Revue Française d'Economie et de Gestion
ISSN : 2728- 0128
Volume 6 : Numéro 2

The Impact of Compulsory Health Insurance on Medical Care Expenditure by Moroccan households: A Matching Approach

L'impact de l'assurance maladie obligatoire sur les dépenses des soins médicaux des ménages marocains : Une approche selon la méthode d'appariement

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Date de soumission : 09/12/2024

Date d'acceptation : 05/02/2025

Pour citer cet article :

BOUZIT. A. & AL. (2025) « The Impact of Compulsory Health Insurance on Medical Care Expenditure by Moroccan households: A Matching Approach», Revue Française d'Economie et de Gestion « Volume 6: Numéro 2 » pp : 314- 330.

Abstract

Over the past two decades, a large number of empirical studies in the literature have intensively analyzed the various effects of health insurance. These effects include health expenditure and the use of medical care in different countries around the world, using different econometric methods, i.e., econometric valuation methods or other econometric methods. The aim of this article is to assess the impact of compulsory health insurance on medical care spending by Moroccan households during the 2017 period, using data from the household panel survey developed by the National Observatory of Human Development. After presenting a summary of the empirical literature, we proceeded to define the research methodology using the Propensity Score Matching method for impact assessment, and this, to demonstrate and verify is that really Compulsory Health Insurance will significantly reduce household medical care expenditure. Next, we identified the main stylized facts about the dynamics of macroeconomic quantities. Finally, we discussed our empirical results, which show that compulsory health insurance has significantly reduced medical care expenditure by Moroccan households by 18%. This is in line with the literature and reinforces our study.

Keywords: Compulsory health insurance; medical care expenditure; impact assessment; propensity score matching; PSM.

Résumé

Au cours des deux dernières décennies, un grand nombre d'études empiriques dans la littérature ont analysé de manière intensive les différents effets de l'assurance maladie. Ces effets comprennent les dépenses de santé et les utilisations des soins médicaux dans différents pays du monde à l'aide des différentes méthodes économétriques, à savoir, les méthodes économétriques d'évaluation ou d'autres méthodes économétriques. Cet article a pour objectif d'évaluer l'impact de l'Assurance Maladie Obligatoire sur les dépenses des soins médicaux des ménages marocains au cours de la période 2017 à partir des données proviennent de l'enquête panel des ménages élaborée par l'observatoire national de développement humain. Après avoir présenté une synthèse de la littérature empirique, on a procédé à la définition de la méthodologie de recherche en utilisant la méthode d'Appariement du score de propension (Propensity Score Matching) pour l'évaluation l'impact, et ce, pour démontrer et vérifier est ce que vraiment l'Assurance Obligatoire Maladie permettra de réduire significativement les dépenses des soins médicaux des ménages. Ensuite, on a identifié les principaux faits stylisés de la dynamique des grandeurs macroéconomiques. Finalement, on a discuté nos résultats empiriques et qui montrent que l'assurance maladie obligatoire a réduit significativement les dépenses de soins médicaux des ménages marocains de 18%. Ceci est conforme à la littérature et renforce notre étude.

Mots clés : Assurance Maladie Obligatoire ; dépenses des soins médicaux ; évaluation d'impact ; appariement du score de propension ; PSM.

Introduction

Health economics is an applied field of study that enables a systematic and rigorous examination of the problems encountered in promoting health for all. By applying economic theories of the consumer, the producer and social choice, health economics aims to understand the decision-making behavior of individuals, health care providers, public and private organizations and governments.

Health economics promotes healthy lifestyles and positive health outcomes by studying healthcare providers, hospitals and clinics, care management and public health promotion activities.

In Morocco, the National Social Security Fund (NSSF) manages compulsory health insurance (CHI) for private-sector employees and pensioners. The National Fund for Social Security Organizations (NFSSO) manages compulsory health insurance (CHI) for active and retired public sector employees. This scheme, which came into effect on August 18, 2005, was instituted in 2002 by Law 65.00 on the Health Coverage Code.

