Market Assessment Study for An Upcoming Hospital in Dakar, Senegal

By

Rima Agarwal

Dissertation submitted for the partial fulfillment of the

MBA Hospital and Health Management

Academic year, 2016-2018

The IIHMR University, Jaipur

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INSTITUTE OF HEALTH MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that **Rima Agarwal** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at HOSMAC India Pvt. Ltd., Mumbai from 5th February 2018 to 4th May 2018.

She has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific, and analytical.
The Internship is in fulfillment of the course requirements.

Iwish her all success in all her future endeavors.

Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur

16/5/18
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HOSMAC

No. HRD/HIPL/2018 Date: 4th May 2018

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Rima Agarwal** from IIHMR, Jaipur has successfully completed her **Internship Program** from 5th February 2018 to 4th May 2018 as an Intern in our **Management Consultancy Division**.

Ms. Rima Agarwal has satisfactorily completed the following Project:

1. **Market Assessment Study for an upcoming hospital in Dakar, Senegal.**

During her stay with our organization her conduct was good and she has worked sincerely on the projects assigned to her. The quality of her project work is extremely high, which has been very useful to our organization.

We wish her a good and bright future.

Yours faithfully,
For Hosmac India Pvt. Ltd.

Manisha Gawas
Asst. Manager- HR

HOSMAC INDIA PVT. LTD. MUMBAI

Dr. Abhishek Pawar
Principal Consultant

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "**Market Assessment Study for an upcoming Hospital in Dakar, Senegal.**"and submitted by **Rima Agarwal, MBA-HM(21); 0482** under the supervision of Dr. Ranjan Kumar Prusty for award of MBA in Hospital and Health Management in Health and Hospitals of the University carried out during the period from 5th February 2018 to 4th May 2018 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Rima Agarwal

Signature

Abstract

Market Assessment Study for an upcoming hospital in Dakar, Senegal

Author: Rima Agarwal

Background:

The project report is market assessment study of the healthcare sector of Senegal for an upcoming hospital in Dakar, Senegal. The study provides demographic, economic and health profile of Senegal, comparing it with its neighboring countries namely The Gambia, Mauritania, Mali, Guinea, Guinea-Bissau. The study describes the entire health system of Senegal, the healthcare indicators of the West African countries and burden of diseases prevalent in the region.

The study indicates the lower income background of the Senegalese population, the developing economy, the factors leading to the growth of the country making it the business hub of the entire West African region. It describes the healthcare scenario of Senegal, the major causes of death in the country and the proportional mortality caused by various diseases. The demographic profile and healthcare scenario of the Dakar region is discussed along with the competitor profile of the hospitals present in the Senegal.

Aim:

To study the healthcare market of Senegal to determine the feasibility for an upcoming hospital in Dakar, Senegal.

Objective:

- To understand the healthcare market scenario of Dakar, Senegal.
- To study the demographic profile, healthcare market and key competitor profile of the region.
- To suggest recommendation based on the data obtained and conclusion for the same.

Methodology:

A descriptive study was conducted for collection of primary data through interviews with the help of a semi-structured questionnaire, while the secondary data gathered through online research and the HOSMAC database. The sampling method used was simple random sampling and the data consolidated and analyzed through MS Excel.

Primary data:

Various healthcare facilities comprising of Multi-Specialty Hospitals were visited for conducting the interviews with the Administrators / Consultants.

Secondary data:

- Online research
- HOSMAC database

Limitation:

- Content analysis of both primary and secondary data was used to generate perspectives on the healthcare dynamics of the city.
- The study is based on the information/data received during the survey and correlations with the secondary data search.
- The survey conducted was limited to doctor's survey and institutional survey. The view of the patients visiting the health facilities are not considered in the study.

Results:

The healthcare sector of the country is dominated by the public sector through government owned regional and national hospitals. The no. of private hospitals in Senegal being only 2, and all the 9 national hospitals of Senegal being in Dakar. The bed availability ratio of Dakar is very low, at 0.72 and needs a threefold increase in the no. of beds to meet the WHO norm of 3.7 beds/1000 population. The primary survey also shows the drainage of a major bulk of the population outside Senegal for advanced healthcare services related to kidney ailments, high end gastroenterology, cardiology, transplants, and trauma.

Conclusion:

The high-end technology services for major multispecialty that the client wishes to provide has a huge demand in Dakar, and would service as a niche market for the client having a first mover advantage in to establish itself in Senegal. The service mix for a 150-bedded hospital with the focus areas consisting of revenue beds, service beds, thrust areas and advanced diagnostic services that could be provided by the client is suggested in the report. A proposed Facility Mix with SWOT Analysis of the entire scenario is provided with conclusions drawn from the same.

Acknowledgement

I would like to take this opportunity to firstly thank my parents for their undeterred faith in me. For allowing me to pursue my dreams and all along being the wind below my wings without whom neither my MBA nor this dissertation would reach its completion.

With immense pleasure, I express my heartfelt gratitude to **Dr. S.D. Gupta, Chairman of The IIHMR University, Jaipur**, and my mentor **Dr. Ranjan Kumar Prusty-Assistant Professor, The IIHMR University, Jaipur,** for having given me this opportunity to complete my dissertation.

I am extremely indebted to all the professionals at HOSMAC India Pvt. Ltd., Mumbai, for generously sharing their knowledge and precious time which inspired me to do my best during my internship. I am grateful **to Dr. Vivek Desai- Founder and Managing Director**, for providing me an opportunity to work as an intern in their organization. I would like to **thank Dr. Ambrish Sharma-Principal Consultan**t, mentor for the internship in the organization, for the constant guidance and support extended throughout the internship period. I would also like to thank **Dr. Kaustubh Sardesai** and **Dr. Abhishek Pawar** for providing me with valuable information and with constant help and encouragement during my study.

I would also like to thank Ms. Avni Shah, Mr. Niranjan Lele and all other staff at HOSMAC for their active co-operation during my internship and helping me learn at every stage of this internship.

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List of Abbreviations

WHO: World Health Organizations

USD: US Dollars

USA: United States of America

CAGR: Compound Annual Growth Rate

GDP: Gross Domestic Product

UK: United Kingdom

GNI: Gross National Income

ECOWAS: Economic Community of West African States

WAEMU: West African Economy and Monetary Union

FDI: Foreign Direct Investments

IMF: International Monetary Fund

ANC: Antenatal Care

CVTS: Cardiovascular and Thoracic Surgery

OPD: Out-patient Department

IPD: In-patient Department

ICU: Intensive Care Unit

HALD: Hospital Aristide Le Dantec

HOGGY: Hospital General De Grand Yoff

HEAR: Hospital denfants Albert Royer

MARKET ASSESSMENT STUDY FOR AN UPCOMING HOSPITAL IN DAKAR, SENEGAL

1. Introduction

The project report prepared is a market assessment study of the health system of Senegal, focusing on Dakar, for a client of HOSMAC India Pvt. Ltd wishing to establish a world class state-of-the-art tertiary care hospital in Dakar. The client owns a 5 acre land in Dakar Metropolitan region taken on lease from government in return for which the client is willing to providing a certain percent of his services to the low-economic population of Senegal at a subsidized rate. The study was conducted to assess the market for the same.

The study provides demographic, economic and health profile of Senegal, comparing it with its neighboring countries namely The Gambia, Mauritania, Mali, Guinea, Guinea-Bissau. The study describes the entire health system of Senegal, the healthcare indicators of the West African countries and burden of diseases prevalent in the region.

The competitor profile of the hospitals present in the Senegal has been discussed based on the services provided and their productivity.. However, various reports of international organizations reveal the degraded quality of these hospitals, being ill equipped and having unskilled medical and paramedical staff partly due to a huge no. of underfunded free care government schemes provided by the government.

The secondary data collected through the internet from websites various reports by international health organizations and that of ministry of health of Senegal. The client is desirous that the hospital not only serves to patients in and around the Dakar region, but also acts as a referral center for patients from the neighboring West African countries as well. A proposed service mix is provided considering the market for the same based on the data collected through the primary and the secondary research. The high-end technology services for major multispecialty that the client wishes to provide has a huge demand in Dakar, and would service as a niche market for the client having a first mover advantage in to establish itself in Senegal.

2. Aim

To study the healthcare market of Senegal to determine the feasibility for an upcoming hospital in Dakar, Senegal.

3.Objective

- To understand the healthcare market scenario of Dakar, Senegal
- To study the demographic profile, healthcare market and key competitor profile of the region.
- To suggest recommendation based on the data obtained and conclusion for the same.

4. Methodology

A descriptive study was conducted for collection of primary data through interviews with the help of a semi-structured questionnaire, while the secondary data gathered through online research and the HOSMAC database. The sampling method used was simple random sampling and the data consolidated and analyzed through MS Excel.

Primary data:

Various healthcare facilities comprising of Multi-Specialty Hospitals were visited for conducting the interviews with the Administrators / Consultants.

A semi-structured questionnaire with open and close ended questions was used for collecting information from administrators of different specialties with focus on the catchment area, drainage of population, competitor analysis based on productivity and tariff.

