

An Analytical Data Model to Improve Benefits of the Comprehensive Health Insurance System

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Abstract – Health insurance is one of the most important types of insurance against the risks of health conditions for an individual including the costs of examination, diagnosis, treatment, psychological and physical support, Egypt applied the social health insurance system until the first half of 2019, then a new health insurance system was developed from the second half of 2019 until Now, it was called the comprehensive health insurance system, which depends on the obligatory apply of health insurance to all categories of the Egyptian people through providing high quality medical services and integrated care without discrimination, in accordance with Law No. 2 of the new comprehensive health insurance system issued on January 11, 2018. in the official journal. And the research problem is focused on if there are mechanisms for the General Authority for Health Insurance to divide society into slices according to the monthly income of each individual and Classifying insured individuals based on monthly/annual income, in addition to monthly/annual expenses. In additional to if there any allocated of a package of the medical services and coverage percentages appropriate for each slice. This paper provides an analytical data model along with a comparison between models of health insurance systems in Egypt, England, Saudi Arabia and Thailand presenting the most important aspects of the systems as well as their weaknesses. That will help the researcher to present a development proposal for the comprehensive health insurance system in Egypt in a way that maximizes the benefits of health insurance and improves its performance

Index Terms – Comprehensive Health Insurance System (CHIS), An Analytical Data Model, Improve Benefits of Health Insurance System, Universal Health Coverage (UHC), Universal Health Insurance System (UHS)

1 INTRODUCTION

Health insurance is can be considered as one of ways to deliver health care to individuals and groups. In additional to a social system based on cooperation and interdependence between individuals to bear what one person is unable to bear alone. The insurance companies organize the use of risk distribution for a fixed fee to provide the best ways to secure comprehensive health care. This program is offered by government institutions or private companies.

Many countries applying a health insurance system differently based on special policies, laws and legislation in terms of individuals that are covered medically, coverage ratios and funding sources in addition to the subscriptions that are collected from individuals in their countries.

The first health insurance policy was issued in Germany in 1883, and as for the Arab world, the first document written in the Arabic language to secure medical treatment appeared in 1957 in Egypt between the United Insurance Company and the Bank of Alexandria, and another document was issued in the same year between the Misr Insurance Company Asustander Petroleum Services Company.[¹]

The beginning of health insurance in Egypt dates back to 1964 called social health insurance which was a major system

for providing health care services and this date was preceded the issuance of many legislations that were mainly directed at the workforce of workers and employees and the work environment and concerned with work injuries and compensation, and some models of satisfactory care.[²]

[³] On January 11, 2018 Law No. 2 of the new comprehensive health insurance system was issued in the Official Gazette that was applied later in the second half of 2019 till now.

One of the most important problems faced to apply the new comprehensive health insurance system is collecting a monthly subscription for health insurance from all the different classes of the people in fixed percentages, whereby each person has to pay the value of 1% of the insured in accordance to Law. despite of the great variation in the monthly income between members of the Egyptian society, which is inappropriate and unfair for the limited and middle classes. the new comprehensive health insurance law does not take into account differences in the size of monthly income and monthly expenses per person and does not divide the Egyptian society into slice based on their monthly income, which will certainly affect the provision of medical coverage with the required efficiency due to the lack of financial resources necessary to

¹Published by: <https://ar.wikipedia.org/wiki>, Retrieved on 11 February 2021.

²Published by: <http://www.hio.gov.eg/Ar/presidency/prief/Pages/default.aspx>, Retrieved on 11 February 2021.

³Published by: <https://منشورات | قانون نظام التأمين الصحي الشامل رقم 2 لسنة 2018> (manshurat.org), Retrieved on 11 February 2021.

prepare hospitals and provide medical devices and supplies. Moreover, the poor classes bear high rates of medical coverage in the cost of radiology, ~~test~~ medical tests and provision of medicines at 10% of the total cost per family member, this is in addition to 5% for providing service in the hospital's internal departments and a hundreds of pounds for home medical visits, which is added to the monthly subscriptions cost for each person.