Therefore, in view of all of the above, as part of this work, we aim to evaluate how does Compulsory Health Insurance impact on household medical care expenses in Morocco?

Using data from the household panel survey developed by the National Observatory of Human Development in 2017 and using the Propensity Score Matching (PSM) method, we seek to demonstrate and test the following hypothesis:

Compulsory Health Insurance would reduce household spending on medical care.

In order to conduct our study properly, section 2 will provide an overview of the literature, focusing on the techniques used to analyze the relationship between health insurance and household medical care expenditure. Section 3 discusses the data and the empirical technique of the study. Section 4 presents the data analysis and some stylized facts, while discussion of the results is presented in section 5. Section 6 is a conclusion.

1. Empirical literature review:

Over the past two decades, a large number of empirical studies in the literature have intensively analyzed the various effects of health insurance. These effects include health expenditure and the use of medical care in different countries around the world using various econometric methods, namely, econometric evaluation methods or other econometric methods.

1.1. Empirical Studies Using Econometric Evaluation Methods

First, we can cite a study conducted by Budi Aji, Manuela De Allegri, Aurelia Souares & Rainer Sauerborn (2013) in which they analyzed the impact of health insurance programs on personal expenditure (hospitalization costs, clinic costs, doctor fees, traditional healer fees, and medication) in Indonesia using data from a household panel survey collected at four points in time between 1993 and 2007 using three linear panel data models, two of which accounted for endogeneity: pooled ordinary least squares (OLS), pooled two-stage least squares (2SLS) for instrumental variable (IV), and fixed effects (FE). At the beginning of 2005, Indonesia had three major health insurance schemes that differed in population coverage, social benefits, and insurance agencies: Askes for civil servants (introduced in 1968); Jamsostek for formal private sector employees (introduced in 1992); and Askeskin for the poor (introduced in 2005). The variables used were: household income, personal expenditure, type of health insurance, gender, age, household size, education level, and health status. The study found that two health insurance programs had a significant negative impact on personal expenditure using instrumental variable (IV) estimates. In the instrumental variable (IV) model, Askeskin reduced personal expenditure by 34% and Askes by 55% compared to non-Askeskin and non-Askes, respectively, while Jamsostek was found to have no significant effect on personal expenditure. In the fixed effects (FE) model, only Askeskin had a significant negative effect with an 11% reduction in personal expenditure. This study showed that two major existing health insurance programs in Indonesia, Askeskin and Askes, effectively reduced household personal expenditure.

In 2019, Stefan Dercon, Jan Willem Gunning, Andrew Zeitlin, and Simone Lombardini studied the impact of a health insurance program (Bima ya Jamii product offered by the Cooperative Insurance Company "CIC") in Kenya on healthcare utilization using the randomization method (RCT). This study uses a unique panel dataset collected in 2010 and 2012. The variables used represent sure variables: health utilization, health expenditure, health indicators, subjective well-being, and health shock. The results show that having health insurance appears to be associated with a reduction in total medical expenditure and hospitalization costs. However, we find no evidence of effects on the use of healthcare facilities or on subjective well-being. The results also suggest that health insurance has positive effects on household non-food consumption and per capita consumption. Moreover, households that subscribe to health insurance in response to experimental treatments are less likely to borrow from informal sources to cover medical costs.

As for Nguyen Thi Thu Thuong, Tran Quang Huy, Do Anh Tai, and Tran Nhuan Kien (2020), they analyzed, through a combination of the Difference-in-Differences (DID) and Propensity Score Matching (PSM) methods, the impact of health insurance on healthcare utilization and direct health expenditure in Vietnam using two waves of the Vietnam Household Living Standards Survey in 2014 and 2016. The variables used were: outcome variables, namely healthcare utilization and direct health expenditure, control variables, namely age, gender, ethnicity, marital status, education level, occupation, household composition, access to clean water, toilets, household expenditure and assets, self-reported health status of individuals, and geographical location. The results show that health insurance increases the probability of seeking outpatient care, the average number of outpatient visits, the total number of visits, and the average number of visits to district-level healthcare providers over the last 12 months. Generally, the Vietnamese health insurance program increased the use of healthcare services and reduced health expenditure for participants in voluntary and heavily subsidized health insurance programs.