The sample represents data in terms of the following characteristics:

- Leading hospitals within the area with their service-mix
- Broad level tariff and Productivity
- Catchment area

Secondary data:

- Online research
- HOSMAC database

Limitation:

- Content analysis of both primary and secondary data was used to generate perspectives on the healthcare dynamics of the city.

- The study is based on the information/data received during the survey and correlations with the secondary data search.
- The survey conducted was limited to doctor's survey and institutional survey. The view of the patients visiting the health facilities are not considered in the study.

5. Secondary Research

The secondary data collected was through online research and through the HOSMAC database. While research reports concerning the healthcare scenario of Senegal was not available, nor were reports focusing particularly in the West African region. The consolidated report is based on the data obtained through various WHO and World Bank Report focusing on the entire healthcare of the African region from where data in relation to Senegal and its neighboring countries were obtained and analyzed.

5.1 Global Healthcare Scenario

The Global healthcare spending is projected to increase at an annual rate, from 1.2% in 2012-2016 to 4.7% in 2017-2021 with key driving factors being the increasing and aging population, advances in medical treatment, developing market and rising labor costs.

The per capita expenditure on healthcare varies from 61 USD in India to 8895 USD in USA.

Today, countries globally are making headway through communicable diseases through improved sanitation, better living conditions and increasing access to healthcare and vaccinations.

However, the battle with non-communicable diseases has just begun and seems far from over, with rapid urbanization, changing sedentary lifestyles, rising obesity levels adding fuel to the existing burden of non-communicable diseases even in developing markets. The global no. of sufferers from diabetes is going to increase from current 415 million to 642 million by 2040, with China and India having the largest no. of diabetes sufferers at around 114 million and 69 million, respectively.

The global healthcare spending is expected to grow at a CAGR of 4.3% from 2015-2020, while that of middle East and Africa expected to grow at 4.2%. However, the healthcare spending varies for countries. United States has the largest contribution of its GDP towards healthcare expenditure at 16.9% followed by Switzerland at 11.5% while Senegal stands at 4.2% healthcare expenditure still higher than India.

The percent of government and the private expenditure in healthcare is also incongruent across nations, with United States having 21% private expenditure on health, UK having 57%, India and China having 86% and 78% private expenditure on health respectively while Senegal having 62% of private expenditure in healthcare.

The per capita health infrastructure of Senegal at 96 USD is also comparatively on the lower side when compared to most of the countries like United States, UK, Brazil.

5.2 African Healthcare Scenario

Sub Saharan Africa accounts for 11% of the global health population and carries 24% of the global disease burden. However, it accounts for only 1% of the global health expenditure. Very few countries of the region can spend 30-40 USD per person per year, the amount minimum necessary for basic health care as suggested by WHO. Despite funding from various national and international organizations, more than 50% of finance for healthcare expenditure comes through out-of-pocket expenses, i.e., from a population consisting of largely lower economic background. However, in recent years with increased political stability in the region, there is increase in the stability of the macro environment of Sub-Saharan Africa. The region reported an average annual growth rate of 5% over the last seven years higher than the global average of 4.2% and is forecasted to increase further in the decade.

The GNI per capita of Africa showed an average annual growth percent of 10.4 in the last decade. The average real GDP of Africa rebounded from 2.2% in 2016, further to 3.6% in 2017, and is projected to grow at 4.1% every year in 2018 and 2019. The growth in West Africa is projected to accelerate to 3.6% in 2018 and 3.8% in 2019.

The government has taken significant measures to improve access to quality care. Healthcare sector has also seen emergence of private players due to the growing needs of the population, with an in-flow of both domestic and foreign investments. Recently, private sector is experiencing an increase in investment especially in the field of pharma, hospitals, and diagnostics.

However, the public sector’s lackadaisical performance, due to limited investments and sub-optimal utilization of available resources, has hampered its growth in Sub-Saharan region, which could be attributed to the prevailing perception of healthcare as more of a social expenditure rather than a growth enabler. Today, there is tremendous opportunity for the private sector to leverage the healthcare scenario of Africa, with ways to improve access and quality of care through the services provided.

5.3 Senegal

Senegal is a country in West Africa with a national territory of 196,722 km sq. It is bordered by Mali in the west, Mauritania in the north, Guinea in the south-east and Guinea-Bissau to the south-west. It completely borders The Gambia, except for a narrow coastline at the western region, which separates the southern region from the rest of the country.

Senegal has been subdivided into 14 regions, each being administered by a Regional Council. The country is part of the Economic Community of West African States(ECOWAS) a regional economic union of fifteen countries located in West Africa which promotes economic integration and regional peace and stability.

Senegal's population is estimated at 15.3 million in 2016 with people under the age of 24 representing more than 60% of the population. It ranked 147th in World Banks's Doing Business Report, 2017 for ease of doing business, a six-position improvement from 2016 for being one of the top world's business reformers and business environment improvers. The government of Senegal, has prioritized efforts to smooth the business climate for welcoming foreign investments in one of the fastest growing economies in Africa.

Areas that need urgent attention include health and basic education, for which Senegal ranks 126th in World Economic Forum's Global Competitive ness report, 2016-2017. The country is a famous tourist destination and received more than 10 lacs international tourist in year 2015 from various countries.

Figure 1: Map of Senegal

5.3.1 Demographic Profile

Senegal is the second biggest country in the West African region based on population. Located on the western most region of the country with an elongated coastline Senegal is divided into 14 regions, with each region having its own regional council, governed by respective regional heads. The literacy rate of the country stands at 55.6% despite universal primary school enrollment. According to a Demographic and Health Survey in 2011 showed only 54% of the school age children were attending primary school, while 28% of them rolled on to secondary school. Further, the Gender Parity Index (for females to males) of students attending primary school was 1.07 while those attending secondary school stood at 0.93 suggestive of more girls being likely to join primary school, however, more boys than girls continue towards secondary education.

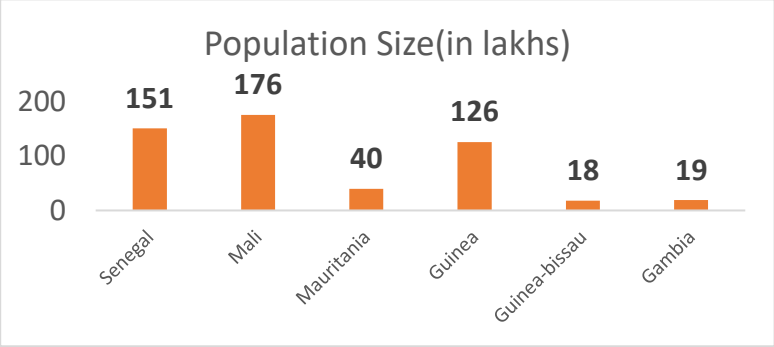


Figure 2: Population Size (in lakhs)

The chart shows the population size of Senegal along with its neighboring countries. Senegal is the second largest country with 15.1 million population in the West African region followed by Mali having 17.6 million population. Guinea with 12.6 million population has larger population than the rest of the countries. While Mauritania has a population of 4 million people, Guinea-Bissau and Gambia have a population of 1.8 million and 1.9 million respectively.

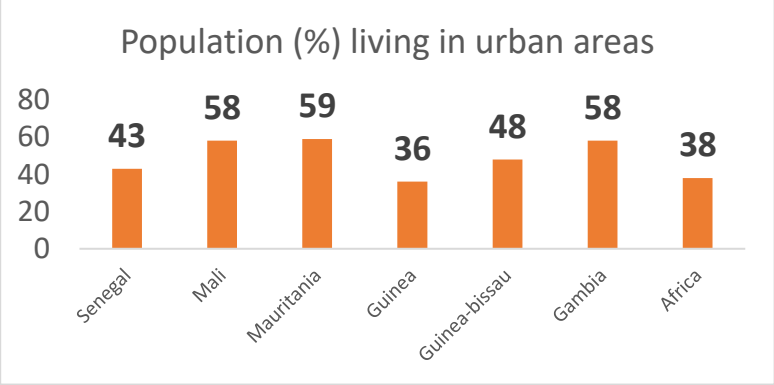


Figure 3: Population (%) living in urban areas

The chart shows the percentage of population living in urban areas of Senegal and its bordering nations. The conglomeration of the urban population in Western region of Africa is comparatively higher than that of average percentage of 38% of urban population living in Africa, excluding Guinea having 36% of urban population. Gambia and Guinea-Bissau having lower population than Senegal have higher percent of urban population of 58% and 48% respectively. Mauritania has the highest percent of urban population in the West African region with 59% followed by Mali with 58% of urban population while Senegal has 43% of its population living in urban areas.

There is an increase in the urban population of Senegal from 23% in 1960 to 44% in 2016. Senegal's economic, political, and industrial capital is Dakar located at the western most tip of the country. Dakar city is the most developed city of the Dakar Region and is home to all the international and national organizations. Almost 80% of the urban population of Senegal is in Dakar.

