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CONTRIBUTION TO THE ANALYSIS OF THE INFLUENCE OF BASIC MEDICAL COVERAGE ON ACCESS TO CARE: THE CASE OF THE SOCIAL PROTECTION SYSTEM MODEL IN MOROCCO

CONTRIBUTION À L'ANALYSE DE L'INFLUENCE DE LA COUVERTURE MÉDICALE DE BASE SUR L'ACCÈS AUX SOINS : LE CAS DU MODÈLE DE SYSTÈME DE PROTECTION SOCIALE AU MAROC

Pr. Najia BENSED
National Institute for Social Action, Tangier, Morocco
(bensednajia@gmail.com)

Pr. Khaoula BELHASSAN
National Institute for Social Action, Tangier, Morocco
(khaoula.belhassan@gmail.com)

Abstract:
By reducing the financial risk associated with the onset of illness, health insurance plays a central role for the population. It enables all sick individuals to meet their health expenses and access care. In this way, it helps to improve people's state of health, reduce the financial impact of illness on household budgets, improve the well-being of those insured and, above all, guarantee a system of solidarity between healthy and sick people, thereby promoting social cohesion. The aim of this article is therefore to examine the impact of medical coverage on access to healthcare. The method used to identify the impact of medical coverage on access to care is modeling via logistic regression. To do this, we used a database from the 2019 Household Panel Survey conducted by the Observatoire National de Développement Humain (ONDH), processed using STATA software. The empirical results suggest a positive impact of all selected variables on access to healthcare. The results of our study show that the main explanatory variables impacting access to healthcare are medical coverage, standard of living, level of education and employment. This is followed by other variables with a lesser impact.

Keywords : Basic medical coverage, compulsory health insurance, medical assistance scheme, modele de Grosman, regression linéaire multiple.

Résumé :
En réduisant le risque financier lié à l'apparition d'une maladie, l'assurance maladie joue un rôle central pour la population. Elle permet à toutes les personnes malades de faire face à leurs dépenses de santé et d'accéder aux soins. Elle contribue ainsi à améliorer l'état de santé des individus, à réduire l'impact financier de la maladie sur le budget des ménages, à améliorer le bien-être des assurés et, surtout, à garantir un système de solidarité entre les personnes en bonne santé et les malades, favorisant ainsi la cohésion sociale. L'objectif de cet article est donc

d'examiner l'impact de la couverture médicale sur l'accès aux soins. La méthode utilisée pour identifier cet impact repose sur la modélisation par régression logistique. Pour ce faire, nous avons utilisé une base de données issue de l'Enquête par panel sur les ménages de 2019 menée par l'Observatoire national de développement humain (ONDH), traitée à l'aide du logiciel STATA. Les résultats empiriques suggèrent un impact positif de toutes les variables sélectionnées sur l'accès aux soins de santé. Les résultats de notre étude montrent que les principales variables explicatives ayant un impact sur l'accès aux soins de santé sont la couverture médicale, le niveau de vie, le niveau d'éducation et l'emploi. Viennent ensuite d'autres variables ayant un impact moindre.

Mots-clés: Couverture médicale de base, assurance maladie obligatoire, régime d'aide médicale, modèle de Grosman, régression linéaire multiple.

1. Introduction

When it comes to improving living standards, the social protection sector remains a key player. It comprises all the collective protection mechanisms that enable individuals or households to cope financially with the consequences of social risks such as old age, illness, disability, unemployment, family burdens, and so on. Social protection therefore has both material objectives, which translate into enabling individuals to survive and cope with life's hazards, and social objectives, which aim to reduce inequalities in the face of life's risks and ensure individuals a minimum income enabling them to better integrate into society.

Despite various efforts to improve the health situation in the developing world, many emerging economies are still a long way from achieving "universal health coverage". Healthcare provision continues to be a major challenge in many low- and middle-income countries. It is clear that poor health considerably hampers a country's social and economic development: in addition to directly affecting people's well-being. An efficient and equitable healthcare system is an important instrument for breaking the vicious circle of poverty and poor health.

Since the early 1960s, Morocco has been working to achieve moderate, sustained and sustainable economic growth in order to improve its population's standard of living. To this end, it has implemented a number of national programs and strategies aimed at combating all forms of precariousness and poverty, contributing to the development of the rural world, the generalization of schooling and the extension of universal medical coverage.

However, the future of basic health coverage faces a number of challenges. Consequently, Morocco aims to improve access to quality health services for the entire population through the development of this coverage. This is reflected in the existing compulsory health insurance schemes that form part of the Kingdom's poverty reduction policy. So, to what extent does basic medical coverage promote access to healthcare and thus reduce the risk of impoverishment?

In this article, we first define the different theoretical approaches linking social justice and access to healthcare, as well as human capital and health insurance. We then address our problem through an empirical study based on logistic regression, in order to define the impact of medical coverage on access to healthcare.