1.2. Empirical Studies Using Other Econometric Methods

In 2016, Cuong Nguyen studied the impact of children's health insurance programs (two main health insurance programs managed by Vietnam: student health insurance, which targets schoolchildren, and free health insurance for poor children, children from ethnic minorities, and other at-risk households, such as households whose members died in the war or are disabled) on healthcare utilization and health expenditure for children aged 6 to 14 in Vietnam using four cycles of the Vietnam Household Living Standards Survey from 2006 to 2012. The author used fixed-effects regressions on panel data to eliminate endogeneity bias due to unobserved time-varying data to estimate the impact of health insurance in their study. The variables used were: outcome variables, namely healthcare utilization and personal health expenditure, control variables, namely the logarithm of per capita income, household position, the number of doctors and hospitals per 1,000 inhabitants in the provinces, the age and gender of children, and the education and demographic variables of parents. The results show that both school and free health insurance programs have a positive and significant effect on the number of medical consultations, hence they increased the number of medical consultations for children; the impact of the free health insurance program is higher than the impact of the school health insurance program; free health insurance reduced health expenditure per visit, hence health insurance is more useful for low-income households than for the wealthy by reducing the burden of health expenditure. Consequently, the provision of health insurance

can help improve access to healthcare services for children. This study also highlights the importance of the role of parental education in children's healthcare. Children whose parents are more educated are more likely not only to have health insurance but also to use it.

By applying the Kruskal-Wallis test and the general multivariate linear regression model to analyze the current situation and explore the impact of medical insurance as the main payment on medical expenditure, Yanbing Zeng, Jiecheng Luo, Long Ou, Manqiong Yuan, Zi Zhou, Yaofeng Han & Ya Fang (2019) studied the impact of medical insurance on medical expenditure for the elderly in China (The medical security system consists of basic medical insurance "UE-BMI*, UR-BMI** & NCMS***" managed directly by the central and local governments and commercial insurance, which complements social medical insurance and mainly applies to the wealthy population) using data from the 2014 Chinese Longitudinal Healthy Longevity Survey (CLHLS). The variables used were: outcome variables, namely total medical expenditure; control variables, namely age (60-79, +80 and gender, residence (rural, urban, and city), marriage, education, pension (no, yes), annual per capita income, medical service (no, yes), economic status. The results show that the influence of different types of medical insurance as main payments on medical expenditure for the elderly varies; NCMS had a negative and greater impact on medical expenditure while UR-BMI had a positive impact. Therefore, participation in NCMS is useful for reducing the pressure of medical costs. The study showed that healthcare costs differed by gender and that elderly women could cost significantly more than elderly men.

Using the logit probit model to estimate the impact in their study, Jian Sun & Shoujun Lyu (2020) studied the effects of medical insurance on catastrophic health expenditure in China using panel data obtained from the China Family Panel Studies (CFPS) conducted in 2012, 2014, and 2016. The variables used were: the dependent variable, namely CHE and takes the value 0 or 1, medical insurance variables were adopted as independent variables and include four dummy variables: UEBMI, URBMI, NRCMI, and SMI, indicating whether they were covered by medical insurance while demographic variables include three nominal variables: marital status, gender, and hukou status and health variables include two dummy variables: having chronic diseases and health status, were chosen as control variables in this study. The results of the regression by gender indicate that coverage by supplementary medical insurance (SMI) for male residents had a significant effect on preventing catastrophic health expenditure (CHE), while the effect was not significant for female residents. Furthermore, the results of the regression by health status show that coverage by supplementary medical insurance (SMI)

had a significant impact on reducing the probability of catastrophic health expenditure (CHE) for healthy residents, while the impact was not significant for residents in poor health. Finally, the robustness check results were consistent with the previous results.