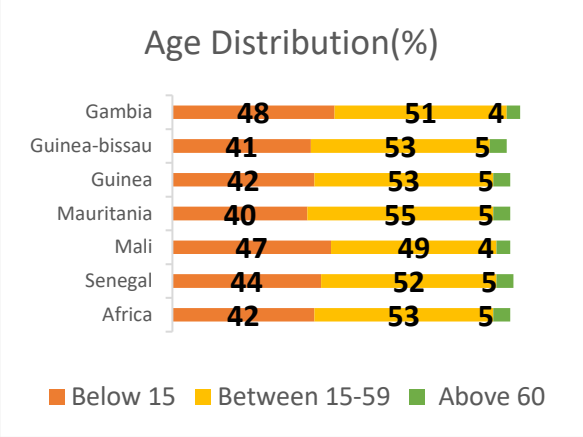


Figure 4: Age Distribution (%)

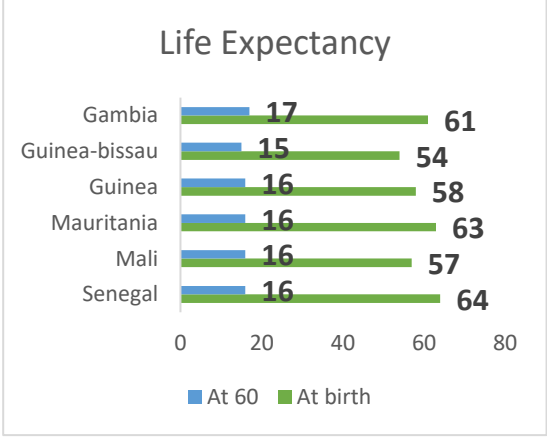


Figure 5: Life Expectancy

The chart shows the age distribution of the population of Senegal and its bordering countries based on the % of the population categorized as those below 15 years of age, those between 15-59 and those age above 60, while the life expectancy chart shows the life years to be expected at the time of birth and at the age of 60.

The chart is suggestive of the fact that almost 60% of the population being under the age of 40 in Senegal. It has a young population with 44% of the population being below 15 years of age having a life expectancy of 64 years at time of birth. However, the life expectancy reduces from 64 to 16 from the time of birth to when individual reaches the age of 60.

5.3.2 Economic Profile

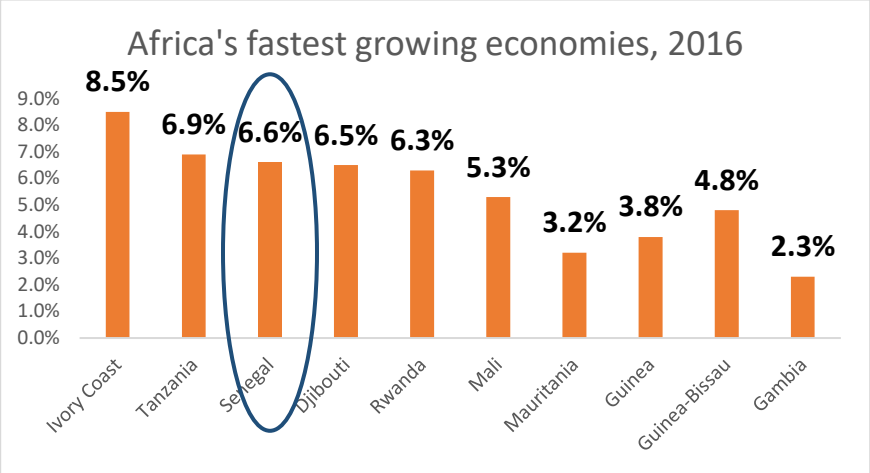


Figure 6: Africa's fastest growing economies,2016

The chart shows the percent of annual GDP growth of countries in Africa. It compares the annual GDP growth of Senegal with that of the leading five economies of the country along with comparing the growth of the economy of Senegal with its bordering nations.

Senegal is the fastest growing economies in Africa, only behind the Ivory Coast and Tanzania with an annual GDP Growth of 6.6%, while Djibouti and Tanzania shadow Senegal with an annual GDP growth of 6.5% and 6.3% respectively.

Senegal also boasts of being the second fastest growing economy in the West African region after Ivory Coast. Senegal is economically stronger than its neighboring countries due to a diversified industrial base and well-defined infrastructure making it the economic hub of the region. Guinea-Bissau follows Senegal at a growth rate of 4.8% only behind Mali at 5.3%. Gambia ranks lowest compared to other West African countries with 2.3% of annual GDP growth.

Profile	
GDP (current US$) (billions)(2016)	14.68
GDP growth (annual %)	6.6
GNI per capita, PPP (current international $)	2480
Total expenditure on health as a % of GDP (2013)	4.2
Per capita expenditure on health (PPP in $)(2013)	96.0
Govn. Expenditure (%) of Total Health Expenditure	38

Table 1: Economic profile

The table shows the economic profile of Senegal with the GDP in USD, the annual growth percent of GDP, the GNI per capita of Senegal. The table also shows the data for the total expenditure of health in Senegal as a percent of GDP and per capita expenditure on health by the Senegalese population in 2013.

The GDP of Senegal in 2016 was 14.68 billion USD with an annual GDP growth percentage of 6.6%. While, the total expenditure on health as a percentage of GDP is 4.2, the percentage of government expenditure of the total health expenditure stands at 38%, while the private sector make up the rest 62% of health expenditure which is higher than most of the developed countries.

The industries contributing to growth of GDP of Senegal food processing, cement, mining, artificial fertilizers and chemicals, textiles, refining imported petroleum and tourism. India is one of the principal foreign market with 26.7% of exports.

Senegal is the economic hub of West Africa and Senegal has several trade agreements and benefits from preferential market access, including bilateral agreements with several large economies (China and the US).

Senegal is a member of West African Economic and Monetary Union(WAEMU) that works towards greater integration of the regions, while the objective of economic stability and growth is mirrored in its monetary policy. The policies are defined by the BCEAO, the regional central bank, with an aim of reducing inflation and maintaining a fixed exchange rate between the West African CFA franc and the euro. Following which, the exchange rate has remained stable since 2004, and currently, stands at an average value 509 CFA franc per USD.

Senegal ranked 147th in World Banks's Doing Business Report, 2017 for ease of doing business, a six-position improvement from 2016 for being one of the top world's business reformers and business environment improvers. Areas that need urgent attention include health and basic education, for which Senegal ranks 126th in World Economic Forum's Global Competitive ness report, 2016-2017.

Senegal adopted a development model, Emergent Senegal Model, in 2014 which focuses on inclusive growth and accelerates progress of Senegal towards becoming an emerging economy by 2035, for the development of health, drinking water and infrastructure development. IMF anticipates a stronger and a sustainable growth rate for Senegal in the upcoming years, between 7-8%, driven by local investments, FDI and exports. Thus, offering a competitive market for investments mainly based on its political stability, strategic geographic position, improving infrastructure and rising access to sub-regional markets with many international organizations and business already establishing their base in Dakar for operations across the West Africa.

5.3.3 Healthcare Scenario

Health Indicators	2000	2015
Life Expectancy at Birth(years)	58	67
Life expectancy at age 60 (years)	16	17
Maternal mortality ratio	480	315
Under-five Mortality Rate	137	47
Adult Mortality Rate	280	216

Table 2: Health Indicators

The table shows the increase in the life expectancy of the Senegalese population from 2000 to 2015 while the mortality rate has significantly lowered in that period for all age groups.
This is suggestive of the fact of the significant advancements of healthcare system of Senegal leading to increase in the longevity of life of the population, while the steady decline in the mortality rate shows the effectiveness of the healthcare scheme in the region.
The under-five mortality rate has reduced from 137 in 2000 to 47 in 2015 owing to proper antenatal and post-natal care provided to pregnant mothers and their neonates. Almost all (93%) pregnant women in Senegal receive some antenatal care (ANC) from a skilled provider (doctor, midwife, or nurse). However, the quality of care and service received is also important, only 73% of delivery occurs in any kind of a health facility while a skill provider assists only 65% of births. Women who live in the poorest regions of Senegal, like Kedougu, are least likely to receive assistance from a skill provider during the time of birth.