2 RELATED WORK

The research [4] has been explained the Thailand government's sought to implement the Universal Coverage Program in Thailand (UCS) to improve access to and utilization of health care since it was first introduced in 2002. However, this study investigated health-seeking behavior patterns and their social/contextual determinants among beneficiaries of health care services provided to the local population of Thailand. The results of the study showed that UCS was adequately responsive to beneficiaries' needs from a vertical justice perspective. In particular, for the lower income group, we found that they (1) had more health care needs, (2) received more services from certain facilities, and (3) paid less for inpatient and outpatient services. However, the study also found that a large proportion of beneficiaries still use off-network services, which may imply a lack of universal access to policy services from a horizontal equity standpoint. Thus, the policy should continue to expand and diversify the advantages of its services to strengthen horizontal equity. In particular, the involvement of the private sector for employees as well as the growing unmet health needs of those living in rural areas may be important policy priorities for this. Finally, methodological issues such as modulation of severity and detailed classification of health-seeking behaviors need further study to better understand the impact of the policy

The research [5] has presented an analytical study of the health insurance market in KSA" where the study discussed the health insurance service provided in the Kingdom of Saudi Arabia within the framework of a cooperative system managed by service providers under the auspices of the Council of Cooperative Health Insurance. It is a mandatory service for the intended beneficiaries who are expatriates working in the

private sector and their dependent family members. Seven key indicators are taken into account: policyholder gross premiums, net totals, claims settled, gross service promotion commissions, extent, coverage and customer retention rates and current and cumulative market surplus rates.

After study and analysis in this research, it was possible to reach a general conclusion, which is that the insurance sector, the health sector in the Kingdom of Saudi Arabia represents the side in the insurance market in the Kingdom all indicators studied are that health insurance represents more than 50% of the total market insurance in the Kingdom

The research [6] has concluded that several measures are taken to promote and support the UHC policy in Thailand: increasing revenues; optimum use of resources; reduce variances across health insurance plans; and improving the quality of healthcare. Powered by specialized services, it is people-centered for its beneficial effects on health outcomes and on the resilience of society and the economy. It will have a valuable and sustainable impact on health system performance and people's health.

Primary care has been the focus of nurturing health care reform efforts in Thailand since the 1970s, through national policies that expanded the number of health facilities and the health workforce and expanded financial coverage across the country. From its traditional role of providing basic disease-based care to being the first point of contact in integrated, coordinated, community-oriented and person-centered care for which the national health budget must be prioritized.

The research [7] has Comparisons of Health Insurance Systems in Developed Countries" where made comparisons in the application of health insurance systems in a number of 5 countries, namely Canada, Germany, Japan, the United States of America and Singapore, there are an enormous number of ways that health care insurance programs vary around the world. Most country systems can be viewed as combinations or variations on the five systems described here. While it would be wonderful if there were a way of identifying the characteristics of the most effective systems and the most equitable ones. Unfortunately doing so in this paper would require going beyond the boundaries of what is feasible. There are several excellent surveys of country's health care systems

In [8] aimed to review an evaluated Study of Health

⁴ Seung Chun Paek,1 Natthani Meemon,1 and Thomas T. H. Wan: Thailand's universal coverage scheme and its impact on health-seeking behavior, Springerplus. 2016, Published online 2016 Nov 10.

⁵ Hussein bin Mohammed Borai: Analytical study of the health insurance market in KSA, Department of Health Services and Hospitals Administration - College of Economics and Administration, King Abdulaziz University.

⁶ Kanitsorn Sumriddetchkajorn, Kenji Shimazaki, Taichi Ono, Teshu Kusaba, Kotaro Sato,c and Naoyuki Kobayashi, Universal health coverage and primary care, Thailand. Bull World Health Organ. 2019 Jun 1, published online 2019 Apr 1. Universal health coverage and primary care, Thailand

⁷ Randall P. Ellis, Tianxu Chen, and Calvin E. Luscombe. Comparisons of Health Insurance Systems in Developed Countries, Boston University, Department of Economics, Forthcoming in Culyer, Anthony (ed.) Encyclopedia of Health Economics, Elsevier Press., Inc. 2014.

⁸ Ku Pushpinder Kaur Benipal. An Evaluated Study of Health Insurance Scheme in Reference to General Insurance Corporation, Commerce Faculty, Pt. Ravishankar Shukla University Ph. D. Degree, Research Centre, Durga Mahavidyalaya Raipur C.G.2016.

Insurance Scheme in Reference to General Insurance Corporation" where the study relied on the health insurance sector in India has its some shortcomings and problems. Some of the problems that came to knowledge during the study are given most of the insurance schemes available in insurance sector are concentrated at the middle and upper classes population of the country. Rural and semi-urban populations are neglected from receiving the services of health insurance schemes. Individual health insurance schemes are less popular among people as compared to group health insurance policies. General public are unaware about the benefits and importance of health insurance products.