2. Research Methodology

In our study, we opted for the matching method. The latter is a quasi-experimental method involving the use of large databases and complex statistical techniques to generate the best possible artificial comparison group for a given treatment group, by seeking to identify the non-recipients most similar to the recipients on the basis of characteristics observed in the data. Matching methods involve four key stages, the first three representing "Design" and the fourth "Analysis":

1. Define "proximity": the measure of distance used to determine whether one individual is a good partner for another;

2. Implement a matching method, taking into account this proximity measure;

3. Assess the quality of the resulting matched samples, and if necessary repeat steps (1) and (2) until the samples are well matched, and

4. Analyze the result and estimate the treatment effect, taking into account the matching performed in step (3).

The data used in this study to estimate the model coefficients come from the household panel survey developed by the national observatory of human development.

The variables available in our database for components 0, 1, 2, 3, 4, 5, 7 and 8 are:

Table 1: Definition of database variables

The variables	Variable labels
V0C_1	Region
V0C_9	Environment: Urban=1 or Rural=2
V1_2	Gender: Male=1 or Female=2
V1_3	Relationship to head of household?
V1_12	Age
V2_2	Reading and writing
V3_6	Type of activity?
V4_1	Are you covered by health insurance (including RAMED)?
V4_3	Health insurance organization?
Taille_menage	Household size
DAMM_Hyg_Soins_Medicaux_2017	Household medical expenses
W_poids_individu_transversal	Individual cross-sectional weight
W_poids_menage	Household weight

Source: ONDH

In our study, we will focus on the variable of household health insurance, therefore, households benefiting from compulsory health insurance, using data from the 2017 household panel survey developed by the National Observatory of Human Development to estimate the impact of the latter on medical care expenditure.

3. Data Analysis and Stylized Facts:

In this section, we present the main health indicators in Morocco in 2018, as well as the evolution of the different variables of the Moroccan health system in recent years.

Table 2: Main Health Indicators of Morocco Compared to Benchmark Countries, 2018

Indicator	Morocco	Algeria	Tunisia	Iran	Jordan	Lebanon	France	Egypt
Life expectancy at birth	**76,0**	76,4	76,0	76,9	76,0	77,7	82,9	70,5
Healthy life expectancy	**65,3**	65,5	66,3	65,4	66,4	66,1	73,4	61,1
Maternal mortality ratio (per 100,000 live births)	**72,0**	140,0	62,0	25,0	58,0	15,0	8,0	33,0
Proportion of births deliveries assisted by skilled health personnel (%)	**86,6**	97,0	74,0	99,0	100,0	-	97,0	92,0
Service coverage index (UHC: Universal Health Coverage)	**65,0**	76,0	65,0	65,0	70,0	68,0	80,0	68,0
Under-five mortality rate years (per 1000 live births)	**22,2**	25,2	13,6	15,1	17,6	8,1	3,9	22,8
Density of doctors (per 1000 inhabitants)	**0,9**	1,2	1,3	1,5	3,4	2,4	3,2	0,8
Density of nursing staff (per 1000 inhabitants)	**0,7**	1,9	2,6	1,6	3,1	2,6	10,6	1,4