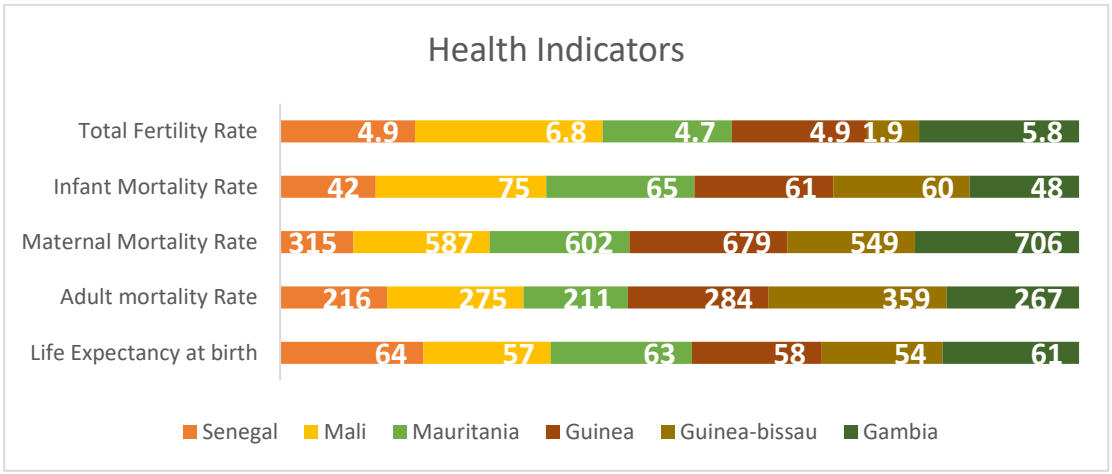


Figure 7: Health Indicators

The chart compares the different health indicators of Senegal with its bordering countries. The indicators of Senegal are evidently healthier when compared to other West African nations. While the life expectancy of Senegal is higher than other countries the mortality rate in Senegal across different age groups are also lower than those of its bordering countries. While the mortality rate of Senegal is 216 the mortality rate for Gambia stands at 267. The maternal mortality rate also shows a huge difference in the no. of deaths caused of women during the time of their birth in and around Senegal.

The fertility rate in Senegal is also lesser than its closest country, boundering its three sides, Gambia at 4.9 while the latter having a fertility rate of 5.8 which is shadowed by the largest populated country of the region, Mali, with a fertility rate of 6.8. The fertility rate of Senegal has been declining over the past 25 years from 6.4 children in 1986 to the current average of 5 children. The fertility rate if analyzed based on region is incongruent and varies from being 6.9 in Sedhiou region of Senegal to as low as 3.4 in the Dakar region.

This is suggestive of the need of advanced healthcare facilities in the entire West African region with an increasing demand of hospital beds in the region.

5.3.4 Disease Burden

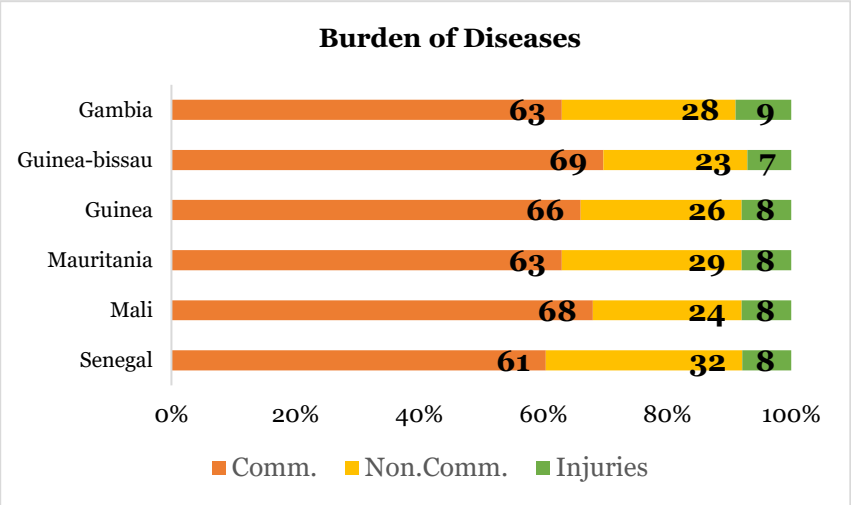


Figure 8: Burden of Diseases

The figure shows the burden of communicable and non-communicable diseases percentage prevalent in the West African region. The data is suggestive of the prevalence of communicable diseases ranging between 60% to 70% in the entire region, while the noncommunicable diseases range from 24% to 32%. The impact of injuries on the burden of diseases ranges from 8% to 10%.

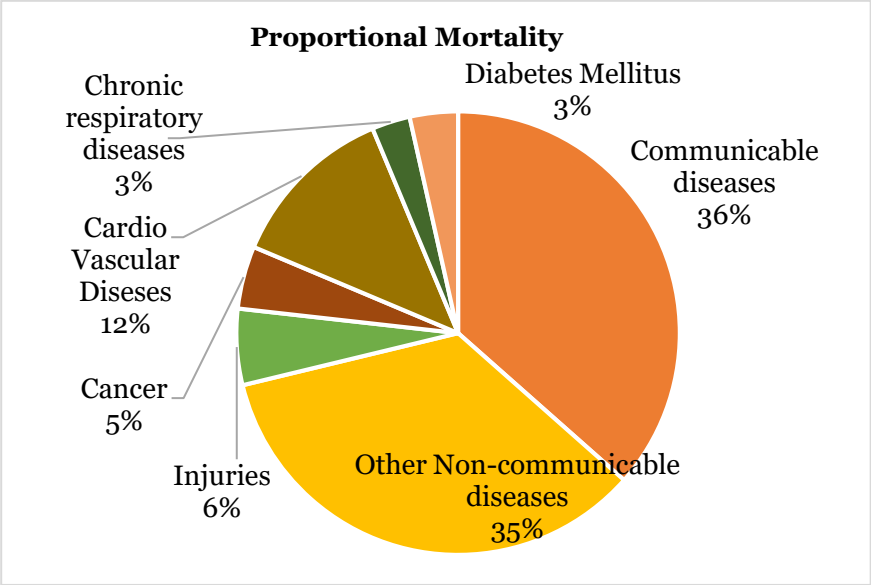


Figure 9: Proportional Mortality

The figure shows the proportional mortality or proportion of diseases leading to death in Senegal. While 36% of deaths in Senegal occurred due to communicable disease, injuries account for 6% of deaths in Senegal. Deaths caused due to cardio vascular disease account for 12% while cancer and injuries caused up to 5% and 6% of deaths respectively. Deaths caused due to diabetes mellitus and chronic respiratory diseases account for 3% respectively. Malaria and influenza remain the leading causes of death due to communicable diseases. The incidence of HIV in Senegal has reduced to 0.01 in 2015 due to efficiently run government health programs and schemes, however, the incidence rate remains higher for HIV in the neighboring countries of Senegal. The rate of deaths due to road traffic accidents amounted to 20 per 100,000 population in Senegal.

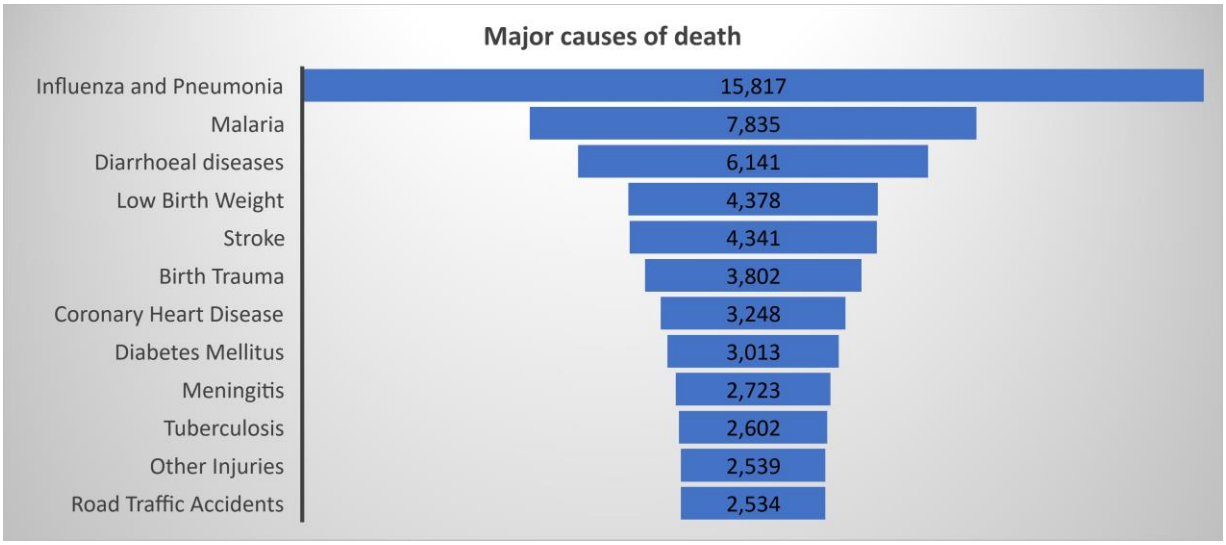


Figure 10: Major causes of death

The figure shows the major causes of death in Senegal in 2012 according to the World Bank and the total no. of people that died in that year because of that ailment. While influenza and malaria remain the leading causes of death, low birth weight in neonates, and diarrhea also remain the major causes of deaths in the region. Birth trauma and stroke also act as a major factor for mortality in the region. Cardiovascular diseases, diabetes mellitus and other non-communicable diseases and injuries make up rest of the chart. Road traffic accidents add to the fatality chart with approximate 2500 deaths per year in Senegal. Although Family Planning, MNCH, and malaria indicators have improved recently, poor nutrition is a growing problem in Senegal where 14 percent of children younger than age five are underweight.

