COLLEGE OF BUSINESS AND ECONOMICS – BACTH III

A STUDY ON RSSB MEDICAL SCHEME FINANCIAL VIABILITY 2011-2015

This thesis was submitted in partial fulfillment of the requirements for the Masters of Business Administration (MBA) degree in University of Rwanda, College of Business and Economics (CBE)

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DECLARATION

I, **Aurélie UMUHOZA** hereby declare that this thesis entitled ***"Study on RSSB medical scheme financial viability: 2011-2015"*** is my original work and has never been submitted to any other University for the award of Masters in Business Administration (MBA/option Finance) degree or any other degree.

Aurélie UMUHOZA

CERTIFICATE

I certificate the present work entitled: *"Study on RSSB medical scheme financial viability: 2011 to 2015"* was done and presented by UMUHOZA Aurélie under my guidance and supervision.

Date:…….

Signature:……

Dr MADDULURI S. Rao

DEDICATION

To my almighty God,

To my husband and sons,

To my parents,

To my brothers,

I dedicate this work

ACKNOWLEDGEMENTS

Foremost, I thank God for protection and perseverance up to the achievement of this research.

My special appreciation is addressed to my supervisor Dr. MADDULURI S. Rao for regular recommendations and willingness to assist me during this research;

My special gratitude goes also to my husband Eric NZAMWITA who has not ceased to support and encourage me during my academic journey; the Almighty God bless you!

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I hereby acknowledge the support of my employer represented by RSSB Senior Management Team to achieve these wonderful studies in MBA Financial Management. Without their cheer financial support regarding capacity building of RSSB staff not leaving apart their assistance during data collection period of this work, I would not accomplish this research. I'm also grateful to my supervisors and workmates. Even though they may not know their input; I'll ask them to trust that their cooperation and team spirit influenced much the success this work.

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Aurélie UMUHOZA

ABSTRACT

The study intends to assess the financial viability of Medical Scheme as a branch of Rwanda Social Security Board (RSSB). Since the Vision 2020 development and implementation, policies, laws, strategies and actions aiming at each Rwandan citizen to have access to quality essential health care and be protected from financial risks due to illness have been elaborated and implemented by the Government of Rwanda (GOR); it is in line with this long term development strategy (Vision 2020) that the former RAMA, currently RSSB Medical Scheme has been established. The study is documentary, quantitative, qualitative (interviews), analytical and retrospective from 2011 to 2015. A desk review done focussing on social health insurance historical, organization, functioning, and management and risks especially those relating to financial aspects worldwide, regional and RSSB Medical Scheme precisely. A four years retrospective secondary data collection concerning affiliation, contribution from affiliated members and employers, other revenues, medical expenditures, administrative costs (overhead) and other expenses, assets, liabilities (brief the annual income statements. The research has done a scrutiny analysis on the balance sheet in the perspective of generating financial ratios as financial indicators which has helped the researcher to assess the financial health of the scheme. The findings from the survey indicated a variation registered in the unit cost was on average 11, 8% between 2011/2015 for the category of health center, 22.4% for District hospitals, 14.9% for Referral hospitals, 34.4% for King Faisal Hospital and 2.9 % for Private clinics. The total expenditure is calculated at RWF 23,461,0 million out of which medical expenses account 70.75%, operating costs, depreciation and amortization account 22.98% and 6.27% respectively. For the same Financial Year 2014-2015, the working capital is calculated at RWF 101,637,463,461 (1,179,070,491+170,335,899,565) - (69,877,506,595) by the upper side of the Balance sheet and at the same amount by the lower side of the Balance sheet worth RWF 101,637,463,461 (85,819,577,701 + 20,136,158,313)-(4,318,272,553). Based on the findings, the researcher concluded that financial viability of the scheme is impressive but it lies on the consistent cumulated reserves and investments income which should finance the scheme and address eventual financial gaps in bad circumstances but not in the long term. Decision-makers and RSSB Seniors managers are invited to paying sufficient attention to study findings and recommendation. The following recommendations were made Reinforce the verification system (team/pools) and setting a monitoring and evaluation system, establishing rigorous control/inspection and supervisory annual calendar;, Introduce the biomedical electronic card as soon as possible in order to fight and prevent fraudulent cases

key words: a study on rssb medical, scheme financial viability.

LIST OF ABBREVIATIONS AND ACRONYMS

DH:	District Hospital
EAC:	East Africa Community
ECASSA:	East and Central Africa Social Security Association
EDPRS:	Economic Development and Poverty Reduction Strategy
EICV :	Enquête Intégrale des Conditions de Vie des ménages
GDP:	Gross Domestic Product
GOR:	Government of Rwanda
HC:	Health Center
HF:	Health Facility
ILO:	International Labor Organization
KFH:	King Faycal Hospital
MDGs:	Millennium Development Goals
MINECOFIN:	Ministry of Economy and Finance
MMI:	Military Medical Insurance
MOH:	Ministry of Health
NHI :	National Health Insurance
RAMA :	La Rwandaise d'Assurance Maladie
RFH:	Referral Hospital
RSSB:	Rwanda Social Security Board
SHP:	Social Health Protection
WHO:	World Health Organization

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CHAPTER I: INTRODUCTION

1.1. Background

This research proposal intends to assess the financial viability of Medical Scheme as a branch of Rwanda Social Security Board (RSSB).

According to the Vision 2020 and EDPRS 2008-2012, the Government of Rwanda is engaged in a wide program of poverty reduction and economic growth in order to ensure the welfare of Rwandan population estimated at 10.412.820 inhabitants (Census 2012) out of which 44.9% were living under national poverty line whereas 24.1% were in extreme poverty in 2011 (EICV3 2010/2011) versus respectively 39.1% and 16.3% in 2014 (EICV4 2013/2014).

Rwandan economy registered significant progress in economic growth from 2000.

The Per capita GDP worth $US376 in 1990 decreased to $US180 in 1995 due to 1990 through 1994 civil war and to 1994 Genocide against Tutsi, but then arised from to $US 220 in 2000, to $US238 in 2005, and to $US 693 in 2013 approaching four times the worst indicator registered in 1995 and surpassing the triple (693/220) of 2000 level. On average, the annual economic growth registered 8.3% between 2000-2010 (MINECOFIN 2011) versus 8% targeted by Vision 2020. According to IMF (II) 2013 estimates, the Rwandan per capita GDP was $730. Despite the mentioned improvement, Rwanda is among the low income countries in the world (GDP <$US 761) where mutual aid and solidarity is common to Sub Saharan including Rwanda.

Main historical values and social economic tissues of Rwandan people have been completely destroyed by the 1994 Genocide against Tutsi, causing extreme poverty and disastrous of health status. Thus; the correlation between health and poverty (Rwanda MOH/ CBHI Policy 2010), can easly explain how illness can be defined as one of the biggest risk factors leading to poverty, and, conversely, poverty can be the root of many health problems. Ensuring an adequate standard of health care by setting up a health insurance system which offers coverage against financial, social and health risks connected to diseases constitutes a very important element in the fight against the poverty.

Policies, laws, strategies and actions aiming at each Rwandan citizen have access to quality essential health care and be protected from financial risks due to illness have been elaborated and implemented by the Government of Rwanda (GOR) .

At the end of year 2002, 2011/2012, 2012/2013 and 2013/2014, 2014/2015 the overall health insurance coverage rate among Rwandan population was estimated respectively at 2%, 97%, 87%, 79%, 82.3%

among which 5-6% are issued by social medical insurances (RSSB Medical Branch, MMI) and commercial health insurance.

This increase in social health insurance is followed by health care service accessibility and use preventing severe morbidity and mortality and therefore improving health status of Rwandan population. The per capita per year visits of health services passed from 0.28 in 2002 to 0.7 in 2008, to 0.86 in the end of year 2009 and to 1,14 (MOH), 2012/2013) versus 1.00 recommended by World Health Organization (WHO) for rural people of developing countries and 6 visits per capita per year worldwide. The similar indicator has been calculated at 1.2, 2.0, 2.6 for RSSB Medical Branch respectively for Fiscal Year 2012/2013, 2013/2014 and 2014/2015 respectively.

This high level of health services by RSSB insured prevents against social and health risks connected to the aforementioned diseases thanks to the adequate standard of health care they are benefiting from and enjoying frequently.

Medical Scheme has been established by the law N°45/2010 of 14/12/2010 that determined its mission, organization and functioning after which all activities formerly performed by Rwanda Medical Insurance (RAMA) and Social Security Fund of Rwanda (CSR) have been merged. The above law was modified and completed by law N°04/2015 of 11/03/2015 from Official Gazette N° 15 of 13/04/2015 and gave to RSSB the responsibility to manage Community-Based Health Insurance (CBHI).The mandate of the institution is to administer social security in the country.

The institution has currently in its management five branches/schemes notably Pension, Occupational Hazard Insurance, Medical Benefit Insurance and Community-Based Health Insurance (CBHI) and recently the Maternity Leave Insurance.

According to its motto "Our health, our future", RSSB has now an important contribution to the national economy through its various activities benefiting retirees and all other categories of citizen in Rwanda. One can states for instance, offered pension on old age, in case of invalidity, survivorship, and diseases relating to work conditions, work injuries, health insurance to workers and all other citizens in informal sector/ (CBHI) and maternity leave supporting working mothers to get their full monthly salary for a 12 weeks maternity insurance leave; this differs from what existed until today with only six weeks of maternity leave fully paid while the remaining six weeks giving right to only 20 percent of the salary leaving women with no option than going back to work (The New Times February, 25th ,2016).