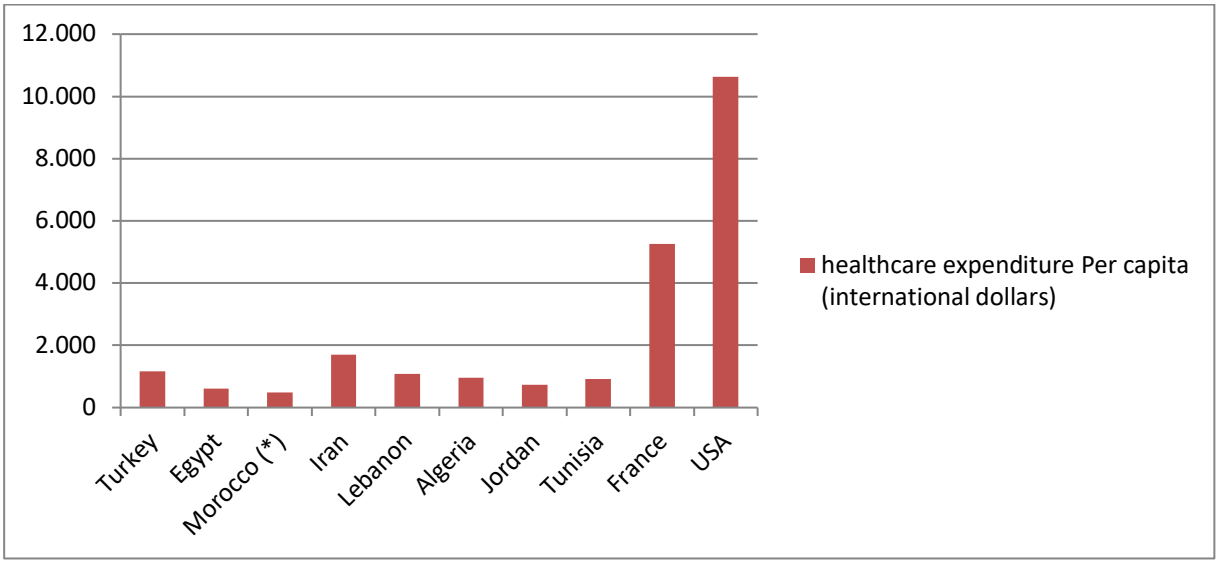
Source: Ministry of Health (National Health Accounts 2018)

The above indicators allow us to situate Morocco relative to other countries. Indeed, undeniable progress has been made in improving the health status of the Moroccan population, as the country is better ranked in terms of life expectancy at birth, which is 76 years, and healthy life expectancy, which is 65.3 years, while Morocco is less well ranked in terms of the proportion of deliveries assisted by skilled health personnel, which is 86.6%, and the service coverage index, which is 65.

Moreover, Morocco is less well ranked in terms of the maternal mortality ratio, which is 72 per 100,000 live births, the under-five mortality rate, which is 22.2 per 1,000 live births, the

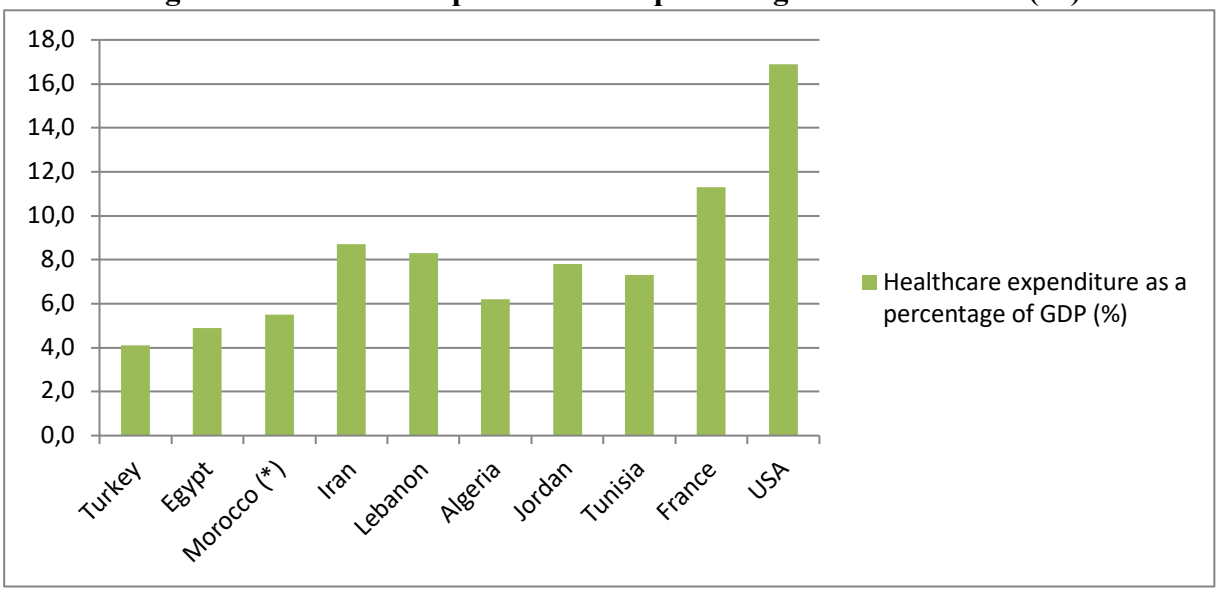
density of doctors, which is 0.9 per 1,000 inhabitants, and finally, the density of nursing staff, which is 0.7 per 1,000 inhabitants.