The research [9] Presents an analysis of Health Insurance Schemes of Oriental Insurance Company Limited" where various information collected from 100 respondents from the Health Insurance Policyholders in Tirunelveli Town were analyzed showing that the life coverage will be playing a very important role in the Oriental Insurance Company Scheme and Extended services are expected by the policy holders, The existing health insurance product should be reviewed in order to earn profit from health insurance product. Government must provide separate apex body for regulating health schemes and monitoring fraudulent claims and fixing price for health insurance products. Due attention should be given to unemployed, disabled persons, employees working in unorganized sectors while framing health insurance product. In under-developing country like India, the per capita income of the citizen is very low.

The research [10] aimed to understanding the pattern of health insurance awareness and consumption among various demographic groups and to learn the determinants of consumer purchase decision in health insurance in the state of Kerala. Further, effort is made to assess the influence of important factors on purchase decision, individually and collectively. The specific objectives include:

a) Identifying the factors those distinguish an insurance subscriber from a non-subscriber.

b) Suggesting an integrated model by connecting dominant factors that influence an individual's health insurance purchase decision.

The researcher considering the sample selected has been distributed in the three geographical regions of the state of Kerala with the regions having ensured adequate sample size to give equal chance to all members of the areas selected.

considering the findings that critical factors like education, income levels, awareness of health insurance etc are widely spread and near uniform in the state, the findings from the study of the sample can be considered to be a fair representation of the population of the state and close to

generalization of the findings to the state's behavior in the subject.

with the government of India and that of the state keen on achieving the target of 20% health insurance coverage by 2015, the topic of health insurance is of great importance. A substantial section of the society, that does not come under government schemes of any kind have to look up to the private and public sector health insurance companies in an environment of rising health care cost and serious health concerns. The study investigates the aspects of consumer behavior that are critical information to the health insurance product marketers. Areas like awareness, impact of overall environment and response of the consumers on these developments are important to the agencies like government and NGOs

3 COMPREHENSIVE HEALTH INSURANCE SYSTEM ANALYSIS (DIFFERENT MODELS)

3.1 comprehensive health insurance system in Egypt

In [11] has been explained the current scenario on a new health insurance system in Egypt
The new system aims to create a unified, comprehensive, new health system that is more effective and quality in providing health care services to Egyptian citizens.

Redirecting state resources to finance subscriptions of those who are not able as beneficiaries of the new system.

The new system will be implemented gradually in stages so that the new system will be implemented in the group of governorates that are most prepared in terms of infrastructure, while working to improve the infrastructure of the governorates of the following stages to ensure the provision of high-quality health services to all citizens in Egypt.

The comprehensive health insurance system will apply on all groups of the Egyptian people with the aim of achieving comprehensive health coverage, which achieves the principle of social solidarity, and extending the umbrella of insurance protection to all citizens in an integrated system that provides high-quality health services and achieves financial solvency so

⁹S. MONICA PETER, M. An Analysis of Health Insurance Schemes of Oriental Insurance Company Limited, Dissertation Submitted to Manonmaniam Sundaranar University in partial fulfillment of the requirement for the award of the degree of Master of philosophy in Commerce, Department of Commerce, School of Business Studies, Manonmaniam Sundaranar University, TIRUNELVELI-627012.

¹⁰ S. Thomas Varghese. Determinants of Consumer Purchase Decisions of Health Insurance in Kerala, School of Management Studies. Cochin University of Science and Technology, Cochin - 682 022, Ph.D. 2013.

¹¹Published by: <https://منشورات> | 2018 لسنة 2 رقم 2018 لسنة 2018
قانون نظام التأمين الصحي الشامل رقم 2 لسنة 2018
قانونية (manshurat.org), Retrieved on 11 February 2021.

that the new system relies on the public treasury gradually and becomes a stand-alone system Financially sustainable.



Fig.1. THE MOST IMPORTANT FEATURES OF THE NEW SYSTEM.