Our focus goes to RSSB medical scheme with the objective of examining its financial viability based on the period from July 2011 through July 2015 and predict the upcoming future (5 years) of the scheme in the long journey of fulfilling its mission while facilitating medical access to its beneficiaries.

As contribution, the study will (i) provide baseline financial indicators to facilitate financial monitoring and evaluation of the Medical scheme, (ii) provide credible information as input to management and decision-making, (iii) determine the degree of progress in the long term.

The research is structured in five chapters. The first chapter concerns the introduction and this discussed about the background of the study, the problem statement, objectives of the study, research questions, the research interests, scope of the study and structure of the study.

The second chapter concerns the literature review which mainly refers to literature about Social security and especially about social health insurance.

The third chapter describes the research methodology which discussed about how the research was conducted using various methods and techniques during the period of data collection.

The fourth chapter presents findings and data analysis as well as discussion.

The fifth chapter concerns the conclusion and recommendations that may be considered for future by decision-makers and RSSB Seniors managers to preserve and to improve current impressive financial viability of RSSB Medical Scheme.

1.2. Objectives

1.2.1.General objective

To assess the financial viability of RSSB medical scheme from 2011-2015.

1.2.2. Specific objectives

- Determine the RSSB Medical Scheme affiliation, contribution and health service utilization for the period from 2011-2015.
- Calculate related ratios of RSSB for the same period and other basic indicator for further Monitoring and Evaluation (M&E).
- Determine the degree of progress in the long term.
- State about the financial viability of RSSB from 2011-2015 according to analysis of ratios and discussion of findings.
- Provide advice and recommendations to RSSB decision makers and other partners of this medical insurance so to preserve or improve its financial viability.

1.2.3. Research questions

How looks RSSB financial picture during the period from 2011-2015?

Are financial ratios ensuring a good financial viability of RSSB for the future?

To what financial and managerial risks is RSSB medical scheme facing in the long run ?

1.3. Research methodology

1.3.1. Study design

The study is quantitative, qualitative (interviews and appreciation on ratios and other baseline indicators), analytic, retrospective from 2010/2011 to2014/2015.

Data collection from various retrieved sources was conducted using quantitative and qualitative methods using the following techniques:

Desk review: Books, brochures, RSSB annual performance reports, notes and different publications reachable on the topic were reviewed.

Interview: Addressed to key informants (cadre staffs) persons with accurate information on RSSB medical scheme.

Therefore, the above methods and techniques helped me to come up with the research findings as well as concluding and providing recommendations to RSSB decision makers and other partners of this medical insurance.

1.4. Research interests

1.4.1. Professional interest

Nowadays, social health insurance is seemed globally to be a solution to providing equitable health care to the population. As an employee of RSSB, an institution mandated to manage among others Social Health Insurance for Civil Servants of public institutions as well as other workers in private organizations willing to enroll in the medical scheme; I would like to provide a humble contribution to the organization evaluating the evolution of medical scheme in terms of its financial management and beside highlighting other areas for financial management practices to be considered by decision makers in this domain in future for better results.

1.4.2. Academic interest

Health financing is one of new topics introduced in the thesis dissertations of our faculty and I wish to see my thesis dissertation being amongst these new thesis dissertations conducted to widen our researches.

1.5. Scope of the study

The scope of this study goes to RSSB medical scheme financial viability.

1.6. Findings utilization

The findings will serve as baseline financial indicators to facilitate financial monitoring and evaluation of the RSSB Medical scheme to determining the degree of progress in the long term; indicators issued by the study constitute a credible information and input to management and decision-making.

1.7. Limitations

Time constraint has been a limiting factor during this study since it was conducted jointly with my professional responsibilities.

Limited time to analyzing the RSSB Medical Scheme in deep, due to my professional obligations I had to fulfill in parallel.

Some reports have not been accessed because they were confidential.

All parameters of the medical scheme financial status could not be analyzed due to lack of financial means.

CHAPTER II: LITERATURE REVIEW

2.1. Introduction

As this world is composed of billions of people who are estimated to be 7 billion today (THE GUARDIAN, 2014) every one, every family, every nation and as a result; every society seeks for the wellbeing/welfare of each society member. Nevertheless, this does not hint potential socio-economic distress due to different reasons including poverty caused eventually by lack of financial means, diseases, etc. Therefore, various strategies have been taken and continue to be taken like for instance the United Nations Millennium Development goals (UN MDGs) adopted in 2000 in the purpose of fighting against socio-economic problems especially for the world's low and middle income countries to achieve a better life by the year 2015. (UNITED NATIONS, 2013)

2.2. Essence of social protection and the necessity of social security

Social protection is not a newly adopted terminology or strategy.

Rather, it finds its root in the 1881 where Chancellor Otto von Bismarck introduced for the first time the social health protection system in Germany (East African Community, 2014).

He was very much concerned on how the country could be kept economically competitive and he knew that promotion of the workers' wellbeing could contribute much to that goal.

The foundation of the old age social insurance in coupled with the sickness insurance and the worker's compensation program in 1883 and in 1884 respectively, enhanced Germans to have a comprehensive system of income security based on social insurance principles (ILO, 2009).

As a result Germans were protected from catastrophic health expenditures that could lead them to fall into poverty once they become sick or injured after accidents.

The advantages found in the social insurance schemes throughout the world regions especially in developed countries conducted to the establishment of a specialized organ later in 1927, the International Social Security Association (ISSA) with the mandate of leading the world social Security institutions and Government agencies, focusing on providing technical and administrative guidelines.

The ratification of the Social Security Act into law was in 1935 by the US President Franklin D. Roosevelt, incorporating a new term that combines "economic security" with "social insurance".

Today, Social security means a lot to everyone since it is defined by the International Labor Organization as "*the protection that a society provides to individuals and households to ensure access to health care and*

to guarantee income security, particularly in cases of old age, unemployment, sickness, invalidity, work injury, maternity or loss of a breadwinner."

The UN Universal Declaration of Human rights recognizes in its article 22 that *"Everyone as a member of society has right to social security."*

In 1952, the ILO adopted the Social Security (Minimum Standards) Convention (No. 102), and in 2001 it launched a Global Campaign on Social Security and Coverage for all.

Nowadays, social security is a major component of welfare policies of all industrialized countries.

Social security has a powerful impact at all levels of society. It provides workers and their families with access to health care and with protection against loss of income, whether it is for short periods of unemployment or sickness or maternity or for a longer time due to invalidity or employment injury. It provides older people with income security in their retirement years. Children benefit from social security programs designed to help their families cope with the cost of education. For employers and enterprises, social security helps maintain stable labour relations and a productive workforce. And social security can contribute to social cohesion and to a country's overall growth and development by bolstering living standards, cushioning the effects of structural and technological change on people and thereby providing the basis for a more positive approach toward.

2.3. Social Health insurance in developed countries

Finland

In Finland, Health care comprises of a greatly reorganized, three-level publicly funded healthcare system and a much smaller private sector. Although the Ministry of Social Affairs and Health has the highest decision-making authority, Local Governments are accountable for providing healthcare to their residents. Finnish Healthcare service is therefore known to be good since 88% of Finnish are estimated to be satisfied. The statutory National Health Insurance (NHI) scheme covers all Finnish residents, and it is run by the Social Insurance Institution (SII) through approximately 260 local offices all over the country (MINISTRY OF SOCIAL AFFAIRS AND HEALTH, 2004).

Mexico

Healthcare is provided via public institutions, private entities, or private physicians.Public healthcare delivery is accomplished via an elaborate provisioning and delivery system put in place by the Mexican

Federal Government whereas Healthcare delivered through private organizations as well as that obtained from private physicians at their private clinics are available only for those comfortable to afford it (WHO, 2010).

Canada

In 1984, the Canada Health Act was passed, which prohibited extra billing by Doctors on patients while at the same time billing the public insurance system. Today, the system is for the most part publicly funded and most hospitals are public although most of the services are provided by private corporations. Many Canadians have private health insurance, often through their employers, that cover these expenses (CBC, 2006).

2.4. Social Health Insurance in lower and middle income countries

The social health protection's main focus is about guaranteeing access to the needed health services while mitigating risks of high poverty caused by probable high costs of medical acts

or treatments. Therefore, guaranteeing social health protection implies making progress towards universal health coverage (WHO, 2010).

On the African Region level, the system was much emphasized by colonial administration where health care services were delivered at 100% free of charge before independence of the countries. Afterwards, in 1950's, countries like Algeria, Egypt, Libya, Morocco and the successful health care insurance in Tunisia were among the ones which created pensions and medical schemes based on social insurance principles. Nevertheless, as time came the system became gradually selective in benefit to salaried workers only while others from informal sector were abandoned due to economic constraints (National Health Insurance Policy, 2010).

2.5. Social Health Insurance in our region (East and Central Africa)

In this context, one can say the creation of ECASSA (East and Central Africa Social Security Association) on 31st March 2007 in Kigali. Its members are Tanzania, Kenya, Uganda, Rwanda and Burundi. The main purpose goes to the protection of EAC migrating workers and their respective families, it also aims to include, in addition to the pension scheme, the health insurance scheme, the civil servant retirement insurance scheme and the professional risks insurance scheme (MINECOFIN, 2009).