2. LITERATURE REVIEW

2.1. Theoretical literature review

2.1.1. Social justice and access to healthcare

Equality is paramount in healthcare. One cannot talk about healthcare without referring to equality, which is the core of social justice. No country can remain indifferent to inequalities in healthcare, and seeks to remedy inequalities by acting on their causes and effects. Achieving complete equality in health care is impossible, given that health varies from one person to another. However, equality also means having equal opportunities for social participation, regardless of an individual's state of health. To this end, access to healthcare is essential, and relies on equal access to replacement income in the event of illness, or to health insurance. On the other hand, equity is essential to the distribution of wealth, the analysis of trade and the intervention of the state, and more specifically in social systems.

In their work on economic and social ethics, Arnsperger and Van Parijs (2003) confirm four approaches that define the principles characteristic of fair institutions. These four approaches are libertarianism, utilitarianism, Marxism and liberal egalitarianism. Each of these approaches defines a form suited to health, while also defining the founding principles on which it is based.

Each country has its own healthcare system, reflecting its specific social contract. The way in which each country's healthcare system finances and provides access to care reflects the importance of the principle of equity in that system, compared with efficiency and freedom, which are the other components of the social contract.

However, all healthcare systems have egalitarian objectives, but the difference lies in the way they are implemented. Some systems opt for redistribution through social insurance, and thus follow a Bismarckian egalitarianism. Other systems, on the other hand, opt for fiscal redistribution, and thus follow a Beveridgian egalitarianism.

A number of economic studies on the measurement of equity in healthcare systems have focused on this dissimilarity, using the two concepts of vertical and horizontal equity defined by Aristotle for financing systems and healthcare distribution systems respectively (Lise Rochaix, Sandy Tubeuf, 2009).

However, egalitarian theories, "*propose that people benefit from an equal distribution of certain goods such as health care, but all important egalitarian theories of justice are cautiously formulated to avoid making the equal sharing of all possible social benefits a requirement of justice*" (Beauchamp TL, Childress JF, 1994). While utilitarian theories are based on consequences (the evaluation of states of affairs or actions in terms of their consequences), they focus on the space of "utilities" (satisfaction, satisfaction of desire, preference) (Gold MR , al, 1996). However, community-based approaches focus on community values (Emanuel EJ, 1991), rather than on health itself.

Liberal theories of justice are reluctant to focus on health because, as John Rawls (1971) claims in his book "*A theory of justice*", natural goods such as health are not included as social values or primary social goods. "*Freedom and opportunity, income and wealth and the foundations of self-respect" which are "things that every rational man is presumed to want*" (Rawls J. A, 1971).

He adds that "*health and vigor, intelligence and imagination, are natural goods; though their possession is influenced by basic structure, they are not so directly under its control*". Thus, according to Rawls (1971), health is not one of the primary social goods that should be "*distributed equally, unless an unequal distribution of any or all of these values is to the advantage of all*" (Rawls J. A, 1971) . Although he discusses basic health care later in his book, Law of Peoples, Rawls does not include health in the list of primary social goods subject to the principles of distribution.

Among others, Norman Daniels (1985) states that "*health is an inappropriate object, but health care, action which promotes health, is appropriate*" (Daniels N, 1985). This line of reasoning illustrates the strong bias against health as a focal variable in current ethical theory.

2.1.2. Health insurance improves human capital

While many articles and books have addressed the subject of human capital dimensions in education and training, health as human capital has been less discussed. This is partly because the contribution on health in this volume is not particularly insightful, but also because the concept of health as human capital is based on somewhat different notions than those of education or training. In fact, most economic literature on health deals with ways of improving the delivery of healthcare services.

The emerging field of health as human capital draws on three interrelated developments to create a dynamic and evolving field. These developments are :

- The analysis of optimal investments in health by individuals, pharmaceutical companies and, to a lesser extent, governments, which follows Grossman's (1972) analysis, as well as discussions of self-protection in the insurance literature (Ehrlich and Becker, 1972), and the literature on pharmaceutical investments.
- The value of life literature that analyzes how much people are willing to pay to improve their survival probabilities at different ages and that, according to, Usher (1973);

The health of each person or individual is a capital asset. It contributes to productivity through the provision of good health services. And the efficiency factor that boosts productivity is health spending, which takes place through health insurance (Grossman, 1972). In social protection, spending on health and old age is a major component. The aim of this expenditure is not, in principle, to be "productive", although it does have a part to play in improving worker performance. This explains why employers contribute to the financing of social protection spending, and particularly health care (Tabellini, 2000). Health spending contributes to the productivity generated by the working population, and its contribution is assessed over the long term (Harris, 2002).

Many economic researchers have examined the relationship between health and productivity, as well as the link between health spending by social security systems and productivity. The results of this research point to a causality between income and health (Piateki and Ulmann, 1996). This causality or correlation can be seen in developing countries. This enables us to determine the effect of health on productivity, to identify the costs of illness and, above all, to measure the time lost from work, which in turn translates into a fall or even a loss of productivity (Majnoni d'Intignano and Ulmann, 2001).