5.3.5 Healthcare Infrastructure

Figure 11: Healthcare Infrastructure

The figure shows the distribution of the healthcare infrastructure of Senegal based on the sector they belong, i.e., the public healthcare institutions, the private institutions and those belonging to the armed forces.

The national healthcare system of Senegal is divided into three levels: regional hospitals, district health centers and health posts while the rural healthcare system have health points below the health posts. Some village sin the lowest economic regions of Senegal have health huts instead of health posts and are the solo centers for access of healthcare for the population living in the region.

Senegal has 13 regional hospitals located present in each region, while the 9 national hospitals are all located in Dakar region. The private healthcare sector mainly comprises of health clinics run by health professionals individually. The national army hospital is present in Dakar while it has base centers in each region of Senegal. The national hospitals act as a referral hospital for

patients across the regional hospital which themselves provide referral service for the health centers and health posts of the region.

The access to quality health care thus remain a challenge for many Senegalese population based on the low no. of healthcare facilities, lack of information and transport facilities, social and regional barriers. High out of pocket expenditure also acts a challenge to the government's aim of achieving Universal Health Coverage in Senegal.

5.3.6 Healthcare Human Workforce Comparison

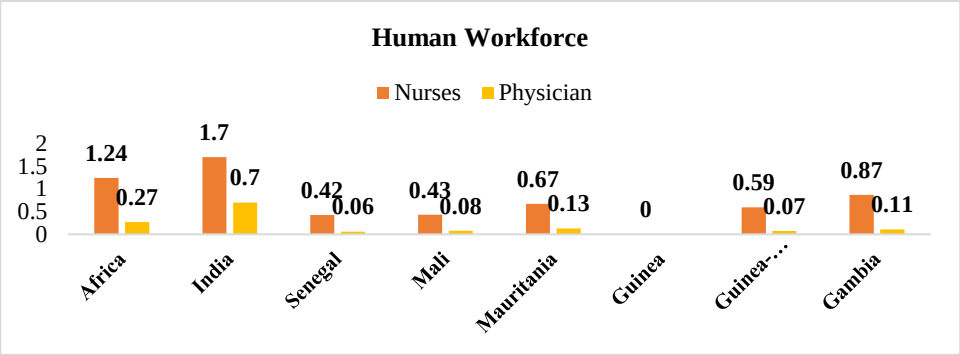


Figure 12: Human Workforce.

The figure shows the presence of human workforce in the healthcare sector in the Senegal and its bordering countries in comparison to the African average and that of India. Senegal has 0.06 physicians per 1000 population while the no. of nurses stands at 0.42 per 1000 population which is competitively lower than its neighbors and much lower than the African average. It lags the global median for the availability of health workforce and is also far behind the ranks of countries like India and China.

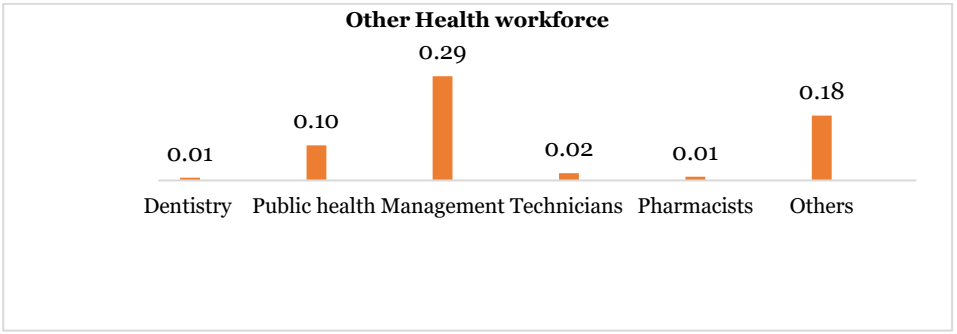


Figure 13: Other Health workforce

The presence of other health professionals in Senegal is also comparatively low. The private sector needs to play a critical role in bridging this gap. The study suggests that, country requires state run or private medical colleges to reduce the need-gap between number of health professionals available and number of professionals required in Senegal.

5.4 Dakar

5.4.1 Demographics

Figure 14: Map of Dakar

Dakar is the economic, political, and industrial capital of Senegal. It is located at the westernmost tip of Senegal and acts as a business hub of the country with its strategic geographic location and maritime coastline. It's bustling and cosmopolitan atmosphere makes it one of Africa's most important and vibrant cities. Dakar city is the capital of the Dakar region at the western region of Senegal.

The Dakar Region encompasses the City of Dakar, and all its suburbs along the Carpe Verde Peninsula, including the Metropolitan area of Dakar. The population of the Dakar city is 1.1 million while that of Dakar region was 3.1 million in 2013. The percentage of country population to the city stands at 23% with an annual population growth rate of 5.8% in 2012. The urban population of Senegal living in Dakar amount to 49%, while 70% of the urban areas of Dakar region are aggregated in and around the city of Dakar.

The sex ratio of the population of the city stands at 100.2% indicating the presence of more no. of females in the population in comparison to the male. Further,44.5% of the population of Dakar is the under the age of 20, while approximate 90% of the population is 60 or below the age of 60. In 2012, Dakar's operating revenues were FCFA36.5bn (US$73m) and its capital expenditure CFA11bn (US$22m), while the revenue of Dakar city increased by almost 40% during the same period. The contribution of Dakar city amounts to 55% of the GDP of Senegal.

5.4.2 Healthcare Scenario

Dakar Health system					
12 Hospitals	19 Health Centers	122 Dispensaries	41 Health Units	524 Pharmacies	692 Private Clinics

Figure 15: Dakar health system

The figure shows the elements making up the health system of Dakar. Currently, it comprises of 12 hospitals, constituting 9 national hospitals and 1 army hospital; 19 health centers and 41 health units spread across the region of Dakar. The region has 122 dispensaries, 524 pharmacies and 692 private clinics operating in reckoning.

The healthcare scenario in Dakar is dominated by the public sector with 9 out of 12 hospitals being national hospitals. The private sector mostly comprises of health clinics and units owned and run by physicians individually.

A 2012 world Bank Report suggests Dakar receives 71% of all government subsidies while they account for 48% of the hospital production. The data reviewed is suggestive of hospitals in Dakar serving as a referral center for patients from other cities in the country. The proportion of poor patients availing hospital facilities was 3%, while they make up 51% of the Senegalese population.

The only public university in Senegal providing medical education is University of Cheik Anta Diop of Dakar, while the language of education is French. St. Christopher Iba Mar Diop College of Medicine of University El Hadji Ibrahima Niasse (UEIN) is a private university in Dakar providing MD courses for various specialties and the duration of same depends on the type of speciality chosen by the candidate. It varies from 4 to 6 years. The public university of Dakar also provides a certificate course called Certificate for Special Studies. However, the duration of the courses differ from one specialty to another.

Foreign medical graduates wishing to practice in Senegal should first register themselves with National Order of Physicians of Senegal, and if they get equivalence of their medical degree from Ministry of Health, they are eligible to practice in Senegal.

There is however no entrance examination for foreign medical graduates who want to practice in Senegal, the eligibility criteria being Holder of Doctor of Medicine (MD) degree or equivalent to Senegalese basic medical qualification and being from a nationality that is in agreement with Senegal involving the right to reciprocal establishments of national doctors in that country.

Name of Hospital	Region	No. of Beds
Le Dantec(HALD)	Dakar	509
Fann Hospital	Dakar	313
Hoggy Hospital	Dakar	236
Abass Ndao Hospital	Dakar	178
HEAR (Albert Royer)	Dakar	118

Table 3: Major hospitals in Dakar

The table shows the list of the major hospitals operating in Dakar. Regarding private hospitals, it is evident that there is few, 4 by count, in the country. Le Dantec Hospital has 509 beds, followed by Fann hospital with 313 beds and Hoggy Hospital with 236 beds. Besides, other hospitals as well established in the region, as Army Hospital, Main Hospital, Pikine Hospital etc. HEAR(Albert Royer) is the only children's hospital in the country.

Parameters	
Population	3100000
Total number of Hospital beds (approx.)	2219
Bed availability ratio per 1,000 population	0.72
Number of beds required as per WHO norm of 3.7 beds/1000	11,470
Bed deficit	9,251

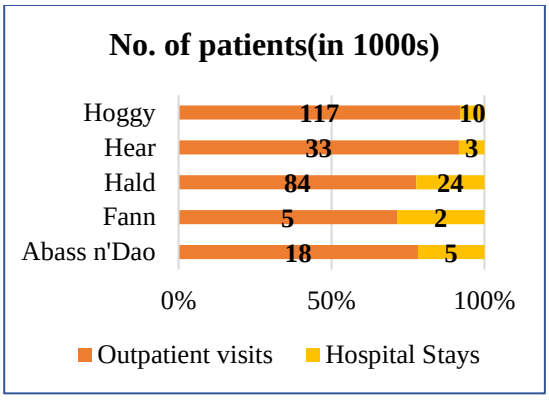
Table 4: Bed Deficit in Dakar

The table shows the parameters considers for the calculation of bed deficit present in the Dakar region. With an approximate of total no. of hospital beds in Dakar being 2219, with a population of 3.1 million the number of beds required as per WHO norm is 11,470. Thus, the region of Dakar has a bed deficit of 9,251. The bed availability ratio of the region being 0.72.