According to EAC-SHP study-2014, the social (health) protection is not a new concept to the East African Community. It has been part and parcel of the traditional African values based on solidarity and "the brother's keeper" which date back to the pre-colonial era. Traditional systems of social protection were

based on the traditional (extended) African family and clan (Barya (2011), Even though formal social security systems did not exist, the society employed the traditional family and kinship relationships to provide social protection (Barya, 2011; Ouma, 1995).

According to EAC-SHP study-2014 once again, to strengthen SHP in the EAC region, the Treaty establishing the East African Community calls for harmonization of policies, regulations, strategies, standards and systems in the Health Sector under Chapter 21 (Article 118) of the EAC. The third EAC Development Strategy 2006-2010 and the 19th Ordinary Meeting of the EAC Council of Ministers in November 2009, following the 2nd Forum of EAC Ministers responsible for Social Development in (EAC/CM 19/Decision 58), recommended a regional study on harmonization. The Kigali conference on SHP in the EAC, held from September 11-13, 2012, was attended by experts and ministers of the five East African Countries. This ended with the Kigali Ministerial Statement on Universal Health Coverage and Long-Term Harmonization of Social Health Protection in the East African Community. As reaffirmed by the World Health Assembly in 2005: *"Everyone should have access to health services without having to suffer from financial hardship in the process."* Beyond strengthening the implementation of the common market and honoring the right to health, social protection is one of the mechanisms for achieving development goals.

2.6. General presentation of Social security in Rwanda

In public sector, Formal social security in Rwanda started during colonial times. Further to several legal arrangements or contractual workers in Congo-Belge and Ruanda Urundi, there was establishment of a public institution Rwanda Social Security Fund (CSR-SSFR) according to the Law of 15/11/1962 to manage social security in the country and after which the decree law of 22/08/1974 marked the introduction of social security system under defined benefits or pay –as-you-go system, managing 2 branches, namely: Pension and Occupational Hazards. The Law № 06/2003 of 22/03/2003, official gazette of 15/06/2003, came to complete and modify the above mentioned decree law of 22/08/1974.

In 2001, La Rwandaise d'Assurance Maladie (RAMA) was established based on the Law n° 24/2001 of April 27, 2001 as a health insurance scheme for civil servants and other salaried employees from the private sector whereas four years later, the Military Medical Insurance (MMI) was a second social and mandatory health insurance scheme instituted by the Law n° 23/2005 of December 12th, 2005 It covers security organs forces and it is managed within the Ministry of Defence. The Law Nº 62/2007 of December 30th, 2007 was enacted creating the organization in charge of management of Community Based Health in Rwanda (CBHI) which was later put under the management of RSSB.

The remaining part of salaried workers from private sector adheres from other private insurance companies which provide medical insurance notably *SAHAM, SORAS, PRIME, RADIANT, BRITAM, RADIANT and UAP* or even they are under the responsibility of the organization's internal health facility.

2.7. Presentation of Rwanda Social Security Board (RSSB)

2.7.1. Institutional framework

Rwanda Social security Board (RSSB) has been established by the law N°45/2010 of 14/12/2010 that determines its mission, organization and functioning after which all activities formerly performed by Rwanda Medical Insurance (RAMA) and Social Security Fund of Rwanda (CSR) have been merged. The above Law was modified and completed by the law No 04/2015 of 11/03/2015 and gave RSSB the responsibility to manage Community-Based Health Insurance (CBHI). The mandate of the institution is to administer social security in the country. The institution has currently in its management five schemes notably pension, occupational risks, medical insurance and recently Community Based Health Insurance (CBHI) as well as maternity insurance.

RSSB as a financial institution is supervised by the National Bank of Rwanda according to the banking law N°55/2007 of 30/11/2007 whereas its activities are overseen by the Ministry of Finance and Economic Planning.

Vision

RSSB envisions a comprehensive social security system that addresses the social security needs of all Rwandans.

Mission statement

Provide high quality social security services; ensure efficient benefits distribution, collection of contributions and prudent investment of members 'funds.

Main Responsibilities of RSSB

To manage and promote pension, medical insurance, occupational hazards insurance, maternity leave insurance, contributions before retirement and other necessary schemes;

- To register employers, employees, beneficiaries and self-insured persons in various schemes managed by RSSB;
- To collect and manage contributions as provided by laws;

- To receive and manage donations;
- To pay benefits for or to beneficiaries;
- To make investments in accordance with laws;
- To contribute to the elaboration of social security policy;
- To advise the Government on matters relating to social security;
- To establish relations and collaborate with other regional or international institutions with similar mission.
- To continue providing medical care for retirees who have monthly pension benefits.

Even though the mandate of RSSB is to administer social security in the country and thus consists of the management of five schemes as stated above; our research is focusing on RSSB Medical branch/scheme only.

2.7.2. Medical Branch

The branch of medical insurance in RSSB a vital contribution to the day to day management of the whole organization. During the period from July 2011 through July 2015, the medical scheme of RSSB has played a significant role in collecting related contributions to medical insurance since the enrollment of members has been increasing yearly. On the other hand medical acts, drugs and other related expenses going on beneficiaries were handled by the medical scheme

2.7.2.1. Eligibility

Members automatically include all civil servants including political appointees remunerated for their mandate, Government employee whether governed by a special statute or the general statute for Rwanda Public Service or employment contract, pensioners who previously contributed towards medical care and private institutions that have been accepted after analysis of their capability to pay the contributions.

The law specifies also the dependents of the insured person notably his/her legal spouse, a child recognized under civil law not more than 25 years old when is till at school, being single and without monthly-paid employment as well as a child with a disability based on a certificate of an authorized medical Doctor even though they may be aged twenty five years or above.

The duties of the insurer, the healthcare providers authorized to provide healthcare services and the healthcare services insured; the responsibilities of the affiliate member and the payment of bills from healthcare facilities are also specified.

The later Law Nº 04/2015 of 11/03/2015 provides more clarifications.

2.7.2.2. Contributions

According to the Law Nº 04/2015 of 11/03/2015 specifies that contributions are 15% of employee's basic salary which is paid by both the employer and the employee at the rate of 7.5% each.

RSSB medical scheme also covers the medical insurance for pensioners who previously contributed towards medical care with 7.5% contribution deducted from their monthly pension.

As members and their dependents are entitled to benefit their medical insurance after paying contributions for one month; it is the responsibility of the employer to deduct, declare and pay

their employee's contribution on a monthly basis and not later than the 10th day of the following month .

2.7.2.3. . Healthcare providers

Those authorized to provide healthcare services as part of health insurance:

- ✓ All public health centers and faith hospitals and health centres
- ✓ All district hospitals
- ✓ All national referral hospitals
- ✓ Private health centers and hospitals in partnership with RSSB

2.7.2.4. Healthcare services insured

RSSB covers 85% of the bill for medical treatment and prescribed drugs. Patients themselves cover the remaining 15% of the cost.

RSSB covers the following medical care provision:

- ✓ Medical consultations
- ✓ Drugs, including chemotherapy
- ✓ Surgical interventions
- ✓ Dental care including prosthesis
- ✓ Medical imaging, including CT Scan & MRI
- ✓ Laboratory tests
- ✓ Physiotherapy
- ✓ Hospitalization
- ✓ Eye treatment including provision of; lenses and frames
- ✓ Lower/upper limb prosthesis & Orthesis

- ✓ Dialysis
- ✓ Full Medical check-up

However, the full medical checking is provided under conditions (35 years for women and 40 years for men). RSSB covers all medical acts and procedures, all laboratory and imaging investigations provided in Rwanda.

According to the agreement between RSSB and Ministry of Health, a list of medical procedures and drugs is determined upon which refunds are done. In this perspective, medical care is strictly refundable by the medical scheme of RSSB given that the health facility has signed an agreement with the later.

2.7.2.5. Payment of bills from healthcare facilities

Approved and accurate bills from healthcare facilities must be paid within a period agreed upon by the healthcare facility and the medical scheme. However, the insurance scheme may reject or reduce the costs claimed where:

it considers that the claim is unfounded, inaccurate or based on insufficient information;

Healthcare facility failed to comply with the provisions of the law or of the agreement with the insurer without just reason. (Law Nº 04/2015 OF 11/03/2015).

2.7.2.6. Healthcare services insured by other insurers

Occupational diseases or accidents, road accidents and treatment of human diseases shall be insured by the social security fund.

However, when a person insured under a given health insurance scheme, the insurance scheme shall continue to provide insurance coverage for him/her until the insurer starts paying for him/her.

Where it is established that the conditions required by law are not met for the insurer concerned to cover the costs of healthcare services in case of illness or an accident falling under his/her coverage and it becomes obvious that the accident is caused by a third party, the health insurance scheme shall cover the victim as if he/she has an ordinary illness while retaining the right of action against the person having caused the accident.

For the insured or his/her beneficiary not to be required to reimburse the costs of healthcare services received, he/she shall provide the health insurance scheme with explanations and all the original copies in connection with the harm suffered so that they can be used by the scheme to claim for reimbursement of the costs from the person having caused the accident.