TABLE 1. SUMMARY DESCRIPTION OF MONTHLY SUBSCRIPTIONS OF THE INSURED AND DEPENDENTS

Category	Subscriptions	Dependents
Insured workers subject to Social Insurance Law No. 79 of 1975	1% of the full salary, according to a minimum salary declared by the government at the national level	3% for a non-working wife or no fixed income, 1% for each dependent child
Insured and similar persons subject to Social Insurance Law No. 108 of 1976	5% of the insurance fee or full salary, according to a minimum salary declared by the government at the national level. Which is greater!	
Members of other professions in third parties are subject to the laws mentioned in the previous two items		
Egyptians working abroad not subject to Article 45 of this law		

Employment subject to the Comprehensive Social Insurance System Law promulgated by Law No. 112 of 1980	5% of the insurance fee only where the total amount paid by the individual for the whole family does not exceed 7%. And the public treasury covers the cost difference	
Pensioners	2% of the monthly pension	
Widows and Pensioners	2% of the monthly pension	Non

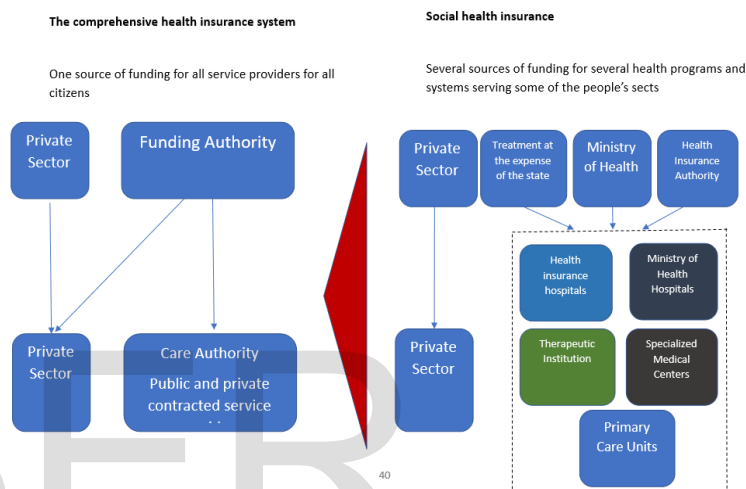


Fig.2. A comparison between the social insurance system and the comprehensive health insurance system

TABLE 2. SUMMARY DESCRIPTION OF BUSINESS OWNERS' SHARE FOR THEIR WORKERS

The Subscriptions' Value
4% (3% sickness insurance + 1% work injuries) of the total contribution fee for insured workers in accordance with the provisions of Law No. 79 of 1975 and a minimum of fifty pounds per month

3.2 Health Insurance System in UK (National Health Service (NHS))

In Paper [12] The UK has a government-sponsored universal healthcare system called the National Health Service (NHS). The NHS consists of a series of publicly funded healthcare systems in the UK. It includes the National Health Services (England), NHS Scotland, NHS Wales and Health and Social Care in Northern Ireland. Citizens are entitled to healthcare under this system, but have the option to buy private health insurance as well. The NHS Plan promises more power and information for patients, more hospitals and beds, more doctors

¹² Josh Chang, Felix Peysakhovich, Weimin Wang and Jin Zhu, the UK Health Care System.

and nurses, significantly shorter waiting times for appointments, improved healthcare for older patients, and tougher standards for NHS organizations.

The UK's health care system is one of the most efficient in the world, according to a study of seven industrialized countries. The Commonwealth Fund report looked at five areas of performance - quality, efficiency, access to care, equity and healthy lives, The Netherlands ranked first overall, closely followed by the UK and Australia. UK performed well when it came to quality of care and access to care. The UK also ranked first in efficiency, which was measured by examining total national spending on healthcare as a percentage of GDP, as well as the amount spent on healthcare administration and insurance.

In [13] the objectives of the National Health Service (NHS)

- The NHS provides a comprehensive service, available to all
- Access to NHS services is based on clinical need, not an individual's ability to pay
- The NHS aspires to the highest standards of excellence and professionalism
- The patient will be at the heart of everything the NHS does
- The NHS works across organisational boundaries
- The NHS is committed to providing best value for taxpayers' money
- The NHS is accountable to the public, communities and patients that it serves
- Commitment to quality of care

3.3 comprehensive health insurance system in Kingdom of Saudi Arabia

In [14] represented the cooperative health insurance system implemented by the Kingdom of Saudi Arabia a regulation of a law has been drawn up to work with, which allows companies to provide medical services through either the company's medical units prepared and equipped for this, and it was approved in accordance with the regulation of the Cooperative Health Insurance Law issued by the Kingdom in 2013 by Ministerial Resolution 9/35/1 and amended by Ministerial Resolution 1215 by contracting with one of the health insurance companies located in Saudi Arabia, which has been qualified for this and obtained a work permit within the list of the cooperative health insurance system.