The data includes both private and public hospitals. However, the no. can be assumed to be higher as many beds would not be in a functional condition. The bed deficit turns out to be 9,251 considering the WHO norm with a bed availability ratio of 0.72.

Dakar being the largest city, having a considerably stronger healthcare market than the rest of the country, it caters to the need of population not restricted to Dakar but also the population of the

adjoining areas and of the country. Considering the patient drainage to the city, and the availability of health infrastructure, the bed deficit in the region considerably rises.
Further, a WHO report suggests the quality of these hospitals has also been on a decline partly due to unskilled medical and paramedical staff and partly due to huge number of underfunded free care government schemes.



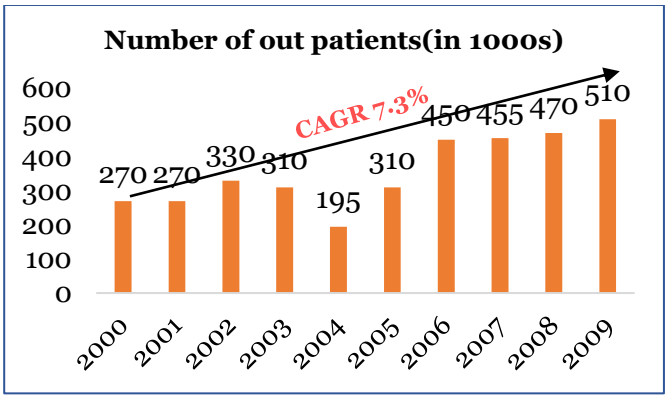


Figure 16: No. of patients in hospitals Figure 17: No. of outpatients

The figure shows the no.of outpatient visits and inpatients admitted in the major hospitals of Dakar in the year 2006. It is clear from the data of the inclination of patients visiting the hospital for outpatient treatment than favoring stay overnight. The patter remains similar for both public and private hospitals of Senegal giving a view of the consumption pattern of the population. The data also reveals in an increase in the no. of outpatients' visits from the year 2000 to 2009 at a CAGR of 7.3%. The no. of patients visiting hospitals in Dakar in 2018 would amount to 961,540 at the continued CAGR of the previous decade.
During the same duration, as suggested by the World Bank report, the no. of patients being admitted to the hospitals increased by a CAGR of 3% which is comparatively much lower than the no. of outpatient visits in the hospital.
The data is suggestive of the increasing inclination of the Senegalese population towards quality health seeking behavior with increase in no. of outpatient visits to hospitals rather than visiting private health clinics and health posts for health services. The other reasons for less increase in the no. of inpatient could be as for patients moving out of the country for in-patient treatment. While this may be possible for patients from higher income group patients belonging to low income background due to non-availability of the government funds or schemes, are unable to avail in-patient services in the hospital.

6. Market Survey Analysis

6.1 Competitor Profile

Sr. No.	Name of the Hospital	Operational Beds	Location	Type of Hospital
1	Fann Hospital	313	Dakar	Private Multi Super Specialty
2	Dantec Hospital	509	Dakar	Multi Super Specialty
3	Principle Hospital	304	Dakar	Multi Super Specialty
4	Yoff Hospital	236	Dakar	Private Multi Super Specialty
5	Abbas Hospital	178	Dakar	Multi Super Specialty
6	Ordre-de-Malte	50	Dakar	Multi-Super Specialty
7	HEAR Hospital	118	Dakar	Super Specialty

Table 5: Competitor profile

The competitor profiling have been prepared through data collected in the primary study conducted and the data presented in the form of graphs and tables is consolidated by using MS Excel.

Dakar sees the aggregation of all the national hospital in the country, while 2 of the 4 private hospitals of Senegal are in Dakar. Le Dantec is currently the biggest hospital in Senegal in relation to its no. of beds, while Principle Hospital is the National Army hospital of Senegal. Yoff Hospital, a formerly private hospital is currently a 230-bedded hospital providing multi-specialty services. HEAR Hospital is the only children's hospital in the region catering to the needs of the public as a single super specialty unit.

The hospitals are multi-specialties however, the number of specialties provided are limited. The infrastructure of these institutions is not well supported for providing advanced care and technology to the patients. The condition of most hospitals in Dakar could be summarized to be under staffed, in equipped and unavailable to the needs of the population.

	Fann hospital	Dantec Hospital	Principle Hospital	Yoff Hospital	Abbas Ndao Hospital	Ordre de Malte
Cancer		+	+			
Cardiology	+	+	+	+	+	
Dentistry	+	+	+		+	+
Dermatology		+	+			
Emergency				+	+	
ENT	+					+
Gastroenterology		+	+		+	+
Gynecology & Obstetrics	+	+	+	+	+	+
Infectious diseases	+					+
Internal Medicine		+	+	+	+	+
Nephrology		+	+			+
Neurology	+					
Opthalmology		+	+		+	
Orthopedics		+	+			
Padiatrics	+	+	+	+	+	
Psychiatry	+		+			
Surgery	+	+	+	+	+	+
Urology		+	+		+	+

Table 6: Competitor profile: Service Mix

The table shows the service mix of the hospitals in Dakar with the '+' icon indicating the presence of the service in the hospital, while for the services not provided by the hospitals the cells are left blank. Internal medicine, Gynecology and surgery are most common in the hospitals, Cardiology, dentistry, pediatrics, ophthalmology are popular services provided. The surgery unit of these hospitals perform minor surgeries and procedures while, Principle, Dantec and Fann are only hospitals providing proper surgical services in the country. Fann hospital is the only hospital in the region providing CVTS.

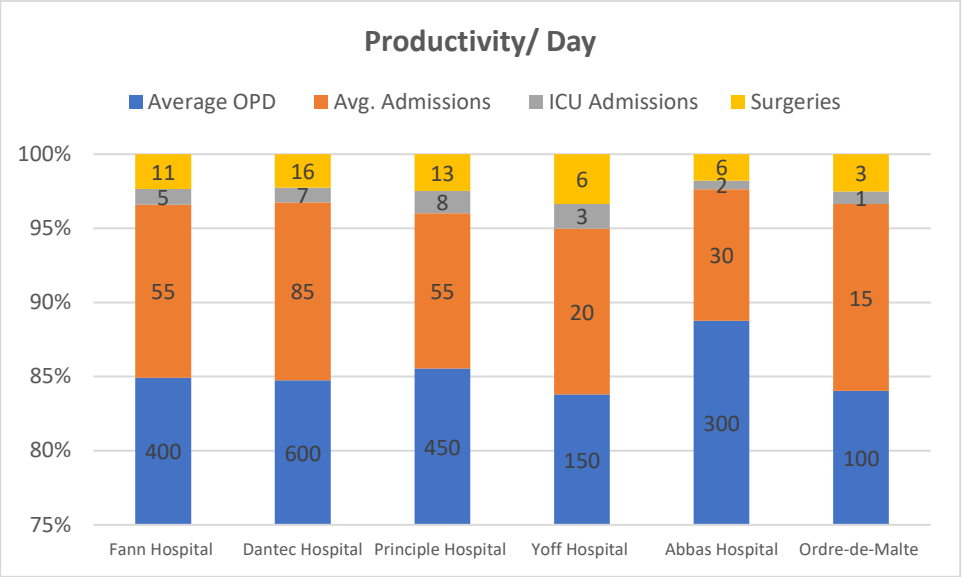


Figure 20: Productivity/ Day

The figure shows the productivity of the hospitals of Dakar under study based on the data collected through the primary survey and shaped under as the basis of average OPD/day, avg. admissions/day, ICU admissions/ day and no. of surgeries/day.

The average OPD per day is comparatively higher in the hospitals of Dakar than the average admissions per day, the bed occupancy rate of the hospitals being less, be it either private or public. Similarly, the no. of ICU admissions is also comparatively lower than the available no. of beds for critical care.