2.7.2.7. Common terminologies in health insurance and financial performance by the current study

According to Guide to Designing and Managing Community-based Health Financing Schemes in East and Southern Africa. Gilbert Cripps et.al, 2000; for a scheme to maximize the use of its financial statements,it is impotant that scheme managers understand how to compute some key financial ratios. These ratios compare different items on the balance sheet or income and expenditure account to give an indication of the financial health of an organization.We have selected ratios here below helped to assess the progress and performance of RSSB medical schem; termininologies and ratios commonly used in helth insurance schems are also described in *RSSB-USAID-MIA Study, January 2015.*

- ***Effective Premium*:** The effective premium is the average premium amount paid divided by the total number of insured.
- ***Pure Risk Premium:*** The pure risk premium is the long-term average cost of care per insured per year. The pure risk premium does not include the component of operating expenses.
- ***Reference Premium:*** The reference premium is the premium per capita needed to cover the total cost of CBHI including claims plus operating expenditure.
- **Claim ratio ratio :** The Claim Ratio reflects only the cost of claims as percentage of earned premium. When the claim ratio exceeds 100%, it means that premium income was too low to meet the cost of claims (even if we set aside the costs of operations). Unless and until the claim ratio is less than 100%, a larger membership (adding scale) aggravates the deficit created by the above-100% claims ratio and in addition the premium would not suffice to also cover the cost of operation because there is presently no amount left to recover the operational costs.
- **Solvency ratio:** The solvency ratio is the capacity of the scheme to honor its debts to third parties through redeeming/selling its assets, without recourse to borrowing. This ratio should be equal to or higher than 1 for sound financial management. When the ratio is less than 1, the organization is termed "insolvent."
- **Liquidity ratio :**This is the ability of the scheme to pay its liabilities as they fall due, if the ratio is higher than 1 it is good , it implies that the scheme is in a position to defray its debts to the health care providers immediately if need be.
- **Cost recovery ratio**

This ratio is good when it is ≥ 1.3 meaning that total annual revenues (contributions plus other revenues) can finance total annual expenditures (medical expenditures plus operating costs & other) and generate a surplus worth 30% as reserve/safety margin.

- **Profitability ratio**

The ratio calculated show how faster the total annual expenses should be returned . The ratio should be positive, when the annual financial result represents a profit and negative in case of deficit.

Usually, the ratio is comprised between zero and one (0-1).

- **Ratio of operating costs to income**

Operating costs include all the costs related to the administration and management of the scheme. As a general rule, this ratio should not exceed 5 percent.

In addition, the financial analysis considered also the yearly financial and actuarial results and related respective actuarial metrics.In this order, the Compound Average Annual Growth Rate (CAGR) calculation was done in each key variable from the ten-years 2011/2012 to 2019/2020 representing an evidence-based Medical scheme income statement historical status.

CHAPTER III: RESEARCH METHODOLOGY

3.1. Definition

According to PETIT ROBERT 1999, the methodology is defined as "asset of the methods and the techniques of a particular domain".

3.2. Research design

The study is documentary, quantitative, qualitative (interviews), analytical and retrospective from 2011 to 2015

3.3. Techniques

Technique is defined as "a set of means and processes that allows the researcher to gather the data and information on his/her/topic of research". The techniques used during my research were the desk review, data collection method via/through secondary data, interviews from key informants and data analysis.

3.3.1. Documentation

A desk review done focussing on social health insurance historical, organization, functioning, management and risks especially those relating to financial aspects worldwide, regional and RSSB Medical Scheme precisely. The former RAMA historic which became RSSB Medical Scheme since the implementation of the law N°45/2010 of 14/12/2010, health care benefits promised by RSSB Medical Scheme, contracts between the later and health providers, annual reports and other existing documents and publications including the relating legal framework have been also reviewed.

3.3.2. Data collection

A four years retrospective secondary data collection concerning affiliation, contribution from affiliated members and employers, other revenues, medical expenditures, administrative costs (overhead) and other expenses, assets, liabilities (brief the annual income statements); health services utilization and billing by level/category (HKF, Ref Hosp, Dist Hosp, Health Centres , private health providers/clinics) have also been gathered in the perspective of quantitative findings production.

3.3.3. Interviews

Interviews have been administrated to main key informants, Deputy Director General of RSSB Medical Scheme, head officers managing units possessing secondary data and information to obtaining their point of view on the scheme functioning, risks to exchange about challenges faced by the scheme as well as opportunities offered to its financial viability.

Therefore, the above methods and techniques enhanced the researcher to come up with the research findings as well as concluding and providing advice and suggestions to RSSB decision makers and other partners of this medical insurance.

3.3.4. Data analysis

The analysis has emphasized on comparison between annual income and expenditures having resulted in annual profit/deficit on one hand and between annual asset and liabilities having also resulted in the same financial result (surplus or gap; profit or deficit) on other hand.

The research has done a scrutiny analysis on the balance sheet in the perspective of generating financial ratios as financial indicators which has helped the researcher to assess the financial health of the scheme, namely:

- ✓ Solvency ratio.
- ✓ Liquidity ratio the
- ✓ Cost recovery ratio
- ✓ Profitability ratio
- ✓ the ratio of operating costs to income
- ✓ The claim ratio

The main sources of data used in the calculation of these financial ratios are the income statement and the balance sheet, for the same period/end date as indicated above

The statement obtained from these ratios helped the researcher to calculate on average annual variation making it easier the modelling/prediction of the RSSB medical financial situation for the upcoming 5 years. The deepened analysis has been also done in sub-variables/modalities aforementioned from affiliation to health services utilization and charging to obtaining complementary institutional and efficiency indicators (if possible according to time) to giving a response as complete as possible to the research question.

The findings derived from this analysis will provide also objective arguments helping in discussion.

In the same perspective, the Compound Average Annual Growth Rate (CAGR) as the most frequently metrics used in economic and financial management and in management policy to predict an event status forecast from known fluctuation in its past yearly growth changes was used in the study prediction;

The modeling exercise was performed using data issued of the 2020/2021 medical scheme income statement status, using mainly the CAGR calculated in each key variable of income or expenditure component and various assumptions such as population growth rate, health service utilization rate, economy growth rate according to concerned variable.

Below is the corresponding equation of CAGR

$$\textbf{CAGR (t)} = \frac{GR_1 + GR_2 + GR_3 + \ldots GR_t}{t}$$

Where GR is the annual growth rate for known period

1, 2, 3, …, t being respectively period (term/interval) 1, 2, 3, …, t

Here below is the simple mathematical modeling formulae that the study used

$V(t) = ((V_0 * (1+r)^t)$

V_0=initial value

t= number of terms or periods

r= CAGR

3.4. Material and tools

The following software have been used for data analysis:

- MS Excel has been used as spreadsheet to stock data, generating graphics (bar charts and line charts) and modelling
- MS WORD for text treatment

CHAPTER IV: FINDINGS, ANALYSIS AND FINANCIAL RATIOS

The findings provided by the study are mainly related to affiliation, contribution, benefits paid out/utilization of health services by RSSSB Medical Scheme beneficiaries, income statements and financial positions from 2011 to 2015. The projection of most of them has been done to show the trend of the latest status up to FY 2022/2023.

4.1. Data analysis

Table 1. AFFILIATION, CONTRIBUTION AND VARIATION FROM 2012 to 2015

	2012/2013	2013/2014	2014/2015	% Share	CAGR
NBER OF AFFILIATES IN PUBLIC INSTITUTIONS	117,405	120,238	125,394		0.046
NBER OF THEIR DEPENDENTS	253,272	251,816	249,694		0.008
TOTAL BENEFICIARIES FROM PUBLIC INSTITUTIONS	370,677	372,054	375,088	81	0.008
CONTR.FROM AFFILIATES IN PUBLIC (million RWF)	27,251,7	28,114,9	31,146,3	84	0.077
ON AVERAGE CONTR. PER BENEFIC. FROM. PUBLIC INSTITUTIONS.	73,519	75,567	83,037		0.078
NBER OF AFFILIATES IN PRIVATE ORGANIZAT	22,549	23,537	25,138		0.058
NBER OF THEIR DEPENDENTS	48,107	48,735	53,139		0.064
TOTAL BENEFICIARIES FROM PRIVATE INSTITUTIONS	70,656	72,272	78,277	16.9	0.064
CONTR. FROM AFFILIATES IN PRIVATE (million RWF)	4,269,3	5,243,0	5,835,8	15.7	0.214
ON AVERAGE UNIT BENEFICIARY. CONTRIB. FROM PRIVATE	60,425	72,547	74,554		0.253
NBER OF AFFILIATES /RETIREES	1,326	1,542	1,821		0.243
NBER OF THEIR DEPENDENTS	5,965	6,875	8,118		0.245
TOTAL BENEFICIARIES FROM RETIREES.	7,291	8,417	9,939	2.1	0.245
CONT.FROM RETIREES(MIO RWF)	87,5	126,3	161,3	0.4	0.29
ON AVERAGE CONTRIBUTION PER BENEFICIARIES FROM RETIREES	12,013	15,007	16,233		0.021
Total RSSB medic. Sch. Benef.	448,624	452,743	463,304	100.0	0.021
GENERAL TOTAL CONTRIBUTIONS (million RWF)	31,608,7	33,484,3	37,143,5	100.0	0.092
Contribut. per benef. in general	70,457	73,959	80,171		0.046

Source: Compiled from RSSB Medical Scheme published data

The table above shows a total of 463,304 beneficiaries out of which 81 % represents workers in public institutions, 16.9% stands for private ????? sector's affiliates and 2.1% of retirees in FY 2014/2015.