Figure 1: Health expenditure per capita in PPP$ in 2018



Source: Prepared by the authors based on the National Health Accounts 2018 of the Ministry of Health

Figure 2: healthcare expenditure as a percentage of GDP in 2018 (%)



Source: Prepared by the authors based on the National Health Accounts 2018 of the Ministry of Health

Total health expenditure per capita places Morocco with a low figure (489 PPP$ or 1,730 Dhs or 184 USD), representing a rate of 5.5% of GDP, while countries such as Turkey and Lebanon spend almost double what Morocco spends per inhabitant and almost triple for Iran. France spends almost 10 times more than Morocco, and the USA spends 21 times more.

The graphs above provide a comparison of the level of health expenditure per capita in PPP$ and health expenditure as a percentage of GDP in 2018.

Table 3: Evolution of Total Health Expenditure (THE), 1997-2018 (in Billions of Dhs)

Year	THE (in billions of Dhs)	Gap in evolution of THE (in billions of Dhs)	Ratio of evolution of THE (in %)	THE per capita (in Dhs)	Gap in evolution of THE per capita (in Dhs)	Ratio of evolution of THE per capita (in %)
1997	15,0	-	-	550	-	-
2001	18,9	3,90	26,0	663	113	20,5
2006	30,6	11,70	61,9	1 002	339	51,1
2010	47,8	17,20	56,2	1 498	496	49,5
2013	52,0	4,20	8,8	1 578	80	5,3
2018	60,9	8,90	17,1	1 730 (184 $ USD/ 489 $PPA)	152	9,6

Source: Prepared by the authors based on the National Health Accounts 2018 of the Ministry of Health

The table above shows that Morocco has experienced a remarkable evolution in total health expenditure between 1997 and 2018, with an increase of 8.9 billion Dhs between 2013 and 2018, representing a growth rate of 17.1% and an average annual growth of 3.2% between 2013 and 2018. This growth rate indicates a positive trend in improving health financing due to the contribution of all health financing agents in Morocco. Total health expenditure per capita has increased by 152 Dhs between 2013 and 2018, representing a growth rate of 9.6%, or an average annual increase of 30.4 Dhs between 2013 and 2018.

Table 4: Evolution of the Number of Insured and Dependents in Thousands

	NFSSO				NSSF			
	2019	**2018**	**2017**	**2016**	**2019**	**2018**	**2017**	**2016**
Active	**2 118**	**2 102**	**2 097**	**2 118**	**6 490**	**6 030**	**5 626**	**5 232**
Insured	827	804	793	790	2 854	2 673	2 474	2 271
Dependents	1 290	1 297	1 304	1 327	3 636	3 357	3 152	2 961
Retirees	**1 000**	**992**	**934**	**906**	**993**	**944**	**898**	**851**
Insured	486	464	437	411	557	528	501	475
Dependents	514	528	497	495	436	416	398	376
Total	**3 118**	**3 093**	**3 030**	**3 024**	**7 483**	**6 975**	**6 524**	**6 083**
Insured	1 313	1 268	1 230	1 201	3 411	3 202	2 975	2 746
Dependents	1 804	1 825	1 801	1 823	4 071	3 773	3 549	3 337

Source: Prepared by the authors based on the statistical yearbooks of Morocco from HCP

Generally, for the NFSSO insurance scheme, there is a slow evolution in the number of active insured due to the low recruitment in the public sector between 2016 and 2019, and even for the number of retired insured due to the low number of retired employees for the same period. As for the dependents of active insured, there is a decrease between 2016 and 2019 due to the decrease in the number of family members for new recruits in the public sector.