In [15] represented a health insurance policy for the insured, which includes:

- Medical examination of all diseases, treatment and provision of medicines in its affiliated clinics.
- Preventive measures are taken for both the mother and the child to be cared for, and vaccinations are provided for them.
- In addition, laboratory and radiological examinations are performed for the patient.
- The patient is residing in hospitals affiliated with the health insurance in order to perform operations and also give birth, and they are cared for after the operation.
- All diseases that are related to the teeth and gums are also treated, but the installation of dentures or orthodontics is not provided.

The competition between health insurance companies, each company has developed a set of options that allow the employer / the insured to choose the most suitable for him in terms of value compared to the volume of service.

3.4 Universal Health Coverage in Thailand

In Paper [16] represented Thailand's policy on universal health coverage (UHC) has made good progress since its inception in 2002. Every Thai citizen is now entitled to basic preventive, curative and palliative health services at all stages of life, like their counterparts elsewhere, but the universal health insurance system faces challenge. The four insurance programs aim to cover the entire population. However, both MWS and VHCS had operational problems, causing nearly 30% (about 18 million people) to be unsecured by 2001. MWS suffered from wrong -targeting problems due to difficulties in assessing the income of those employed in the informal employment sector. A 2000 household survey indicated that only 35% of all MWS recipients met the MWS eligibility criteria and VHCS suffered from adverse selection issues. A study, possibly due to its voluntary nature, found that the presence of the disease was positively associated with the purchase and use of VHCS.

Subsequently, the Thailand's government created the UCS program in 2002 by merging the MWS and VHCS programs. Currently, three health insurance programs for the entire population are implemented, namely CSMBS (9%), Social Security System (16%), and UCS (75%) Table 1 presents the characteristics of the three health insurance programs in brief. Brief characteristics of three health insurance programs in Thailand.

¹³Published by: [The NHS Constitution for England - GOV.UK \(www.gov.uk\)](http://www.gov.uk), Retrieved on 26 March 2022.

¹⁴Published by: The executive regulations for the cooperative health insurance system, Amended by Ministerial Resolution issued in January 28, 2021, P: 17, <https://www.cchi.gov.sa/>, [Microsoft Word - اللائحة التنفيذية لنظام الضمان الصحي التعاوني تعديل \(٦\) \(1\).docx \(cchi.gov.sa\)](https://www.cchi.gov.sa/), Retrieved on 8 February

2022.

¹⁵Published by: <https://www.almaal.org/health-insurance-for-saudis-residents-and-employment>, Retrieved on 11 February 2022.

¹⁶ Seung Chun Paek,1 Natthani Meemon,1 and Thomas T. H. Wan: Thailand's universal coverage scheme and its impact on health-seeking behavior, Springerplus. 2016, Published online 2016 Nov 10.

4. COMPARISON OF COMPREHENSIVE HEALTH INSURANCE SYSTEMS IN (EGYPT- KINGDOM OF SAUDI ARABIA - THAILAND - UK GOVERNMENT):

Many countries in the world apply a comprehensive health insurance system, but the application system differs from one country to another according to the capabilities and financial resources available in it. As below we review the most

important points of evaluation of the comprehensive health insurance systems in some countries, which are in (Egypt- Kingdom of Saudi Arabia - Thailand - UK government). Taking into the goals of the health insurance in each country, mechanisms for its implementation and the financial resources of each country.

TABLE 3. A Comparison of Comprehensive Health Insurance Systems in (Egypt- Kingdom of Saudi Arabia - Thailand - UK government) Advantages and disadvantages