In the same period, the total contributions worth 37,143,503,918 out of which 84% come from workers in public institutions, 15.7% from private organizations and 0.4% from retirees in Fiscal Year (FY) 2014-2015.

In regard to the dependents of the three categories of affiliates in the medical scheme, one can notice that each affiliate from public institution accounts 2 dependents i.e. 3 beneficiaries including himself, an affiliate from private institution registers also 2.1 dependents i.e. 3.1 beneficiaries including himself whereas an affiliate retired accounts 4.5 dependents i.e. 5.5 beneficiaries himself included.

Even though retiree's contribution could be low compared to that from the two other categories, a retiree has contributed for a long time and the current RSSB Medical Scheme consistent investments incomes derive from cumulative financial reserves realized thanks to their previous contributions.

Table 2 and Table 3 below illustrate the role played (% share) by RSSB Medical Branch within the entire RSSB contributions as well as benefits paid out.

Table 2. RSSB contributions and medical contributions as a share of total from 2010/2011 to 2014/2015

YEAR	MEDICAL BRANCH	PENSION BRANCH	OCCUPATIONAL HAZARDS	TOTAL	% of medical scheme over contributions
2010/2011	22,024,169,997	26,254,030,952	8,751,343,651	57,029,544,600	39%
2011/2012	27,607,121,723	32,167,809,578	10,722,603,193	70,497,534,494	39%
2012/2013	29,839,281,506	53,123,305,064	N/A	82,962,586,570	36%
2013/2014	33,114,666,367	55,499,971,651	N/A	88,614,638,018	37%
2014/2015	37,305,626,662	61,141,189,287	N/A	98,446,815,949	38%

Source: compiled from published RSSB financial statements

N/A : **Not available at the moment**

Despite the fact that occupational hazards contributions for the years 2012/2013, 2013/2014, 2014/2015 were not available during the time of data collection, the portion of medical branch contributions during the period would be slightly decreasing. If the missing figures from occupational hazards were available, the decrease in medical branch contributions would be remarkable.

Table 3. Benefits paid out (Medical costs) from 2010/2011 to 2014/2015

YEAR	MEDICAL BRANCH	PENSION BRANCH	OCCUPATIONAL HAZARDS	TOTAL	MEDICAL SCHEME AS SHARE TOTAL(%)
2010/2011	7,076,237,998	6,981,807,654	268,970,586	**14,327,016,238**	49%
2011/2012	9,435,099,253	8,129,487,772	293,504,447	**17,858,091,472**	53%
2012/2013	10,922,130,627	10,015,279,334	N/A	**20,937,409,961**	52%
2013/2014	14,497,544,900	12,039,632,892	N/A	**26,537,177,792**	55%
2014/2015	16,553,904,538	15,105,986,388	N/A	**31,659,890,926**	52%

Source: compiled from published RSSB financial statements

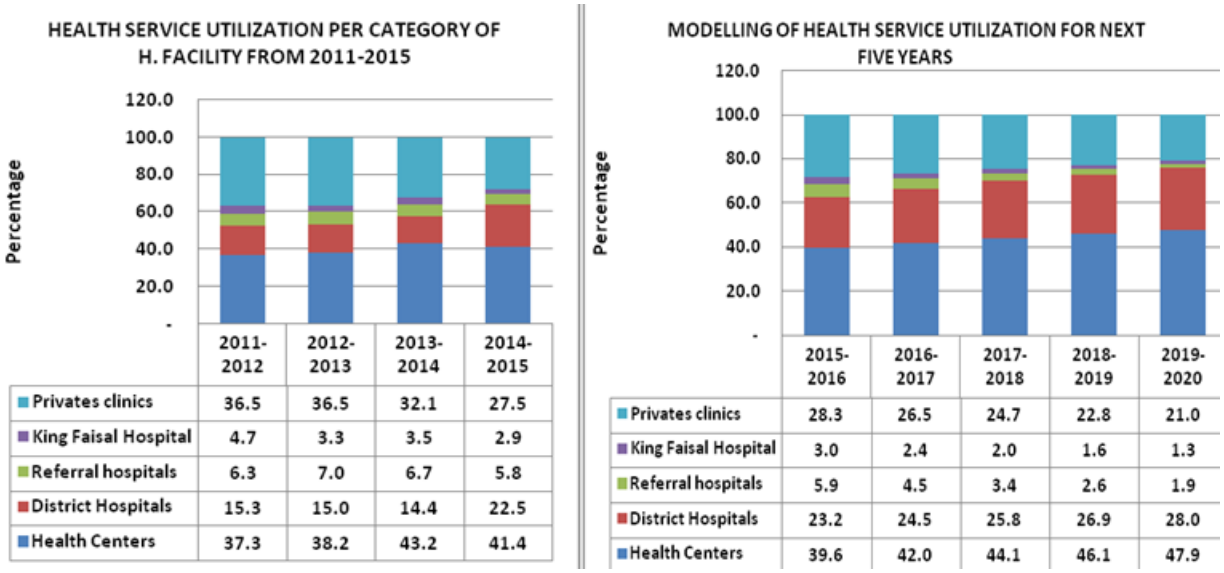
A reverse situation is described in the benefits paid out yet occupational hazards related medical costs for the years 2012/2013, 2013/2014, 2014/2015 were not available during the time of data collection, the portion of medical costs during that period would be increasing. The increase is to be attributed to the greater number of dependents continuously increasing with regard to health services consumption in line with cost of services while contributions don't increase in parallel with total beneficiairies including dependents.

Table 4. HEALTH SERVICES UTILIZATION BETWEEN 2011 AND 2015 AND DISTRIBUTION (%) PER PROVIDER IN 2014/2015 AND IN 2019/2020

	2011/2012	2012/2013	2013/2014	2014/2015	Distribution % in 2014/2015	Distribution % in 2019/2020
Total RSSB Medical Branch Beneficiaries	430,679	448,624	452,743	463,304	ND	ND
Health Centers	262,477	344,931	409,896	502,178	41.4	47.9
District Hospitals	107,789	135,397	136,917	272,720	22.5	28.0
Referral hospitals	44,056	63,637	63,927	69,813	5.8	1.9
King Faisal Hospital	33,056	29,905	33,217	34,780	2.9	1.3
Privates clinics	256,972	329,907	305,028	333,283	27.5	21.0
TOTAL Utilizations	704,350	558,846	948,985	1,212,774	100.0	100.0
Utilization/Beneficiary per year	1.64	1.25	2.10	2.62	ND	ND

Source: Compiled data from RSSB Medical Scheme annual reports

Figure 1. HEALTH SERVICE UTILIZATION PER CATEGORY OF H. FACILITY FROM 2011-2015 AND PROJECTION FROM 2016-2020



Source: Own illustration

According to results findings from health service utilisation per category of health facility , the first used health facility category is health centres with 41.4%, followed by private clinics, district hospitals, Referral hospitals and King Faisal Hospital respectively with 27.5%, 22.5%, 5.8% and 2.9%, see Table 4 and Figure 1.

During the period from 2011/2012 to 2014/2015, on average, the variation registered by health facilities was as follows:

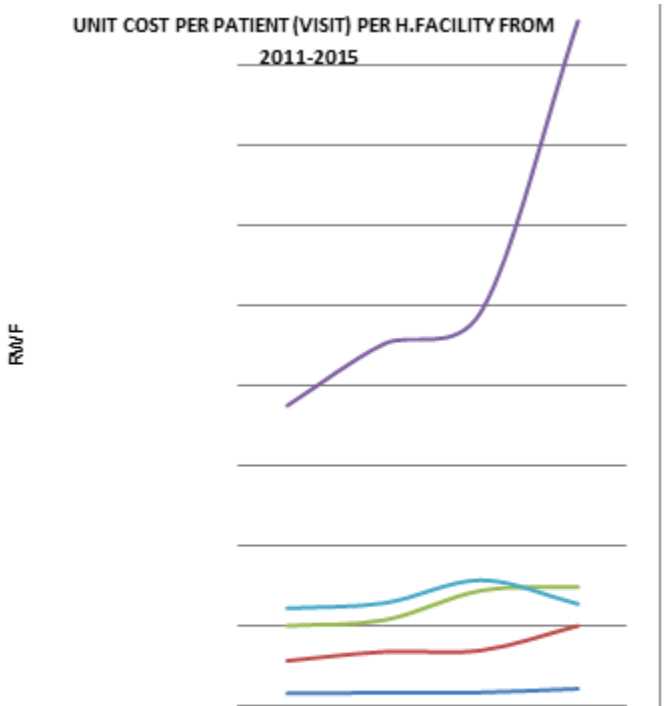
24.3% for health centres 42% for District Hospitals, 18% for Referral hospitals, 2.1% for King Faisal Hospital, 10% for private clinics and finally, 25.7% for overall.

The trend of overall utilization calculated from absolute data shows that the utilization rate was 1.64 visits per beneficiary per year in Year 2011/2012 and after in Year 2014/2015 it was 2.62 visits per beneficiary per year respectively versus 1 visit in rural area of developing countries and 6 visits in OECD countries.