In his study, Ulmann (1999) uses health as a quality factor of human capital and therefore as an element of the overall production function: a healthy worker is present in the workplace and is more productive. There is no loss of productivity.

Van Zon and Muysken (1997) agree, adding that good health is a prerequisite for health-productivity growth.

2.2. Empirical literature review

positive impact on access to care, use of services, affordability of care and security of financial resources for the population, particularly for low-income households. Thus, there is generally a positive relationship between access to insurance and healthcare consumption, as it increases the amount of illness and healthcare consumed.

In 1963, Arrow found that partial or total care enabled insured people to have access to a wide range of healthcare treatments, including the more expensive ones (Arrow, 1963).

According to Faulkner (1960), cost sharing, also known as co-insurance or deductible, is the portion of the cost borne by the insured at the end of each claim. The application of this principle requires that compensation for loss of earnings cover most, but not all, of the claim.

Between 1974 and 1982 in the United States, the first randomized experiment examining the effects of health insurance on the health of beneficiaries was conducted by Joseph P (1963), under the name RAND Health Insurance Experiment. This experiment was based on a sample of 4,000 people in 2,000 households. These families were randomly assigned to a free health plan, while others were assigned to one of the plans requiring variable co-payments (10%, 20%, 40%). This study revealed that those assigned to a cost-sharing plan sought less health care than those with full coverage.

Van Doorslaer (2002) has shown that there is a positive relationship between health status and productivity at the individual level. According to Pourezza (2007), having insurance means having more financing options, which has an impact on the insured's choice of healthcare provider. Thus, there should be a positive correlation between the amount of healthcare expenditure and the level of coverage.

According to Pauly J.A (1968), the introduction of an insurance system encourages policyholders to consume more. Moreover, he showed that a high reimbursement rate can encourage people to consume more healthcare. To limit over-consumption, Shavell

(1979) advocated incomplete coverage. In other words, part of the cost of care should be borne by the insured, in order to moderate their healthcare expenditure.

Caussat and Glaude, in 1993, using a simultaneous equation model, concluded that medical coverage had a positive impact on the probability of healthcare use. However, in 1976, Rothschild and Stiglitz asserted that the riskiest people are the most willing to buy health insurance because they know that the amount they will spend on healthcare will be greater than the premium they will pay (Rothschild, M. & Stiglitz, J.E, 1976). This phenomenon is called adverse selection.

Ekman, in 2007, using a two-part model, demonstrated that health insurance could improve access to healthcare and reduce out-of-pocket expenditure. In effect, the individual's behavior is seen as a dual decision process in the demand for healthcare. The first decision is whether to visit a healthcare provider, and the second is the cost of the care to be obtained. (Ekman, 2007)

In 2008, Deborah Stone, demonstrated that medical coverage reduces the cost of medical care, encouraging patients to access more healthcare without paying the full cost. (Stone, 2008)

The majority of empirical studies have found a significant negative relationship between health insurance and healthcare expenditure; (Jowett M., Deolalikar A & Martinsson P., 2004) and (Berkman, L.F., T. Glass, I. Brissette & T. E. Seeman, 2000). (Anderson, G, & Peter H., 2000) (1978) and (Grossman M., 1972) carried out the first work on the effects of health insurance in the 1900s. They showed that health insurance had a considerable effect on health utilization and expenditure.

In 2004, Jowett al showed that people covered by health insurance were more likely to use healthcare services. In addition, they found that the absence of health coverage had a significant impact on the decision to use healthcare. However, in 2001, Berman (2001) demonstrated the same result using Egyptian data.

Also, Zweifel et al (2000) and Manning and Newhouse (1987) have shown that health insurance can increase individual demand for medical care. In addition, Caussat Laurent, Raynaud Denis (2004) have shown that having health insurance guarantees a stable standard of living for the insured. Gardiol et al (2003) analyzed the effect of supplementary health insurance on healthcare utilization. They found that having

supplementary health cover makes access to healthcare easier, and this is justified by the high rate of reimbursement for the insured.

In 2013, Dourgnon et al (2013) studied the impact of financial barriers to healthcare access on health status, based on an indicator of healthcare renunciation four years later, using data from the French Health and Social Protection Survey. This analysis demonstrates the important role played by access to supplementary cover, as well as current, past and anticipated social situation. They suggest that difficulties in accessing care contribute to health inequalities. However, in Canada, in 2010, Allin et al (2010) conducted a study examining the link between self-reported renunciation and actual healthcare consumption.

In 2019, Jouilil and Lechheb (2019), conducted a study estimating the impact of basic medical coverage in Morocco on the use of preventive care. Using multiple logistic regression, they demonstrated that insured people make greater use of preventive care than uninsured people, particularly those subject to vulnerable AMO and RAMED schemes. They were more willing to undergo a preventive consultation than others. Their study showed that, in addition to the influences of basic medical coverage, socio-economic and socio-demographic factors also play a key role, as does the fact of having supplementary health insurance. The study showed a significant difference between people from literate female-headed families and those from large, rural families headed by illiterate women. These results confirm the social inequalities in healthcare use. In fact, having supplementary insurance increases the probability of using preventive care by 42%.