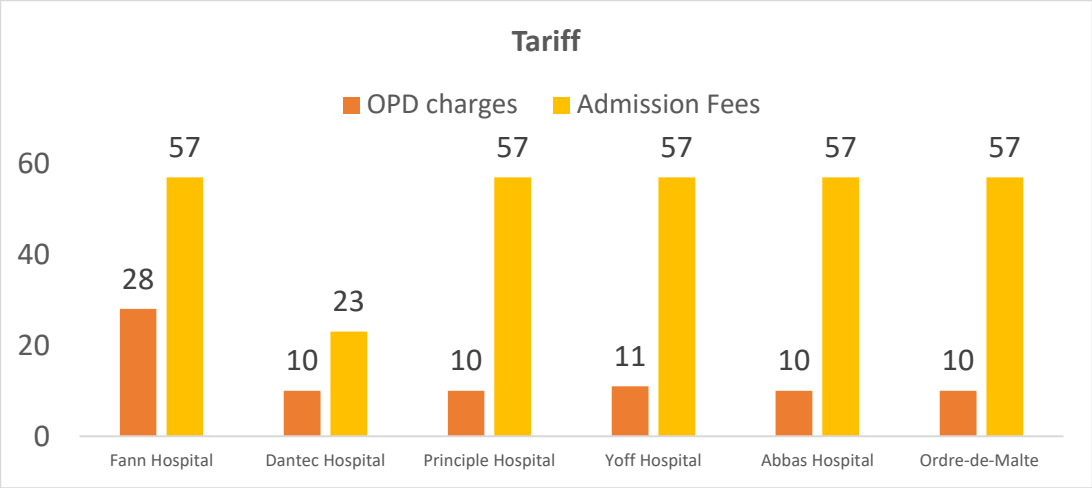


Figure 21: Tariff

The figure shows the average tariff for OPD and admission fee that are charged by the surveyed hospitals. Dantec Hospital has lower charges for outpatient services and admission being a public hospital, however, the no. of admissions/day though comparatively higher is still very less compared to the high no. of outpatients visiting the hospital. This could be suggestive of either a

degradation of quality services provided by the hospitals, or the unwillingness of the patients to receive inpatient care at these hospitals who seek quality treatment outside of Senegal.

6.2 Catchment Area

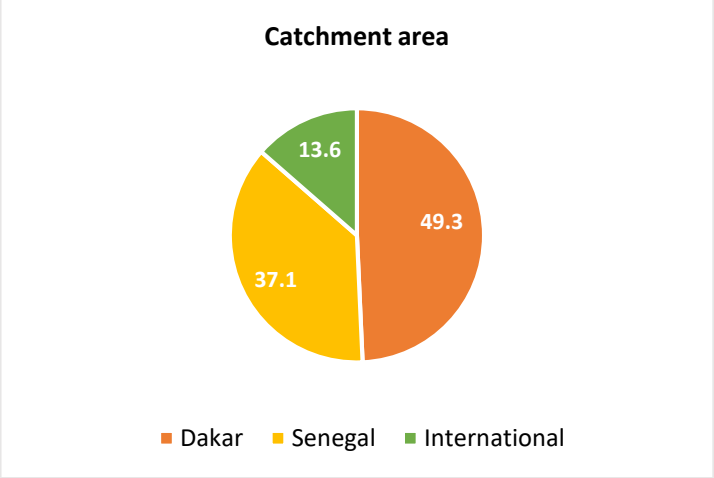


Figure 22: Catchment area

The figure shows the distribution of population visiting the hospitals in Dakar based on the location. While the primary catchment area is Dakar with 49% of patients, patients from other regions of Senegal and international patients form the secondary catchment area with a 37% and 14% of contribution to the catchment area respectively.

Dakar being the largest city, having a considerably stronger healthcare market than the rest of the country, cater to the need of population not restricted to Dakar but also the population of the adjoining areas and of the country. Around 49% of patients visiting hospitals in Dakar are those from the Dakar region, in and around the city, while patients from Senegal comprise ~37% of the total visiting population whereas the Dakar hospitals cater to an average of 14% of international patients visiting Senegal.

Dakar is a medical tourism destination for many African countries having a comparative advantage on costs, quality, availability, and accessibility of healthcare services. The public health system in the neighboring countries of Senegal are in a state of crisis with under resourced and overburdened staff. While modern healthcare facilities are virtually non-existent in Guinea-Bissau, Dakar acts a profitable destination for many from Guinea, then to travel to Conakry (the capital) seeking healthcare services.

However, the data revealed a high number of the wealthy middle class and high-class public moving abroad for availing treatment for super specialties for which advanced healthcare services and specialist diagnosis are not available in the country. With the lack of availability of required services in the region, the patients are referred to hospitals in France, Europe. However,

there is also a considerate no. of patient drainage to South Africa, India, Nigeria, Kenya, France, and other European countries.

6.3 Paying Capacity

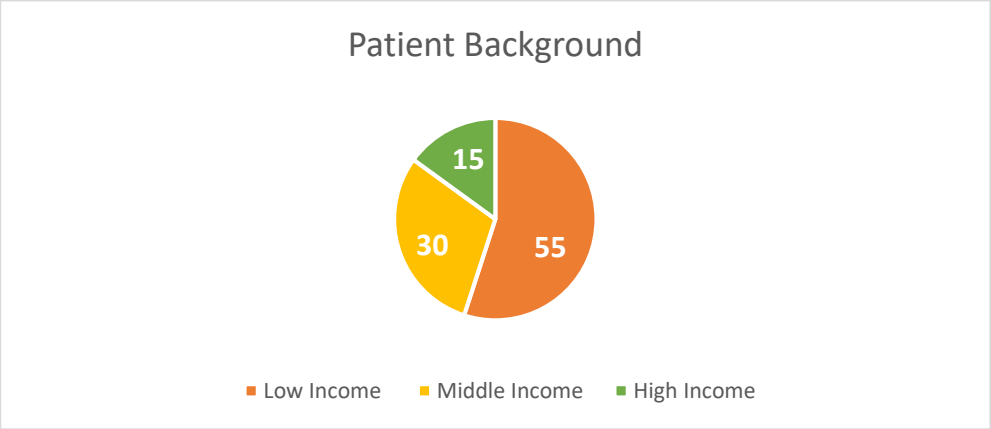


Figure 23: Patient Background

The figure the distribution of the population availing healthcare service in the hospitals based on their economic background, namely dividing them into those belonging to the low-income population, those to middle income population and those coming from high income population. The primary data shows 55% of the patients visiting the hospitals in Dakar to be belonging to the low-income group, while the middle and high-income population availing services in Dakar were 30% and 15% respectively. The less percent of high income population visiting the hospital is in correspondence to the comparatively less no. of inpatients in the Dakar hospitals than the no. of patients visiting OPD.

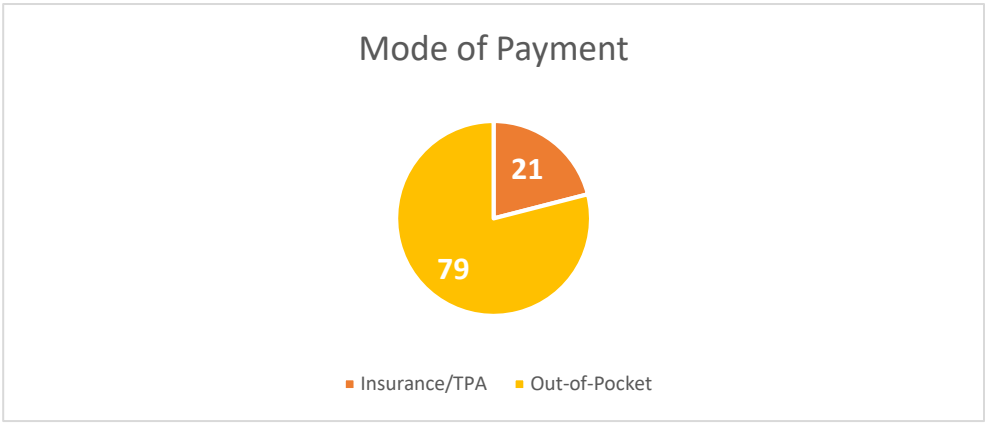


Figure 24: Mode of Payment

The figure shows the made of payment of the patients in the hospitals surveyed. The data is suggestive of the paying capacity of the population visiting the hospital for treatment. The comparatively higher no. of low income population availing services suggest the demand in the country for quality delivery of healthcare service through physical infrastructure and trained human resource. The percent of high income population availing healthcare in Dakar is

comparatively less than the aggregation of urban population in the city, suggestive of the drainage of the population from Senegal to abroad for medical tourism.

