de la route en RDC. Thèse de doctorat, Université de Kinshasa.*

Organisation mondiale de la santé. (2018). *Plan d'action mondial pour la sécurité routière 2021-2030.*

Programme des Nations Unis pour le Développement. (2016). *Enjeux et defis de la mise en œuvre des objectifs de developpement durable (odd) en republique democratique du congo. Note technique.* https://www.undp.org/sites/g/files/zskgke326/files/migration/cd/PNUD-Note-Enjeux-et-defis-mise-en-oeuvre-des-ODD-en-RDCrev3_clear.pdf

Puelz, R., & Snow, A. (1994). *Evidence on adverse selection: Equilibrium signaling and cross-subsidization in the insurance market. Journal of Political Economy, 102(2), 236-257.* https://doi.org/10.1086/261931

Rothschild, M., & Stiglitz, J. (1976*). Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. The Quarterly Journal of Economics, 90(4), 629-649.* https://doi.org/10.2307/1885326

Sydnor, J. (2010). *(Over)insuring modest risks. American Economic Journal: Applied Economics, 2(4), 177-199.* https://doi.org/10.1257/app.2.4.177

Von Neumann, J., & Morgenstern, O. (1944). *Theory of games and economic behavior. Princeton University Press.*