2.3. Organization of Moroccan healthcare provision

Morocco's healthcare system leaves much to be desired, not to say failing. This is evident in all its facets: lack of human resources, inadequate logistics and ageing hospital infrastructures, not to mention the fact that medical coverage is not generalized throughout the population.

These shortcomings of Morocco's healthcare system are just some of the many that the WHO highlighted in its April 2018 report: an alarmist report that calls out to those in charge because, according to the WHO, it is heading for chaos.

In the WHO constitution, health is designated as "a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity". The WHO thus

considers health to be "one of the fundamental rights of every human being, irrespective of race, religion, political opinion, economic or social condition". This WHO objective for health emphasizes the fact that it is an obligation to satisfy all the basic needs of the citizen. And it is within this framework that Morocco is implementing all the necessary reforms to improve its healthcare system.

In its analysis, Morocco's health policy shows significant progress in extending medical coverage, with a drop in infant mortality. However, the analysis also shows that there is still disparity between regions, and a lack of quality of care. Similarly, there has been a marked decline in fertility. This heralds a demographic and health transition.

Infant and child mortality rates (IMR) fell sharply between 1990 and 2018. The IMR fell from 93.3% to 19.2% and the YMR from 132.5% to 22.4%. In the same trend, the maternal mortality rate fell from 1,200 to 480 deaths between 2000 and 2017. Fertility rates have also followed the same trend. The crude birth rate (TBN) and fertility rate (TF) fell from 37.9% and 5.69% respectively in 1980, to 19.39% and 2.45% in 2017. All these decreases represent an essential point in the progression of life expectancy in Morocco.

Life expectancy at birth in Morocco rose from 57.56 years in 1980 to 76.21 years in 2017. However, it remains low compared to Tunisia (76.31 years in 2017) and even lower compared to France (82.52 years in 2017).

Nevertheless, these results indicate a clear improvement in the health of the Moroccan population since 1980. This can be explained by better nutrition and easier access to healthcare, as well as a decline in high-risk pregnancies.

The evolution thus described is a transitional evolution in mortality and morbidity known as the "Epidemiological Transition" (A.R. Omran, 1971) and the "Health Transition" (Caldwell, 1990). All countries are experiencing this evolution, what's different is its duration and structure.

According to the 2018 National Population and Family Health Survey (ENPSF) report, the health transition in Morocco has seen a marked decline in mortality from non-communicable diseases. This has led to a change in the epidemiological structure.

Demographic and health transitions in Morocco have led to the implementation of health reform. This has enabled the authorities to legitimize their policies, with a view to consolidating the gains made in the fight against and prevention of disease, and in coping with chronic illnesses. This has led to a reform of curative care and a reform of hospitals.

Despite all these efforts, the EESC report indicates that Morocco's healthcare system is still in its emergence phase, due to a number of deficits in healthcare provision and human resources in the health sector. The shortfall is particularly acute in rural areas.

To address these deficits, a health plan was launched in 2018. This is the "Santé 2025" plan, which aims to improve basic universal coverage and reduce inequalities in access to healthcare.

This plan consists of four points:

- Organizing care provision
- Developing the healthcare network
- Strengthening national health by combating disease
- Developing health sector governance

As part of the development of its healthcare system, Morocco has signed a strategy agreement with France. The aim of this cooperation is to improve access to affordable healthcare services. The ultimate aim is to move towards universal health coverage. It also aims to reduce morbidity and mortality rates, while strengthening essential public health functions.

This cooperation also aims to support the Kingdom in its policy of advanced regionalization and to strengthen governance in the healthcare sector.

Having defined Morocco's economic and social context, the share of healthcare expenditure in total household spending and the organization of healthcare provision, it is now necessary to define the empirical approach (logistic regression) adopted in our research. To do this, we will explain the econometric model of logistic regression and then begin our descriptive statistical study of our selected variables from the ONDH EPM.

3. Empirical method

3.1. Conceptual framework and research hypotheses

Our approach is based on the independence that exists between reality and our perception of it. Our aim is to apprehend this link objectively, through an understanding of the causal links between the determinants of our research model. In this sense, our study aims to show the nature of the relationship between "access to care" and "medical coverage", particularly in the Moroccan context. More specifically, the aim is to analyze the effect that medical coverage can have on access to healthcare.

We have focused on the health demand model established by Grossman (1972). We drew inspiration from the various empirical studies mentioned above, while using Crossman's model as a basis for determining the variables to be used. Our model includes an explained variable, i.e. access to care, and several explanatory variables, such as medical coverage, income, education, age, marital status, etc.

In this sense, and in order to respond to the problem posed, we start from the following main hypothesis:

- H: Basic medical coverage has a positive impact on access to healthcare.