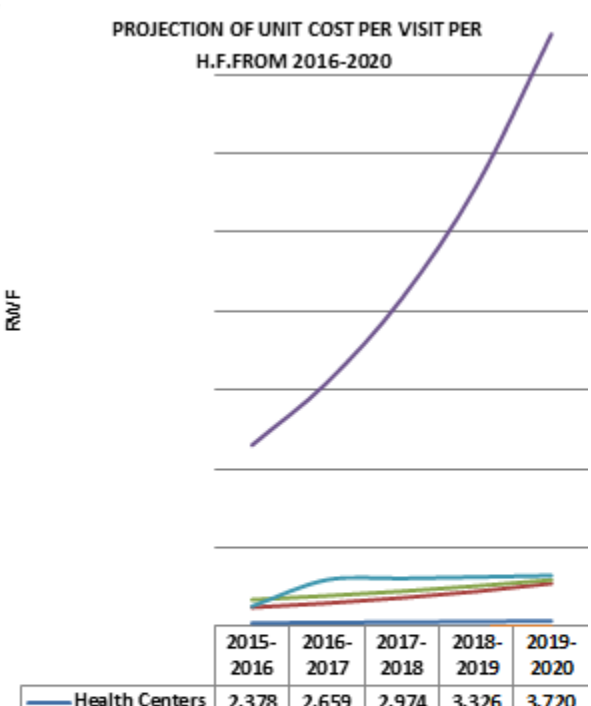
At the end of 2019-2020, the same ranked health facilities are expected to account respectively: 47.9%, 28%, 1.9%, 1.3% and 21% respectively for health centres, District Hospitals, Referral hospitals, King Faisal Hospital and private clinics. This trend reflects a behaviour change in health facilities use by the Medical scheme beneficiaries who will use the health centres whose health care services are more accessible by rural RSSB beneficiaries andare found more cheap than other health facilities. Their portion is expected to increase from 41.4% to 47.9% while District hospitals will

see their portion raised from 22.5%, to 28% Referral Hospitals will decline from 5.8% to 1.9%, King Faisal will decrease from 2.9% to 1.3% while private clinics will decrease from 27.5% to 21%.

Figure 2 UNIT COST PER PATIENT (VISIT) PER HEALTH FACILITY FROM 2011-2015 AND PROJECTION FOR 5 YEARS



	2011-2012	2012-2013	2013-2014	2014-2015
Health Centers	1,542	1,642	1,672	2,126
District Hospitals	5,625	6,755	6,922	10,010
Referral hospitals	10,015	10,710	14,410	14,864
King Faisal Hospital	37,539	45,273	49,303	85,635
Privates clinics	12,180	12,843	15,709	12,728



	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Health Centers	2,378	2,659	2,974	3,326	3,720
District Hospitals	12,251	14,994	18,352	22,461	27,490
Referral hospitals	17,075	19,616	22,535	25,888	29,740
King Faisal Hospital	115,093	154,684	207,894	279,407	375,520
Privates clinics	13,101	29,760	30,631	31,528	32,451

The most costly health facility in 2014/2015 is King Faisal Hospital with on average RWF 85,635 per patient treated, followed by the category of Referral Hospitals with RWF 14,864, by Private clinics with RWF 12,728 while District Hospital and health centre respectively with RWF 10,010 and RWF 2, 126 per patient in the Fiscal Year 2014/2015.

Compared with the on average District Hospital unit cost scored at 100% in the Fiscal Year 2014/2015, the category of health centre accounts 21%, 148% for the category of referral hospitals, 856% for King Faisal Hospital, and private clinics 127%.

The variation registered in the unit cost was on average 11, 8% between 2011/2015 for the category of health center, 22.4% for District hospitals, 14.9% for Referral hospitals, 34.4% for King Faisal Hospital and 2.9 % for Private clinics.

The same unit cost per patient have been modeled until 2019/2020 and they are expected to be 1.7 times the 2014/2015 level for the health centres, 2.7 times for district hospitals, 2.0 times for the Referral Hospitals, 4.4 times for King Faisal Hospital and 2.5 times for private clinics.

At the end of 2019/2020, the more expensive health facility in 2014/2015 will King Faisal Hospital with on average RWF 375,520 per patient treated, followed by the category of Private clinics with RWF 32.451 which will surpasse the Referral Hospitals with RWF 29,740, followed by District Hospital and health centre with RWF 27,490 and RWF 3,720 per patient respectively in the Fiscal Year 2019/2020.

Compared with the District Hospital unit cost scored at 100% in the Fiscal Year 2019/2020, the category of health centre accounts 13.5%, 108% for the category of Referral Hospitals, 1366% for King Faisal Hospital, and private clinics 118%.

The prediction recalls that RSSB must be aware of the financial burden encountered by the King Faisal Hospital registering the higher unit cost now i.e. 8.56 times the District Hospital unit cost and who will 4.4 times the current one. The higher unit cost observed in 2014/2015 will jump to 13.66 times the District Hospital in 2019/2020 instead of 8.56 times observed in 2014/2015.

Table 5. INCOME STATEMENT SYNTHESIS, PROPORTION AND COMPOUND AVERAGE ANNUAL GROWTH RATE VARIATION FROM 2010 TO 2015 IN MILLION RWF

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Proportion in %	CAGR
INCOME							
Contributions & Pharmacy sales	22,721,428,833	28,266,629,105	30,388,964,483	33,232,070,604	37,359,995,253	75.61	0.13
Net returns on investment + Other income	4,535,784,733	5,747,982,202	10,292,377,354	11,447,221,051	12,048,778,842	24.39	0.31
TOTAL INCOME	*27,257,213,566*	*34,014,611,307*	*40,681,341,837*	*44,679,291,655*	*49,408,774,095*	*100.00*	*0.16*
EXPENDITURE							
Medical expenses &Pharmaceutical inventory expensed	(7,482,289,553)	(10,134,853,478)	(11,425,594,462)	(14,574,439,653)	(16,598,516,398)	70.75	0.22
Operating costs (Staff costs, admin. Costs, Other expenses)	(3,214,709,140)	(3,856,813,289)	(5,755,188,801)	(5,580,215,642)	(5,391,578,868)	22.98	0.16
Depreciation and amortization expenses	(113,558,338)	(506,300,149)	(2,587,885,188)	(1,237,162,125)	(1,470,868,647)	6.27	(0.17)
TOTAL EXPENDITURE	*(10,810,557,031)*	*(14,497,966,916)*	*(19,768,668,451)*	*(21,391,817,420)*	*(23,460,963,913)*	*100.00*	*0.22*
NET PROFIT/NET INCOME	*16,446,656,535*	*19,516,644,391*	*20,912,673,386*	*23,287,474,235*	*25,947,810,182*	*100.00*	*0.12*

At the end of 2014/2015, total income are estimated at RWF 49,408.8 million out of which contributions & pharmacy sales account 75.61%, and net returns on investiment plus other income account 24.39%. The total expenditure is calculated at RWF 23,461,0 million out of which medical expenses account 70.75%, operating costs, depreciation and amortization account 22.98% and 6.27% respectively.

This financial situation is to be qualified as very good because the claim ratio is 44% (% total medical expenditures divided by total contribution & pharmacy sales), therefore very good because this indicator must be < 100% as acceptable limit to recover medical expenses.

Another interesting information is the net income which is found capable to recover total expenses related to each year during the past five years , revealing a very good profitability ratio estimated at 1.11.

Table 6. PREDICTION OF RSSB MEDICAL BRANCH INCOME AND EXPENDITURE FOR 5 NEXT YEARS

	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	%	2020/2015
INCOME							
Contributions&Pharmacy sales	42,374,701,930	48,062,515,841	54,513,785,909	61,830,988,289	70,130,354,167	60.54	1.9
Net returns on investment + Other income	15,731,528,321	20,539,922,472	26,818,018,350	35,015,035,192	45,717,497,598	39.46	3.8
TOTAL INCOME	58,106,230,251	68,602,438,313	81,331,804,258	96,846,023,481	115,847,851,765	100.00	2.3
EXPENDITURE							
Medical expenses &Pharmaceutical inventory expensed	(20,318,008,450)	(24,870,985,906)	(30,444,221,019)	(37,266,339,057)	(45,617,196,966)	79.49	2.7
Operating costs (Staff costs, admin. Costs, Other expenses)	(6,237,713,930)	(7,216,638,395)	(8,349,191,758)	(9,659,483,985)	(11,175,408,778)	19.47	2.1
Depreciation and amortization expenses	(1,225,942,877)	(1,021,801,600)	(851,653,474)	(709,838,035)	(591,637,387)	1.03	0.4
TOTAL EXPENDITURES	(27,781,665,257)	(33,109,425,901)	(39,645,066,250)	(47,635,661,077)	(57,384,243,130)	100.00	2.4
NET PROFIT/NET INCOME	30,324,564,994	35,493,012,412	41,686,738,008	49,210,362,404	58,463,608,635	100.00	2.3

Through 2019/2020, the s financial situation will be also very good but the claim ratio is gradually worsening because it is predicted at 65% (versus 44% in 2014/2015) but revealing a gradual worsening of the indicator towards 100%.