Elements Of Comparison	Egypt	Saudi Arabia	Thailand	UK
Commencement Date of The Implementation of The Health Insurance System	Egypt implemented comprehensive health insurance in 2018, and its umbrella covers all citizens participating in the system	The Kingdom of Saudi Arabia implemented social health insurance and then amended it according to the new regulation, and it was approved in accordance with the regulation of the Cooperative Health Insurance Law issued by the Kingdom in 2013 by Ministerial Resolution 9/35/1 and amended by Ministerial Resolution 1215.	Thailand has implemented the comprehensive health insurance before both Egypt and Saudi Arabia in 2002 and with the assistance of the International Labor Organization (ILO). Thailand achieved universal health coverage in 2002 by implementing the Universal Coverage Scheme (UCS, also known as the 30-baht scheme).	England is one of the first countries that apply the comprehensive health insurance where it started in 1948. The NHS was officially opened by Minister of Health Aneurin Bevan on 5 July 1948, without having to pay directly in England and Wales, Scotland, and Northern Ireland.
Objectives of New Comprehensive Health Insurance System	<p>Egypt puts a variety of objectives that:</p> <ul style="list-style-type: none"> • create a unified, comprehensive, new health system that is more effective and quality in providing health care services to Egyptian citizens. • Redirecting state resources to finance subscriptions of those who are not able • The comprehensive health insurance system will apply on all groups of the Egyptian people 	<p>Kingdom's of Saudi Arabia puts a variety of objectives that show the role and effectiveness of cooperative insurance system</p> <ul style="list-style-type: none"> • Medical examination of all diseases, treatment and provision of medicines in its affiliated clinics. • Preventive measures are taken for both the mother and the child to be cared for, and vaccinations are provided for them. • laboratory and radiological examinations are performed for the patient. • orthodontics is not provided. 	<p>Thailand puts a variety of objectives that show the role and effectiveness of Universal Health Coverage</p> <ul style="list-style-type: none"> • Preventive services • Diagnosis • Ante-natal care • Curative care • Medicine, medical supplies, organ substitutes, and medical equipment • Boarding expenses within health care unit • Newborn and child care • Physical and mental rehabilitation 	<p>UK puts a variety of objectives that show the role and effectiveness of NHS</p> <ul style="list-style-type: none"> • The NHS provides a comprehensive service, available to all • Access to NHS services is based on clinical need, not an individual's ability to pay • The patient will be at the heart of everything the NHS does • The NHS is committed to providing best value for taxpayers' money
Subscriptions of the Insured and Dependents	<p>It is one of the weaknesses points in the comprehensive health insurance system applied by Egypt where the monthly subscriptions for health insurance from all The different classes of the people in fixed percentages.</p> <ul style="list-style-type: none"> • 1% of the full salary, according to a minimum salary • 3% for a non-working wife or no fixed income, 1% for each dependent child • The business owners' share for their workers 4% and a minimum of fifty pounds per month 	<p>One of the strengths points in the Kingdom's cooperative insurance system provides a variety of subscription vary depending on time, size and type of service provided</p> <p>The Kingdom of Saudi Arabia depends on private insurance companies, each company has developed a set of options that allow the employer / the insured to choose the most suitable for him in terms of value compared to the volume of service, for example: Bupa Health Insurance Company is the cheapest insurance company, where the average health insurance price for the silver category is 15,000 Saudi riyals, and for the gold category, the average price is 26,000 Saudi riyals, and that is</p>	<p>Thailand's health insurance provides a variety of financial values for subscriptions vary according to service provided</p> <p>It required co-payment of 30 baht (about \$90 USD) for both outpatient and inpatient services except for vulnerable groups (eg, Previous beneficiaries of health care services were the poor, the elderly and children under the age of 12)</p> <ul style="list-style-type: none"> • Civil Servant Medical Benefit Scheme: US\$ 367 • Social Security Scheme: US\$ 71 • Universal Coverage Scheme: US\$ 79 	<p>England is a leader in NHS and provides a variety of tireless packages vary depending on the subscription period, the quality and size of services provided, comprehensive health insurance without subscriptions to some categories of England citizens</p> <p>Can get free NHS subscriptions if:</p> <ul style="list-style-type: none"> • Are 60 or over are under 16 • Are 16 to 18 and in full-time education • Are pregnant or have had a baby • Have a specified medical condition • Have a continuing physical disability that prevents you going out without help from another person • Hold a valid war pension exemption certificate and the