For the NSSF insurance scheme, there is a slow evolution in the number of retired insured between 2016 and 2019 due to the low retirement rate during these years in the private sector. As for the active insured and their dependents, there is a strong increase between 2016 and 2019 due to the high recruitment in the private sector and the increase in the number of family members for new recruits during this period.

Table 5: Evolution of Expenditure by Type of Care in Thousands of Dhs

Type of Care	**NFSSO**			**NSSF**		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**
Médicaments admis au remboursement	1 670 510	1 589 207	1 577 986	1 344 656	1 219 652	1 069 365
Hospitalisation	845 556	821 845	823 034	970 710	933 148	825 245
Dialyse	449 948	426 225	403 373	516 816	520 524	434 127
Accouchement	160 294	163 132	158 327	216 296	197 270	178 784
Consultations et visites	300 583	288 068	294 413	258 052	238 693	217 845
Analyses de biologie médicale	490 464	443 255	424 434	375 023	362 642	312 362
Actes d'exploration et de spécialité	259 101	243 213	238 189	55 874	57 074	49 103
Radiologie et imagerie médicale	114 512	104 728	105 676	219 315	214 702	183 635
Soins bucco-dentaire	379 617	341 372	466 619	121 810	129 267	112 295
Autres dépenses	497 618	480 524	488 130	150 815	148 486	127 669
Total	**5 168 203**	**4 901 570**	**4 980 183**	**4 229 367**	**4 021 458**	**3 510 431**

Source: Prepared by the authors based on the statistical yearbooks of Morocco from HCP

For the **NFSSO** insurance scheme, reimbursable drugs represent the largest part of the expenditure dedicated to the care of insured and dependents, with an average rate of 32.14% between 2017-2019 compared to total expenditure, followed by hospitalization with an

average rate of 16.6% between 2017-2019, while the lowest expenditure is dedicated to radiology and medical imaging, with an average rate of 2.16%.

For the **NSSF** insurance scheme, reimbursable drugs also represent the largest part of the expenditure dedicated to the care of insured and dependents, with an average rate of 30.9% between 2017-2019 compared to total expenditure, followed by hospitalization with an average rate of 23.22% between 2017-2019, while the lowest expenditure is dedicated to exploration and specialty acts, with an average rate of 1.4% between 2017-2019.

We have presented the state of the art in the fourth section by analyzing the main indicators as well as the evolution of the different variables of the Moroccan health system in recent years, which allow us to situate Morocco relative to other countries, where we have observed undeniable progress that has been made in improving the health status of the Moroccan population.

After presenting the state of the art of the Moroccan health system, we will discuss in the fifth section the examination of the empirical results for our database.

4. Results and Discussion

This section will be used to analyze and discuss the results of the matching method.

Table 6: Mean Test

Group	Observations	Mean	Standard Deviation
0	5.917	8.543041	0.7814803
1	440	8.941362	0.7444571
Combined	6.357	8.570611	0.7854531
Difference		-0.3983207	

Source: Prepared by the authors using STATA

$Diff = Mean\,(0) - Mean\,(1)$ $\qquad tc = -10.3480$

$H_0 : diff = 0$ $\qquad DDL = 6355$

$\boldsymbol{H_a : diff < 0}$	$\boldsymbol{H_a : diff = 0}$	$\boldsymbol{H_a : diff > 0}$
$\mathbf{Pr(T < t) = 0.0000}$	$Pr(\lvert T\rvert < \lvert t\rvert) = 0.0000$	$\Pr(T > t) = 1.0000$

According to the test, the probability is 0.000 < 0.05, so we reject H_0, hence there is a significant difference in mean between the treatment group and the control group;

Therefore, through household participation in the Health Insurance program, there is a significant difference in mean by treatment in terms of medical care expenditure between the treated and non-treated, which amounts to 39.83%.