However, this conceptual hypothesis implies secondary hypotheses:

- H1: Having medical coverage positively influences access to healthcare.
- H2: health status has a positive impact on healthcare use.
- H3: the individual's socio-economic characteristics have a positive impact on access to healthcare.
- H4: individual income has a positive impact on access to healthcare.
- H5 : Level of education has a positive impact on access to healthcare.
- H6: Women use healthcare more than men.
- H7: Access to healthcare is positively impacted by place of residence.
- H8: Age influences healthcare use.
- H9: Marital status has a positive impact on access to healthcare.
- H10: Access to healthcare is positively impacted by employment.

3.1.1. Methodological approach and model specification

However, the method used to identify the impact of medical coverage on access to care is modeling via logistic regression. To do this, we used a database from the 2019 household panel survey carried out by the Observatoire National de Développement Humain (ONDH). The choice of this database is dictated by the complexity of conducting a survey via a questionnaire.

The empirical analysis is carried out using STATA software, in order to empirically validate our research hypotheses. Before proceeding with our model estimation, we carried out model performance tests and then interpreted the results obtained.

Let's consider a sample of 4463 independent observations; with Y an explained variable (variable to be predicted) and X= X1, X2, X3, ... , Xj explanatory variables (predictor

variables). Knowing that our explained variable Y is a dichotomous dependent variable having the value 1 to present access to care and the value 0 to present non-access to care. However, as mentioned above, X presents values of different predictive attributes.

Below is the table showing the various explanatory variables:

Table 1: Definition of Variables

Variables	Definition
Benef_consl_prev	Healthcare access: Has the individual had a preventive medical checkup in the past 12 months?
Couvert_med	Health Insurance Coverage (AMO, RAMED, and Uninsured)
Quint_damp	Standard of Living
Type_maladie	Health Status
Diplôme	Level of Education
Sexe	Genre
Age	Age
Statut_matrimonial	Marital Status
Milieu	Neighborhood
Emploi	Jobs

Source: Compiled by the author based on data from the 2019 EPM

Therefore, to predict the occurrence of access to health care, we will use the following Logit model:

$$Ln\left(\frac{P(Yi=\frac{1}{X})}{P(Yi=\frac{0}{X})}\right) = \beta 0 + \beta 1Xi1 + \beta 2Xi2 + \beta 3\ Xi3 + \cdots + \beta pXip \quad (1)$$

Otherwise,

$$Ln\frac{\pi(x)}{1-\pi(x)} = \beta 0 + \beta 1Xi1 + \beta 2Xi2 + \beta 3\ Xi3 + \cdots + \beta pXip \quad (2)$$

With :

$$Yi = \begin{cases} 1 & if\ individual\ i\ has\ consulted \\ 0 & if\ not \end{cases}$$

So our logistic regression equation is as follows:

$$Ln\left(\frac{P(V5_{1A}=1)}{P(V5_{1A}=0)}\right) = \beta 0 + \beta 1\, V4_1 + \beta 2\, V5_2 + \beta 3\, quint_{damp} + \beta 4\, V2_{10} + \beta 5\, V1_2 + \beta 6\, V1_{12} + \beta 7\, V1_{13} + \beta 8\, V0C_9 + \beta 9\, V3_1 + \beta 10\, V3_6 \quad (3)$$

Otherwise,

$$P[Y=1] = \frac{e^{(\beta 0 + \beta 1\, V4_1 + \beta 2\, V5_2 + \beta 3\, quint_{damp} + \beta 4\, V2_{10} + \beta 5\, V1_2 + \beta 6\, V1_{12} + \beta 7\, V1_{13} + \beta 8\, V0C_9 + \beta 9\, V3_1 + \beta 10\, V3_6)}}{1 + e^{(\beta 0 + \beta 1\, V4_1 + \beta 2\, V5_2 + \beta 3\, quint_{damp} + \beta 4\, V2_{10} + \beta 5\, V1_2 + \beta 6\, V1_{12} + \beta 7\, V1_{13} + \beta 8\, V0C_9 + \beta 9\, V3_1 + \beta 10\, V3_6)}} \quad (4)$$

Where:

Y: access to care to be predicted (dependent variable).

β0, β1, ..., β10: estimation parameters

V41, V52, ..., V36 : predictor variables used (X1, X2, ..., X10)

However, the coefficients are estimated using the Maximum Likelihood (ML) method.

3.1.2. Model performance

Model performance is determined by the Hosmer-Lemeshow goodness-of-fit test. The Hosmer-Lemeshow goodness-of-fit test determines the model's significance.

However, the hypotheses tested are as follows:

H0: the model is well calibrated (theoretical and observed probabilities are consistent)

H1: the model is not calibrated (theoretical and observed probabilities are different).

After examining the Hosmer-Lemeshow goodness-of-fit test, we can say that the predicted and observed values are consistent at a 5% confidence risk. We therefore reject hypothesis H1 and accept hypothesis H0, as shown in the table below.