Elements Of Comparison	Egypt	Saudi Arabia	Thailand	UK
		for Saudi citizens., For residents and workers in Saudi Arabia, the average price for health insurance is about 500,000 Saudi riyals...etc.		subscriptions is for your accepted disability <ul style="list-style-type: none"> • Have a low income Most adults in England have to pay subscriptions charges, PPC options to choose from: <ul style="list-style-type: none"> • The 3-month PPC costs £30.25 and will save the patient money if the need more than 3 prescribed items in 3 months. • The 12-month PPC costs £108.10 and will save the patient money if he need more than 11 prescribed items in a year.
Subscriptions Charges When Receiving The Service	Egypt puts subscriptions charges when receiving the Service <ul style="list-style-type: none"> • Home visit: One hundred pounds. • Medication (except for chronic diseases and Cancer): 10%, up to a maximum of one thousand pounds, and the percentage rises to 15% in the tenth year of law enforcement. • Medical X-ray and all kinds of medical imaging: 10% of the total value, with a maximum of seven hundred and fifty pounds for the case. • laboratory analyzes: 10% of the total value, with a maximum of seven hundred and fifty pounds for the case. • Internal departments: 5%, up to a maximum of three hundred pounds at one time 	Private insurance companies take over medical coverage according to the health insurance plans they provide Individuals choose the appropriate insurance plan for them, and the medical planning process takes place during the annual subscription period - as mentioned previously	When beneficiaries exceed the assigned treatment package, they are required to pay 100% of the cost of his treatment and examination. Capitation is the provider's main payment method for outpatient services, while inpatients are set global budgets with Diagnostic Related Groups (DRGs) as the main payment method for inpatient services. UCS is implemented only by general tax revenue without contributions from beneficiaries When the policy was initially implemented in 2002, it required co-payment of 30 baht (about \$90 USD) for both outpatient and inpatient services except for vulnerable groups (eg, Previous beneficiaries of health care services were the poor, the elderly and children under the age of 12).	Most adults in England have to pay subscriptions charges, but some still are always free, including contraceptives and medicines prescribed for hospital inpatients. <ul style="list-style-type: none"> • The current subscriptions charge is £9.35 per item. A subscriptions prepayment certificate (PPC) could save the patient money on NHS subscriptions costs: <ul style="list-style-type: none"> • a 3-month PPC costs £30.25 • a 12-month PPC is £108.10 Other costs: <ul style="list-style-type: none"> • a surgical bra is £30.70 • an abdominal or spinal support is £46.30 • a stock acrylic wig is £75.70 • a partial human hair wig is £200.50 • a full bespoke human hair wig is £293.20
Medical Options	One of weaknesses points of health insurance system, not-availability of various medical packages Which allows individuals to choose the appropriate medical package There no option in this system	One of the most important strengths points in the Cooperative insurance in Saudi Arabia through the status of competitiveness and various medical packages in terms of duration, size and quality of services provided <ol style="list-style-type: none"> 1- Bupa health insurance company <ul style="list-style-type: none"> • Where the average health insurance price for the silver category is 15,000 Saudi riyals, and for the gold category, the average price is 26,000 Saudi riyals, and that is for Saudi citizens. • For residents and workers in Saudi Arabia, the average price for health insurance is about 500,000 Saudi riyals. 2- Cooperative Health Insurance Company 	Of the strengths points of Thailand's health insurance system by providing various medical packages, but have not addressed its duration or quality of services provided by The following is a presentation of the comprehensive health insurance system in Thailand after merging it into three systems instead of 4 systems, which are as follows: <ol style="list-style-type: none"> 1- Civil Servant Medical Benefit Scheme (CSMBS, 9%): Per capita expenditure in 2010: US\$ 367 Government employees, dependents including parents, spouse and up to two children (age < 20). 2- Social Security Scheme (SSS, 16%): Per capita expenditure in 2010: US\$ 71 Private sector employees, 	One of the most important strengths points in the NHS in UK through provided a various medical packages in terms of duration, size and quality of services provided There are 2 PPC options to choose from: <ul style="list-style-type: none"> • The 3-month PPC costs £30.25 and will save the patient money if the need more than 3 prescribed items in 3 months. • The 12-month PPC costs £108.10 and will save the patient money if he need more than 11 prescribed items in a year.