Table 7: Estimation of the Probability of Participation

CHI	Coefficient	z	$P > \|z\|$
Region	0.0257456	2.52	0.012
Gender	1.344865	18.76	0.000
Area	-0.6271682	-8.71	0.000
Read and Write	0.3352234	4.76	0.000
Relationship	-0.0523068	-2.24	0.025
Age	0.0007817	0.37	0.710
Household Size	0.0307552	2.28	0.022
Type of Activity	0.0828255	6.08	0.000
Constant	-3.393817	-14.65	0.000

Source: Prepared by the authors using STATA

Note: The common support option was selected.

The region of common support is [0.00179529, 0.51341095].

By generating the probability of participation or not in this program while estimating or modeling the pscore equation.

At this level, the choice of variables to include in the model is crucial, hence it is necessary to include in the model all variables that have a significant impact on the probabilities of belonging to the treated group.

• The optimal number of blocks is 7, and the balancing of the propensity score property is satisfied and verified;

• The common support is generated; hence the treated households are matched with non-treated households with a close propensity score. The common support is between 0.00179 and 0.51341;

As for the significance of the different variables on Health Insurance, we note that according to the regression test in the table above:

• The probability of the area is 0.000 < 0.05 and t-calculated = |8.71| > 1.96 = t-table, so the test is significant and we have a negative coefficient, hence the area has reduced household enrollment in Health Insurance by 62.72%, generally concerning the rural area.

• The probability of gender is 0.000 < 0.05 and t-calculated = |18.76| > 1.96 = t-table, so it is significant and we have a positive coefficient, hence gender has positively and significantly increased household enrollment in Health Insurance by 134%.

• The probability of education is 0.000 < 0.05 and t-calculated = |4.76| > 1.96 = t-table, so it is significant and positive, hence the ability to read and write has positively and significantly increased household enrollment in Health Insurance by 33.52%.

Table 8: Stratification Matching test

n. treat.	n. contr.	ATT	Std. Err.	t
440	5224	**-0.170**	0.039	4.357

Source: Prepared by the authors using STATA

According to the Stratification Matching test, benefiting from a Health Insurance program has reduced household medical care expenditure by 17% with a significant effect (t-calculated = |4.357| > 1.96 = t-table).

Table 9: Direct Matching using Nearest neighbor

Coefficient	z	P > |z|
-0.1844236	2.45	**0.014**

Source: Prepared by the authors using STATA

According to the Direct Matching test, benefiting from a Health Insurance program has reduced household medical care expenditure by 18.4% with a significant effect (the probability is 0.014 < 0.05 and t-calculated = |2.45| > 1.96 = t-table.

5. Conclusion

Health Insurance allows all participants to use the health services they need while protecting them from financial difficulties at the time of payment for these services or after payment by benefiting from reimbursement. For this reason, public decision-makers have made a satisfactory effort following the introduction of Compulsory Health Insurance (CHI) in 2005 for public sector employees and private sector employees, the generalization of RAMED from March 13, 2012, and the implementation of CHI for students from 2016, hence the medical coverage rate of the population has increased from 16% in 2005 to 64% in 2018. Total health expenditure has experienced remarkable growth, reaching approximately 60.9 billion dirhams

in 2018 compared to 52 billion dirhams in 2013, representing an overall increase of 17.1% and an average annual increase of approximately 3.2%.

The objective of this work is to analyze and evaluate the impact of Compulsory Health Insurance on medical care expenditure by households in Morocco in 2017 using the Propensity Score Matching method to demonstrate and verify whether Compulsory Health Insurance will significantly reduce household medical care expenditure. This work reveals important information on the interaction of each variable with another, providing recommendations to Moroccan public decision-makers for making public policy decisions regarding the generalization of medical coverage to Moroccan citizens and giving importance to experimental and quasi-experimental methods based on econometric analysis.

The results of the econometric analysis reveal that benefiting from Health Insurance has significantly reduced household medical care expenditure by 18%. This is in line with the literature and reinforces our study.

Moreover, in future research, we intend to extend the analysis of our research with other econometric impact evaluation methods, namely Difference-in-Differences, in particular, after the generalization of social coverage for all Moroccans by the end of 2023, to explore the long-term effects of compulsory health insurance on household financial stability and health outcomes.

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