The same interesting information on the net income which is expected to recover the total expenses related to the same year during the upcoming five years revealing a very good profitability ratio estimated at 1.02 (versus 1.11 in 2014/2015).

At the end of five upcoming years, the total income are expected to be 2.0 times the 2014/2015 level , the total expenditures are expected to be 2.1 times the 2014/2015 level . the net income will be 1.9 times the 2014/2015 level and will continue to recover the total expenditures of 1 year, see all years 2015/2016-2019/2020 and the Financial Profitability Ratio higher than 1 for the entire period. The trend of the income statement reveals the similar increase for both income and expenditure and the net income which superior to the total expenditure during the upcoming five years.

Table 7. FIVE YEARS RSSB MEDICAL SCHEME STATEMENT FINANCIAL POSITION FROM 2010/2011 TO 2014/2015

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Proportion (%)	CAGR
TOTAL ASSETS	***70,406,114,609***	***106,389,331,581***	***124,275,705,862***	***155,243,754,434***	***175,833,242,609***	***100.00***	***0.27***
Long-term assets	21,528,623,259	43,427,702,243	61,012,319,924	61,909,911,022	69,877,506,595	40.77	0.39
Account receivables	40,149,593,704	58,353,947,580	55,063,995,076	85,587,849,049	85,819,577,701	51.41	0.24
Cash and Bank balances	8,727,897,646	4,607,681,758	8,199,390,862	7,745,994,363	20,136,158,313	7.82	0.46
TOTAL LIABILITIES	***70,406,114,609***	***106,389,331,581***	***124,275,705,862***	***155,243,754,434***	***175,833,242,609***	***100.00***	***0.27***
Share capital	1,179,070,491	1,179,070,491	1,179,070,491	1,179,070,491	1,179,070,491	0.002	-
Cumulative Reserves and Earnings	66,458,698,849	99,811,301,789	119,389,472,239	141,599,931,432	170,335,899,565	94.53	0.27
Accounts payables	2,768,345,269	5,398,959,301	3,707,163,132	12,464,752,511	4,318,272,553	4.53	0.59

At the end of 2014-2015, long-term assets, account receivables, cash and bank balances represented respectively 40.77% , 51.41% and 7.82% of total assets (RWF 175,833,242,609) while share capital, cumulative reserves and earnings, accounts payables represent 0.002% , 94.53% and 4.53% respectively of total liabilities (RWF 175,833,242,609).

Table 8. TABLE 8. WORKING CAPITAL FROM 2010/2011 -2014/2015 AND 2014-2015/2010-2011

	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2011
Working capital by upper side	46,109,146,081	57,562,670,037	59,556,222,806	80,869,090,901	101,637,463,461	2.20
Working capital by lower side	46,109,146,081	57,562,670,037	59,556,222,806	80,869,090,901	101,637,463,461	2.20

The working capital from 2011 through 2015 was respectively RWF 46,109,146,081, RWF 57,562,670,037, RWF 59,556,222,806, RWF 80,869,090,901 and RWF 101,637,463,461.

The 2.20 at the last column (2014-2015/2010-2011) end is the coefficient issued of the 2014/2015 Year Working Capital over the 2010/2011 Year Working Capital meaning that it was 2.2 times that of the base Fiscal Year 2010/2011 which indicates an impressive increase over the period.

For the same Financial Year 2014-2015, the working capital is calculated at RWF 101,637,463,461 (1,179,070,491+170,335,899,565) - (69,877,506,595) by the upper side of the Balance sheet and at the same amount by the lower side of the Balance sheet worth RWF 101,637,463,461 (85,819,577,701 + 20,136,158,313)-(4,318,272,553).

The working capital amounting to RWF 101,637,463,461, is estimated sufficient to recover over 4 times (4.33) the total expenditures of the year 2014/2015 (101,637,463,461/23,460,963,913) equal to 4.33 times the total expenditures of the year 2014/2015.

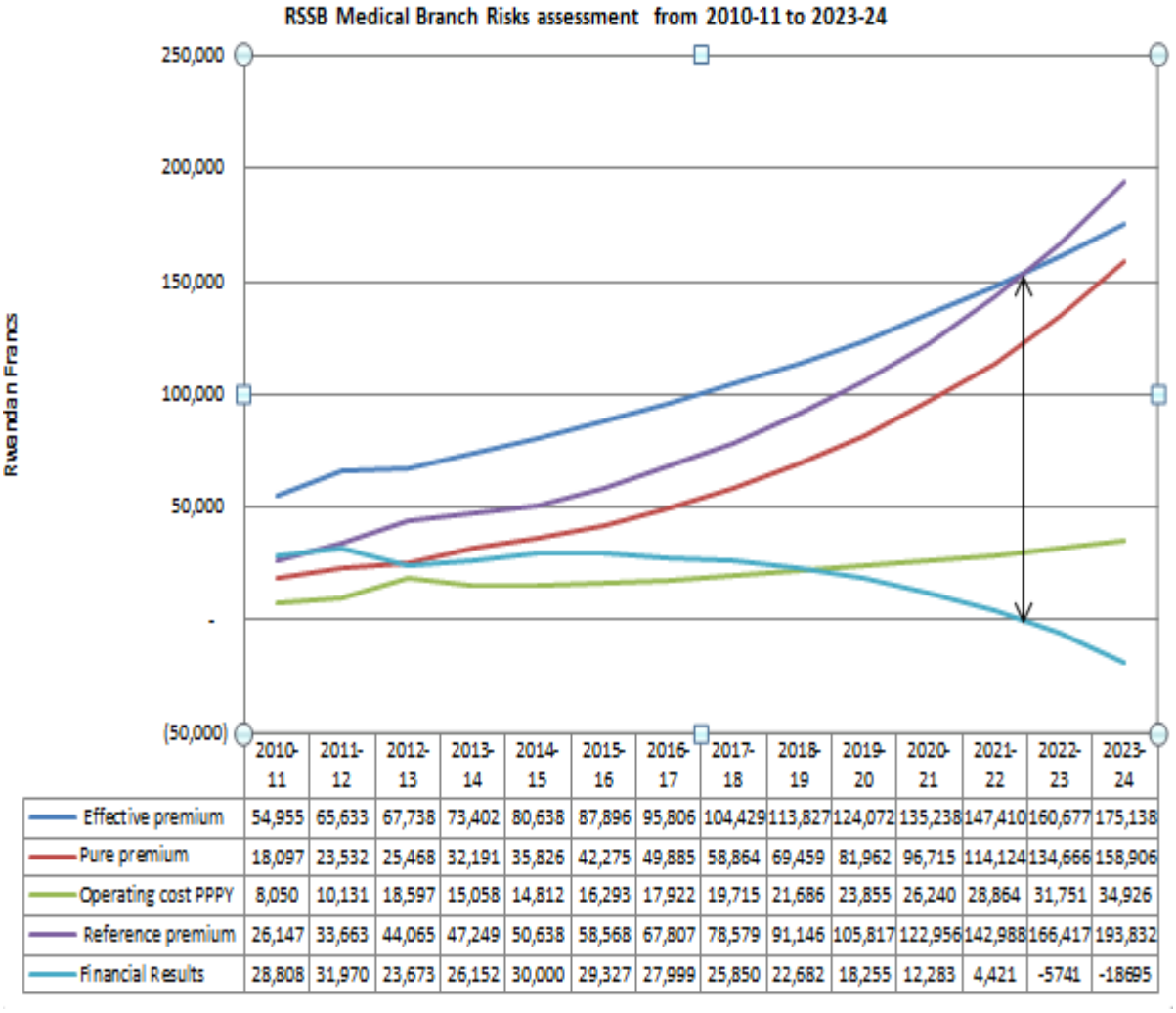
Therefore, this reflects improved existing comfortable financial status of the scheme with a continuous positive evolution as noticed in this part of the balance sheet whereby at the end of financial year 2014/2015, the working capital was 2.2 times compared to the financial year of 2010/2011.

If one could only refer to above findings of working capital on a 4 year period taking also into consideration the projections of income statement on the 5 upcoming FY 2019/2020, RSSB Medical Scheme financial viability could appear as comfortable since projections give a very good financial picture of the scheme.

It should be naïve to limit the analysis at this step of income statement and working capital analysis without analysing the RSSB Medical Scheme risks which are analysed through effective premium, claims ratio, pure premium and reference premium.

As the RSSB Medical Branch financial sustainability depends on the above risks as a health insurance institution, the study has proceeded to assess them in the long run. The figure below illustrates their respective trends from 2010 to 2024.

Figure 3 . RSSB MEDICAL BRANCH RISKS ASSESSMENT FROM 2010/2011 TO 2023/2024



	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Effective premium	54,955	65,633	67,738	73,402	80,638	87,896	95,806	104,429	113,827	124,072	135,238	147,410	160,677	175,138
Pure premium	18,097	23,532	25,468	32,191	35,826	42,275	49,885	58,864	69,459	81,962	96,715	114,124	134,666	158,906
Operating cost PPPY	8,050	10,131	18,597	15,058	14,812	16,293	17,922	19,715	21,686	23,855	26,240	28,864	31,751	34,926
Reference premium	26,147	33,663	44,065	47,249	50,638	58,568	67,807	78,579	91,146	105,817	122,956	142,988	166,417	193,832
Financial Results	28,808	31,970	23,673	26,152	30,000	29,327	27,999	25,850	22,682	18,255	12,283	4,421	-5741	-18695

However, the Figure 3 on risk management assessment reveals the opposite because in the mid term, and precisely during the FY 2021/2022 , the reference premium which is equal to medical claims (medical expenses) plus administrative cost per insured per year will reach the effective premium (individual contribution premium) supposed to cover them by 2022/23. In addition, the reference premium will surpass the effective premium and the first financial gap is observed meaning that after 2022/2022, whereby a negative breakeven will be observed and consequently the scheme will be obliged to complement RSSB Medical Scheme yearly revenues by its cumulative reserves..