Table 2: Hosmer-Lemshow goodness-of-fit test

Nombre d'observations	4463
Hosmer-Lemshow chi2	9,06
Prob>chi2	0,3369

Source: Compiled by the author from the EPM 2019 database

We can conclude from the Hosmer-Lemshow test that the model is correct, valid and compatible with the data.

The classification table and sensitivity tests enable us to generate predicted probabilities for group membership. From these predicted probabilities, we can generate a prediction as to who would fit into group 0 with no access to care and group 1 with acces to care.

The following table shows that we have 1529 people had access to care, versus 2934 people did not access to care. However, among the 1529 people, 108 were correctly predicted by the model. The accuracy rate for these people is 7.06%. This rate is very low.

On the other hand, 2861 people were predicted by the model not to intend to consult, with an accuracy rate of 97.51%.

The classification table shows that the overall accuracy rate of the prediction is 66.52%.

Table 3: Classification table and sensitivity tests

Logistic model for cons_prev			
Classified/true	**True**		**Total**
Classified	D	~D	
+	108	73	181
-	1421	2861	4282
Total	1529	2934	4463
Classified + if predicted Pr(D)>=.5 True D defined as benef_consl_prev !=0			
Sensitivity		Pr (+/D)	7,06%
Specificity		Pr (-/~D)	97,51%
Positive predictive value		Pr (D/+)	59,67%
Negative predictive value		Pr (~D/-)	66,81%
False + rate for true ~ D		Pr (+/~D)	2,49%
False - rate for true D		Pr (-/D)	92,94%
False + rate for classified +		Pr (~ D/+)	40,33%
False – rate for classified -		Pr (D/-)	33,19%
Correctly classified			66,52%

Source: Compiled by the author from the EPM 2019 database

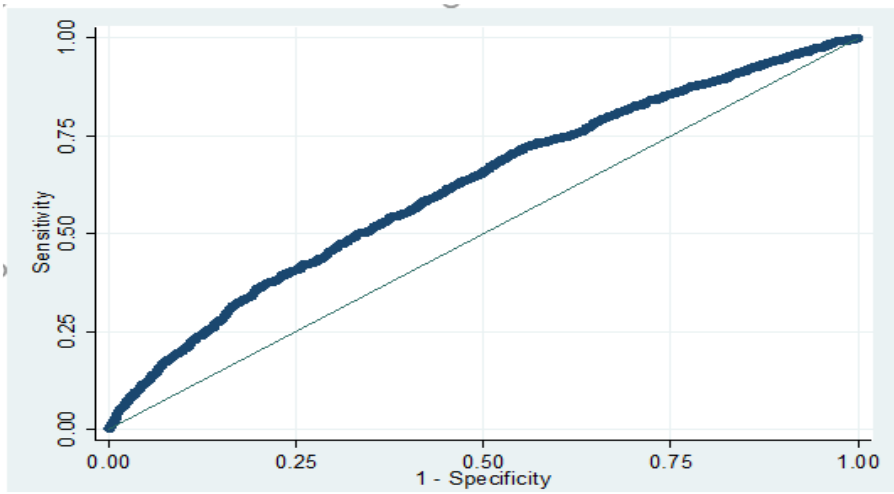
The AUC criterion measures the model's performance and also demonstrates its ability to classify observations correctly. To this end, the table below shows that the AUC criterion is greater than 0.5, so discrimination is acceptable.

Table 4: AUC test

Nombre d'observations	4463
AREA Under ROC Curve	0,6171

Source: Compiled by the author from the EPM 2019 database

Figure 1: ROC curve



Source: Compiled by the author from the EPM 2019 database

3.1.3. Model estimation

Using logistic regression and the Maximum Likelihood method, we estimated the parameters of the model as follows:

Table 5: Estimation of the logistic regression model

Variables	Modalités	Coefficients	ODDS RATIO
Couverture médicale	Oui , AMO	REF	REF
	Oui, RAMED	0.1169007*** (0.0037343)	1.124008*** (0.0041974)
	Non	-0.4128738*** (0.0036531)	0.6617458*** (0.0024174)
Quint_Damp	1	REF	REF
	2	0.0123823* (0.0069433)	1.012459* (0.0070298)
	3	0.1693082*** (0.0067129)	1.184485*** (0.0079514)
	4	0.2146503*** (0.0065739)	1.239428*** (0.0081479)
	5	0.865418*** (0.0066181)	2.376103*** (0.0157253)
Type_maladie	Maladie passagère	REF	REF
	Maladie chronique	-0.2867262*** (0.0032583)	0.7507172*** (0.0024461)
	Blessure, brûlure, empoisonnement	0.3013834*** (0.0086207)	1.351727*** (0.116528)
	Accident	-0.3396424*** (0.0155354)	0.7120249*** (0.0110616)
Diplôme	Aucun	REF	REF
	Diplôme moyen (primaire, collège, lycée)	0.171143*** (0.0031075)	1.18666*** (0.0036875)
	Diplômes délivrés par les facultés	0.0960723*** (0.0061427)	1.100839*** (0.0067622)
	Diplômes grandes écoles instituts	0.8041254*** (0.0096398)	2.234741*** (0.0215424)
	Diplômes techniciens, techniciens sup et cadres	0.4406685*** (0.010975)	1.553746*** (0.0170523)
	Diplôme de qualification professionnelle	-0.1453023*** (0.264664)	0.8647608*** (0.228871)
	Certificats en spécialisation professionnelle	-1.642453*** (0.0381604)	0.1935048*** (0.0073842)
	Certificats en initiation professionnelle	0	1
Sexe	Masculin	REF	REF
	Féminin	-0.0716767*** (0.0031477)	0.9308318*** (0.00293)
Age	Age	-0.0027996*** (0.001147)	0.9972043*** (0.0001144)
Statut matrimonial	Célibataire	REF	REF
	Marié (e)	0.2288726*** (0.0044696)	1.257182*** (0.056191)
	Veuf (ve)	0.0195728** (0.083441)	1.019766** (0.008509)
	Divorcé (e)	0.6641715*** (0.083912)	1.94288*** (0.016303)
	Autre (mère celibataire,…)	-1.779577*** (0.1196831)	0.1687094*** (0.0201917)
Milieu	Urbain	REF	REF
	Rural	-0.0264611*** (0.0041684)	0.9738859*** (0.0040596)
Emploi	Pas d'emploi	REF	REF
	Oui, actuellement travail permanent	0.0497591*** (0.0035497)	1.051018*** (0.0037308)
	Oui, travail saisonnier	-0.1876053*** (0.0174614)	0.8289418*** (0.0144744)
	Oui, travail occasionnel	-0.2949198*** (0.011589)	0.7445913*** (0.0086291)
Cons	Cons	-0.9321734*** (0.0074971)	0.3936971*** (0.0029516)
Nombre d'observation		4463	
LR chi2		140186.89	
Prob > chi2		0.0000	
R2-ajusté		0.0452	

Source : Compiled by the author from the EPM 2019 database

Notes: Brackets indicate error standards

*, **, *** indicate that the coefficient is significant at the 10%, 5% and 1%.

3. Results and discussion

Discussion of the results is based on explaining the results obtained for each explanatory variable. In this step, we will discuss the impact of each explanatory variable on access to healthcare. We will also explain the role of medical coverage in access to care and in ensuring the well-being of individuals.

The study highlights the importance of medical coverage in facilitating access to healthcare for individuals. Individuals without medical coverage are less likely to access healthcare than those with medical coverage (AMO or RAMED). On the other hand, individuals with RAMED medical assistance can access healthcare. This variable therefore has a positive impact on access to healthcare.

Standard of living has a positive impact on access to healthcare. Individuals from the wealthiest class are more likely to access healthcare than those from the poorest class. Health status has a positive influence on access to healthcare.

Level of education positively influences access to healthcare. People with a university degree have 2 times more access than those with no education at all. In other words, as the level of education increases, so does access to healthcare.

Each socio-demographic variable has an impact on healthcare utilization. First of all, gender has a negative effect on access to healthcare. Women are less likely to access healthcare than men.

Similarly, age has a negative impact on access to healthcare, according to the results obtained in our study. In contrast, marital status has a positive effect on access to healthcare. Residence environment has a negative effect on access to healthcare. The results of the study show that people living in rural areas have less access than those living in urban areas.

Employability is a decisive variable in the use of healthcare, according to the results of our study. Having a permanent, stable job increases the probability of accessing healthcare by 1.3 times more than people who are unemployed.

4. Conclusion

Based on our findings, we can draw two main conclusions from which we can outline courses of action for public authorities. There is considerable inequality of access to healthcare for people of different standards of living. Under these conditions, a lever for

action to correct the situation would be to try to reduce the financial handicap faced by households.

It is true that, thanks to the extension of Basic Medical Coverage, the population has been able to access certain types of care that were previously inaccessible due to their exorbitant cost, particularly for the poor. The development of demand for healthcare and the promotion of a culture of health through awareness-raising campaigns constitute a major challenge for public action.

Access to healthcare is an essential factor and outcome of human development. At the microeconomic level, better health can help individuals and households to lift themselves out of poverty and increase their productive capacity. We mustn't neglect the standard of living, level of education and employment, which are decisive variables in access to healthcare.

Before concluding, I would like to point out that there have been several developments relating to the theme of our thesis. I would also like to highlight the topicality of certain aspects of our research.

Despite all the efforts Morocco has made to improve access to healthcare and introduce universal medical coverage, the country has faced a major crisis during the COVID pandemic since 2020. As a result, its healthcare system was weakened.

As a result, and following the directives of His Majesty King Mohammed VI, Morocco has a new vision for the generalization of social coverage. Social protection reform is a far-reaching societal reform that calls for profound changes in the management and governance of the Moroccan social protection system.