Elements Of Comparison	Egypt	Saudi Arabia	Thailand	UK
		<ul style="list-style-type: none"> • The first category is for the diamond families, and it ranges between about 20 thousand to 21 thousand Saudi riyals. • The second category is for my Platinum family, and it ranges from about 17 thousand Saudi riyals to 18 thousand Saudi riyals. • The third category is for my Golden family, and it ranges between about 15 thousand Saudi riyals to 16 thousand Saudi riyals. • The fourth category is for my silver family, and it ranges from about 13 thousand Saudi riyals to 14 thousand Saudi riyals 	excluding dependents. 3- Universal Coverage Scheme (UCS, 75%): Per capita expenditure in 2010: US\$ 79 The rest of population not covered by SSS and CSMB.	
Tourist and Expatriate Subscriptions to the Country	Also one of the weaknesses points in the comprehensive health insurance system where there is no health insurance for visitors or tourists There no specific subscriptions for tourist and expatriate in this system	One of the strengths points that distinguish cooperative health insurance through the availability of health insurance packages for visitors and tourists coming to Saudi Arabia Medical coverage package for tourists / visitors <ul style="list-style-type: none"> • The maximum benefit limit for each person for the term of the policy, and this includes the minimum limits mentioned in the policy 100 thousand Saudi riyals. • Expenses for examination and treatment of emergency cases: The maximum benefit of this police. 	There no specific subscriptions for tourist and expatriate in this system	One of the strengths points that offers a variety of medical services for tourists and visitors to UK If the visitor has a family member who is an eligible person of Northern Ireland and who lives in the UK, you may be able to join that person in the UK without paying the immigration health surcharge. If you're coming to the UK on a temporary stay of more than 6 months, you may be required to pay an immigration health surcharge at the time of your visa application. The standard surcharge fee is: <ul style="list-style-type: none"> • £470 per year per person for students and each of their dependents • £624 per year per person for everyone else The full amount will be paid upfront for the duration of your visa.

5. RESEARCH OBJECTIVES

The researcher seeking to develop a new analytical data model to improve benefits of the comprehensive health insurance system in Egypt, support decision of the comprehensive health insurance system and provide the required medical coverage of quality and high efficiency, as follows:

- Presenting a different models of the health insurance applied in some countries through the previous studies.
- Conducting an analytical study and comparison of the current comprehensive health insurance system applied in Egypt, UK, Saudi Arabia, Thailand.
- Develop an analytical data model to improve benefits of the comprehensive health insurance system of the General Authority for Health Insurance which helps:

1. Classifying insured individuals based on monthly/annual income, in addition to monthly/annual expenses and dividing them into slices.
2. Determining the financial scale for the monthly subscriptions for each slice through the minimum and maximum limits for each slice.
3. Allocating a package of the medical services and coverage percentages appropriate for each slice (Considerate of coordination with the Ministry of Health and the General Authority for Health Insurance).
4. This study will depend on data mining technique for developing an analytical data model by using WEKA software that provides access to SQL databases using Java Database Connectivity and can process the result returned by

a database query.

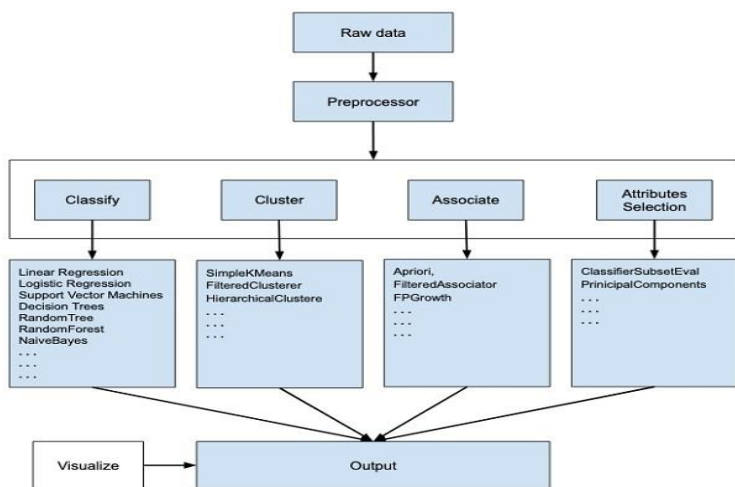


Fig2. DATA ANALYSIS AND CLASSIFICATION BY DATA MINING TECHNIQUE

6 CONCLUSION

Finally, the research aimed at evaluating the comprehensive health insurance system and the implementation mechanisms in Egypt from its advantages and disadvantages, in addition to some comprehensive health insurance models applied in some countries such as Saudi Arabia, Thailand and the United Kingdom, Distributed on three continents (Africa, Asia and Europe). Through a comparison between the comprehensive health insurance systems applied in each country and a presentation of the most important advantages and disadvantages of each insurance system. And it will help the researcher to develop a new health insurance model that improve benefits of the comprehensive health insurance system in Egypt.

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