Therefore, decision-makers are invited to review the RSSB Medical Scheme policy paying more attention while adopting and applying cost containement measures in the objective of limiting unnecessary health service utilization as well as other abuses. beneficiairies expenses related to expensive health providers as suggested above. According to qualitative results issued of

interviews, costescaltion should be the main cause of the observed financial viability decline. This may be caused by the providers and/or patients' behaviors towards use of the services, or can be due to high administrative costs incurred during implementation. Most often, providers knowingly choose to use expensive management protocols and patients opt for expensive health care. In both cases, the actors in supply and demand for health services know well that the insurance will pocket the bill.

4.2 Financial ratios for the fiscal year 2014/2015

The ratios calculated in health insurance domain are not different with other domains, but some particularity exist, requiring some clarifications and the researcher has presented and explained in Litterature and review for more clarity..

With regards to discussions, the researcher has limited them to qualitative ratios appreciation, comparing ratio standard value and observed value issued by the study.

The principal sources of data used in the calculation of the financial ratios are the statement of income and expenditure or income statement and the balance sheet, for the same period/end date.

The study findings have provided information about main components of the income statements and the financial position between 2010/2011 and 2014/2015.

The modeling has been done also to predict the future financial situation. However, these information obtained are not complete to state exactly on the financial viability of the RSSB Medical Scheme.

Therefore, the calculation of ratios as financial monitoring indicators helped to give a response to that concern in the objective of enabling a good assessment of the financial health of the scheme like for instance its capacity to meet its obligations to members and third parties at any given moment as well as its efficiency in revenue collection .

Many financial ratios are used by organizations in general. Those ratios most appropriate to Social health insurance and Community Based Health Insurance are analyzed by the study. Concerning our case, calculated ratios focused to the liquidity ratio, the solvency ratio, the claim ratio, the ratio of coverage of expenditures (cost recovery), the ratio of operating costs to income and the profitability ratio.

4.3. Ratios related to financial position fy 2014-2015

- **Solvency ratio**

The solvency ratio = Assets / Liabilities

This ratio should be equal to or higher than 1 for sound financial management. When the ratio is less than 1, the organization is termed "insolvent."

According to the findings of the study, It is estimated at 41, therefore excellent.

- **Liquidity ratio**

The liquidity ratio = Current assets (or short-term assets) / Current liabilities

If the ratio is higher than 1 it is good , it signifies that the scheme is in a position to defray its debts to the health care providers immediately if need be.

And our findings revealed 25, which is excellent

4.4. Ratios related to income statement 2014/2015

- **Claim ratio**

The share of total claims paid (amount) divided by total premium earned (amount) is called claims ratio (also known as Loss ratio);

The study findings reveal that the claim ratio is 44% which is excellent because it is less than 100%.

- **Cost recovery**

Total annual income divided by total annual expenditures.

This ratio is good when it is ≥ 1.3 meaning that total annual revenues (contributions plus other revenues) can finance total annual expenditures (medical expenditures plus operating costs & other) and generate a surplus worth 30% as reserve/safety margin. This ratio is estimated at 2.11 for 2014/2015 and will be 2.02 at the end of 2019-2020, illustrating an excellent stability and constancy in to recovering total medical expenses by total contributions only in the long term.

- **Profitability ratio**

Annual net annual income over (divided) by annual total expenditures.

The whole investments are returned/amortized, thus the return of the entire investment is achieved during one year only. For the the case of RSSB Medical Scheme the ratio is 1.1. This means that it took less than a year (1/1.1) to return (recover) the annual total expenditures. The ratio equal 0.5 indicate that the year running has permitted to amortizing /returning 50% of the invested annual total capital /annual expenses. To amortizing the invested annual total capital/annual total expenditures took less than a year for RSSB Medical Branch for the Year 2014/2015.

- **Ratio of operating costs to income**

The ratio of operating costs to income = Operating costs / income

In our findings Operating costs of the medical scheme are relatively high compared to the standard (5%).

This is explained by the fact that as time goes, all costs helping the good management of the scheme are becoming higher.

The study findings revealed 12% and 11% for the FY 2014/2014 and 2014/2015 respectively vs 5 % as limit acceptable.

The literature review shows that the operating costs made by different social and based community health insurances schemes are comprised between 5% - 12% (Sara Bennett, PhD et al. 2004). In CBHI system of Western Africa assisted by USAID - PHRplus, they spend 5%-10%, in OCDE (members) countries, they spend 5%-7% and in USA the health insurance sector spends in average 12% of total revenues what is qualified as too high by authors.

The same ratio of 12% has been calculated for RSSB Medical Scheme in 2013/2014, 11% in 2014/2015 are also to be qualified as too high.

Beside the findings issued by the ratios calculated from the balance sheet, by the income statement and the working capital, the deepened analysis indicates that the RSSB Medical Branch is very financially viable

-As the variation is positive on the two big items which financial viability rely on (have influenced the current financial viability), namely: cumulative reserves (the share capital remaining

unchanged) and accounts receivables, RSSB Medical Branch will continue to be financially comfortable in the long term.

All the financial ratios show that the RSSB Medical Branch financial viability is guaranteed in the mid term having contributed to current excellent financial health remain the same or improve during the period 2015-2021 from where the first embarrassing financial situation is revealed by the study.

Despite the impressive financial viability highlighted by the study still now, the RSSB Medical scheme is facing major challenges and inhibitors factors,according to/from interviews with cadre staff

Dynamic health care environment in terms of quality health care delivery, and consequently unavoidable high cost

Increasing quality health care seeking behavior from RSSB beneficiaries

New pathologies and diseases requiring more expensive qualified professionals

New expensive medical technology (equipment) for diagnosis, tests/exams)

New medicines (drugs) to treat them

Health providers behavior in terms of cost escalation as described above.

CHAPTER V: CONCLUSION AND RECOMMENDATION

5.1. Conclusion

All research specific objectives, and subsequently general objective have been attained and verified.

Findings of the research reveal an impressive RSSB Medical Branch financial viability from 2010/2011 to present but the financial sustainability is not guaranteed because the study reveals the first financial gap in the midterm and precisely from 2022/2023

According to the findings of the research", the research statement as defined by the study is confirmed.

The financial viability of the scheme is impressive but it lies on the consistent cumulated reserves and investments income which should finance the scheme and address eventual financial gaps in bad circumstances but not in the long term. Decision-makers and RSSB Seniors managers are invited to paying sufficient attention to study findings and recommendations.

Current findings should serve as relevant baseline indicators in the RSSB Medical Scheme financial monitoring and evaluation as well as raise awareness to policy-makers and decision-makers about hidden future RSSB Medical Scheme uncomfortable financial situation.

5.2.Recommendations

In the objective of reserving and improving the financial viability of the RSSB medical Scheme, the researcher recommends:

- Reinforce the verification system (team/pools) and setting a monitoring and evaluation system, establishing rigorous control/inspection and supervisory annual calendar;
- Introduce the biomedical electronic card as soon as possible in order to fight and prevent fraudulent cases;
- Register in the patient's file the full address including mobile phone number, district, sector, cell, village for a further verification in case of fraud or doubt;
- Establish a clearer definition of measures to be taken if a kind of abuse is detected and a regular dialogue between health providers and RSSB Medical Advisor;
- Adopt a rigorous financial management and especially compress other expenses.
- Apply a behavior communication change (BCC) strategy to RSSB Medical Scheme to avoiding expensive health facilities/providers and the later for avoiding escalation cost;

- Control electronically the migration in medical care for overuse/overutilization prevention of different health providers offering the same package of service by beneficiaries the same day.
- Install penalties' measures for payment refuse in case the whole invoice where overstated fraud is identified and proved (error > 10% of the total amount of the invoice)
- Introduce some of following classical strategies for cost control and cost-containment measures in health insurance sector
- Mandatory referring process or authorization by RSSB medical Committee for access costly health services, medical procedures, diagnostic and treatement exams;the same is true for using deemed expensive health providers like KFH except for this applying a discouraging co-payment;
- Capitation-based Provider payment Mechanisms (PPM): payment of a lump sum to providers for each patient registered with them obliges the provider to control costs and to avoid escalation cost.
- Floor or ceiling at each visit or hospitalization for again requiring the member to participate in additional costs and to behave less capricious about the disease and the extra cost.
- Conduct an actuarial study to update the former one dating 2012 in order to avoid, prevent and respond to risks and challenges facing the RSSB Medical Scheme timeseouly.
- Conduct a further prospective (longitudinal) study on the financial viability of the RSSB Medical Scheme to verify the concordance or the discordance of current findings with those registered really between 2015/2016 and following years (2015/2016 to 2025/2026).

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