This reform consists of the generalization of compulsory health insurance (AMO), starting in January 2021; the introduction of family allowances for all households; the introduction of a pension scheme for the uncovered population; and the implementation of a job loss indemnity for the working population. It should also be pointed out that the project to generalize medical coverage cannot succeed without overhauling the Moroccan healthcare system. This reform will be the subject of a number of research questions and issues to be addressed in the future.

References

Allin, S., Grignon, M., & Le Grand, J. (2010), *Subjective Unmet Need and Utilization of Health Care Services in Canada: What are the Equity Implications?*, Social Science & Medicine, 70(3), 465-472.

Annear, P.L., Wilkinson, D., Men, C. R., & Van Pelt, M. (2006). *Increasing access to health services for the poor: Health financing and equity in Cambodia*. (Working Paper).

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

Barbara Wolfe, (2011-12), « *Poverty and poor health: Can health care reform narrow the rich-poor gap?* », Institut de Recherche sur la Pauvreté, Automne / Hiver (2011-2012).

Beauchamp, TL, & Childress, J.F. (1994), *Principles of biomedical ethics*. (4th ed). Oxford University Press.

Caussat, L. & Glaude, M. (1993). *Dépenses médicales et couverture sociales. Economie et Statistiques*, (265), 31-44.

Caussat, L., & Raynaud, D. (2004). *La régulation de la demande de soins : le rôle de l'assurance maladie dans la formation de la consommation de biens et services de santé.* Revue d'économie financière, (76), 129-151.

Arnsperger, C., & Van Parijs, P. (2003). *Éthique économique et sociale*. La découverte.

Daniels, N. (1985). *Just health care*. Cambridge University Press.

Dourgnon, P., Jusot, F., & Fantin, R. (2012). *Payer nuit gravement à la santé : une étude de l'impact du renoncement financier aux soins sur l'état de santé*. Economie Publique, n° (28-29), 123-147.

Emanuel, E.J. (1991). *The ends of human life: Medical ethics in a liberal polity*. Harvard University Press.

Ekman, B. (2007). *The impact of health insurance on outpatient utilization and expenditure: evidence from one middle-income country using national household survey data*. Health Research Policy and Systems.

Ehrlich, I., & Becker, G.S. (1972). *Market insurance, self-insurance, and self-protection*, The Journal of Political Economy, 80(4), 623–48.

Ehrlich, I. (2000). *Uncertain lifetime, life protection, and the value of life saving*. Journal of Health Economics, 19, 341–67.

Grossman, M. (1972). *On the Concept of Health Capital and the Demand for Health.* Journal of Political Economy, 80 (2), 223–55. https://doi.org/10.1086/259880

Grossman, M. (1998). *Continuing competence in the health professions*. American Journal of Occupational Therapy, 52(9), 709-715. https://doi.org/10.5014/ajot.52.9.709

JOUILIL, Y., & LECHHEB, H. (2019). *Impact De La Couverture Médicale De Base Sur Le Recours Aux Soins Préventifs Au Maroc : Une Investigation Théorique Et Empirique*. Revue d'Etudes en Management et Finance d'Organisation, (8), ISSN : 2489-205X.

Jowett, M., Deolalikar, .A., & Martinsson, P., (2004). *Health insurance and treatment seeking behaviour: evidence from a low-income country*. Health Economics.

Rochaix, L., & Tubeuf, S. (2009). *Mesures de l'équité en santé : Fondements éthiques et implications.* Revue économique, 60(2), 325-344.

RAWLS, J. (1971), *A Theory of Justice*, Belknap Press of Harvard University Press.

Rothschild, M., & Stiglitz, J.E. (1976). *Equilibrium in Competitive Insurance Markets: An Essay on the Economies of Imperfect Information*. The Quarterly Journal of Economies, 90(4), 629-650.

Shavell, S. (1979). *On Moral Hazard and Insurance*. The Quaterly Journal of Economics, 93(4), 541-562.

Stone, D. (2008). *Understanding Fairness and Efficiency*. In Health Politics and Policy.

Tabellini, G. (2000). *Apositive Theory of social security*. The Scandinavian Journal of Economics, 102(3), 523-545.

Ulman, P. (1999). L*es relations entre sante et croissance dans les pays developpes*. Université Paris XII-Val de Marne.

Usher, D. (1973). *An imputation of the measure of economic growth for changes in life expectancy*. In M. Moss (Ed.) The Measurement of Economic and Social Performance (Studies in Income and Wealth, Vol. 38, pp. 193-225). National Bureau of Economic Research.

Zweifel, P., & Manning, W.G. (2000). *Moral hazard and consumer incentives in healthcare*. In A.J. Culyer, & J.P. Newhouse (Eds.), Handbook of Health Economics (vol. 1).Elsevier.

Reports :

Rapport de l'Observatoire National du développement Humain : Indicateur de suivi du développement humain : niveau &tendances à l'échelle nationale et régionale, 2012-2017.