7. Recommendation

7.1 Service Mix

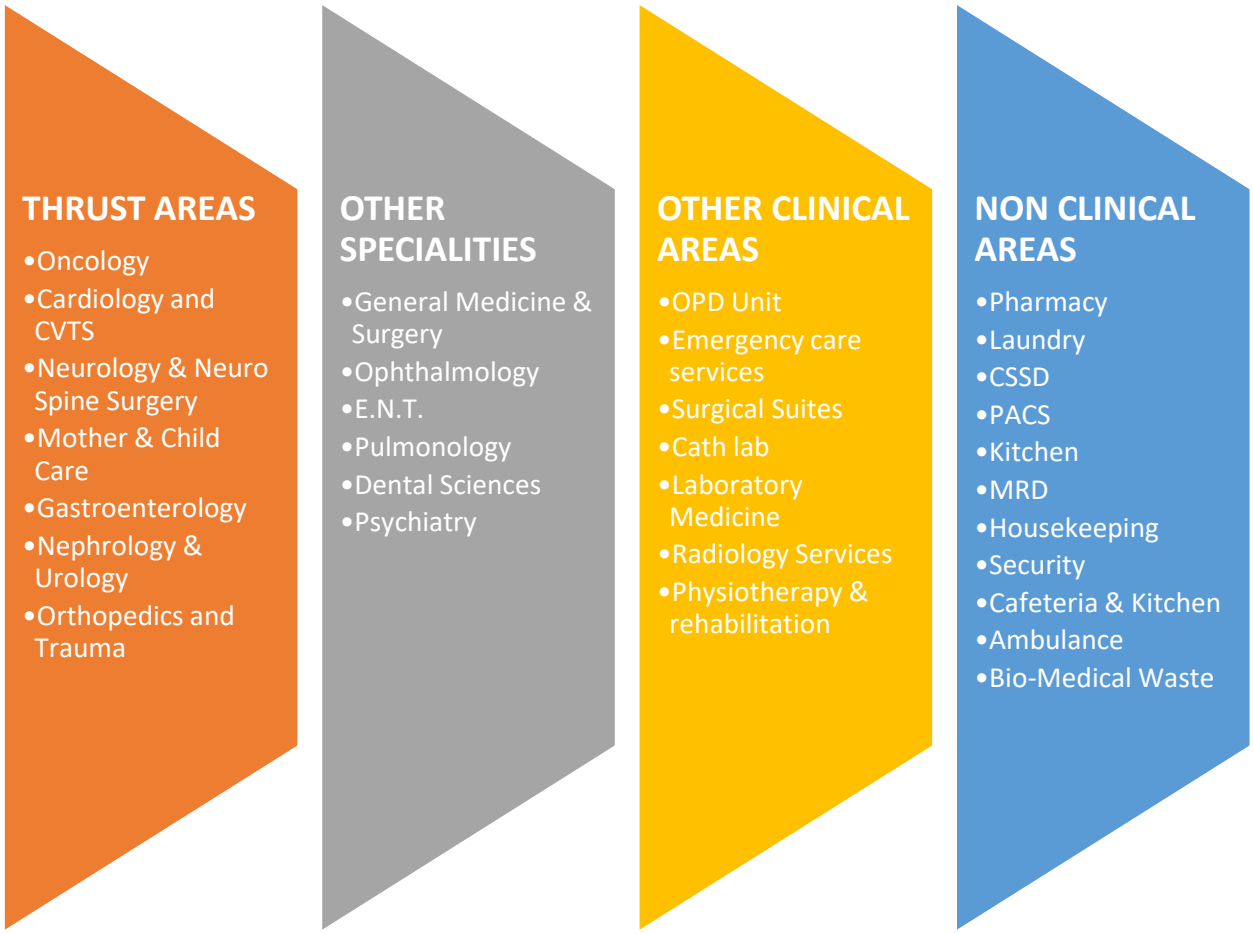


Figure 25: Service mix

7.2 Facility Mix

Critical Care Beds	**38**
MICU	10
SICU	10
PICU	8
HDU	10
In-Patient Beds	
Deluxe Room (1 in 1)	20
Twin Sharing (2 in 1)	28
General Wards(8 in 1)	64
Sub Total: Revenue Beds	**150**
Service beds	
Emergency Beds	5
Cath lab recovery beds	2
Chemotherapy Beds	4
Ambulatory / Day Care Beds (Medicine)	10
Dialysis beds	6
Pre OP - Surgical Suite	5
Post OP - Surgical Suite	5
Sub Total: Service Beds	**37**
TOTAL Beds (Revenue+service)	**197**

OPD Rooms	**20**
Operation Theatres	**8**
Procedure Suite	
Cath lab	1
Endoscopy Suite	2
Radio Imaging Lab	
CT Scan	1
MRI	1
PET CT	1
X-Ray	2
Portable X-Ray	3
BMD	1
CR System	1
Ultrasound with Color Doppler	1
Portable - USG with Color Doppler	2
Mammography	1
Pathology Lab	
Biochemistry, Hematology, Clinical Pathology. Histo- pathology, Serology, Microbiology	
Blood Bank	

Table 7: Facility Mix

7.3 SWOT Analysis

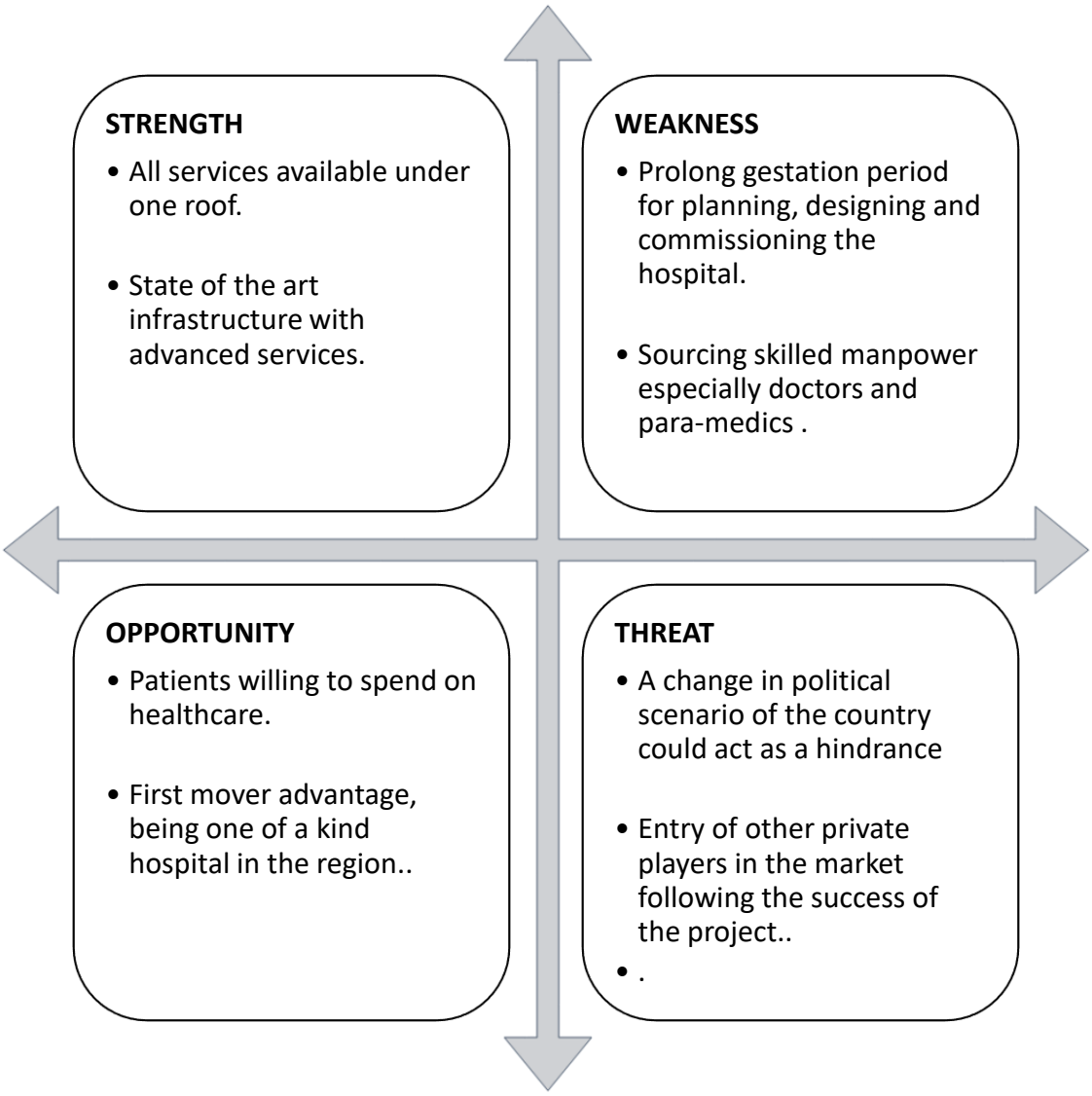


Figure 26: SWOT Analysis

7.4 Conclusion

"Senegal currently offers a stable political environment, a favorable geographic position and strong institutions with growing opportunities for foreign investment. Dakar with its attractive geographical position can act as a center of referral, with advanced technology to deliver quality services in the region.

The health system of Senegal is traditional with approximately 80% of health institutions comprising of health centers and health posts distributed around the country while tertiary health care centers being located in capital region of the country. The public sector has dominance over

the health sector with the private sector comprising of primarily single specialty clinics and private clinics by health professionals. Hospitals in the Dakar region caters to a population of around 3.1 million and witnesses high no. patients visiting its hospitals from other regions of Senegal along with its neighboring countries.

The no. of patients availing medical tourism in Senegal and those moving out for the same act as a target population for the client wishing to establish a state-of-the-art tertiary care hospital in Dakar The proposed 150 bedded hospital has all the major specialty not available in the region and will help enhance the overall healthcare in the region, The client would have a first mover advantage with the introduction of advanced technology in the country along with having patients willing to pay for enhanced care facilities. The state of the art infrastructure and advanced technology with the availability of quality service at a affordable cost will serve as a critical success factor for the hospital.

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