# THE AFRICAN SOCIAL DEVELOPMENT INDEX

(Mobile Application)

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Master's thesis
December 2018
Master Degree in Information Technology Engineering

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## ABSTRACT

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Mobile Application

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The ASDI follows a life-cycle approach recognizing that people can face different forms of exclusion at different stages of life. As such, the Index aims at estimating the extent of human exclusion in six key dimensions of wellbeing – Survival, Nutrition, Education, Employment, Means of subsistence, and Decent life – over time and disaggregated by gender and location to capture the exclusion within countries and across population sub-groups. The results of the ASDI are key to identify the drivers of exclusion in each country and map out successful policies to assist in reducing exclusion, both at national and sub- national levels. This will help member States in devising more inclusive social policies and support the domestication in national development plans.

(ASDI Measuring Human Exclusion for Structural Transformation, 2015)

The objective of this thesis is to design and develop a proposed system to make ASDI application easily accessible to be a knowledge platform that is available via Mobile devices for Android OS, to raise awareness, advocacy and outreach purpose .

**Contents**

**Glossary**

| | |
|---|---|
| ASDI | African Social Development Index |
| GDP | Gross Domestic Product |
| MDG | Millennium Development Goal |
| MSF | Médecins Sans Frontières |
| SDG | Sustainable Development Goals |
| REST | Representational state transfer |
| API | Application Programming Interface |
| JS | Java Script |
| ER | Entity Relation |
| GUI | Graphical User Interface |
| UI | User Interface |
| UN | United Nation |
| UNDP | United Nation Development Program |
| UNECA | United Nation Economic Commission for Africa |

# 1. INTRODUCTION

Although, The Continent Africa is benefiting from unprecedented growth for the last fifteen years, in some of the countries the growth is scaled 11 percent per year, the continent is struggling to maintain a balanced wealth distribution across its people. WHO states the 50 percent of the continent population is under the age 25 which makes the young people to be the most affected by it. What do we refer to when we talk about social exclusion?

## 1.1 Social Exclusion

Exclusion consists of dynamic, multi-dimensional processes driven by unequal power relationships interacting across four main dimensions—economic, political, social and cultural—and at different levels including individual, household, group, community, country and global levels. It results in a continuum of inclusion/exclusion characterized by unequal access to resources, capabilities and rights which leads to health inequalities", (Popay and others, 2008, p. 2).

Social exclusion has been defined in European documents such as the 1992 second Annual Report of the European Commission's Observatory on National Policies to Combat Social Exclusion, "in relation to the social rights of citizens…to a certain Basic Standard of living and to participation in the major social and occupational Opportunities of the society" (Gore, Figueiredo and Rodgers, 1995, p2).

Social exclusion is a complex and multi-dimensional process. It involves the lack or denial of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole" (Levitas and others, 2007, p. 9).

Social exclusion is what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, poor

health and family breakdown (United Kingdom Office of the Deputy Prime Minister, 2004, p. 2).

Social exclusion is understood as the condition barriers and process that impede social inclusion (United Nations Department of Economic and Social Affairs, Vision for inclusive society, P3).

Social exclusion is a process through which individuals or groups are wholly or partially excluded from fully participating in all aspects of life of the society, in which they live on the grounds of their social identities, such as age, gender, race, ethnicity, culture or language, and/or physical, economic, social disadvantages (United Nations Department of Economic and Social Affairs, 2009, P3).

Social exclusion may mean the lack of voice, lack of recognition, or lack of capacity for active participation. It may also mean exclusion from decent work, assets, land, opportunities, access to social services and/or political representation (United Nations Department of Economic and Social Affairs, 2009, P3).

As, the above terminology states Social Inclusion is a basic human right, and every society should have the opportunity to actively interact and benefit equally. Unfortunately those affected have limited voice to reach to the mass the Resource, Education and Technologies need is not available to share their stories on the other side most of the government in the continent of Africa have a limited data that can be evaluated to pin point the issues affecting the Society.

Social Exclusion is in most case the current political question it is big topic a lot of publication, Report journals have been and is being written and published by academia, government organization, Journalist…, the basic idea of this thesis is to make information available in a simple organized way.

## 2. HISTORY

The term social exclusion is old wine in new bottle. Most of continents in the world have their fair share of their problem in of socio-economic exclusion in their society. Historical statics show, even in first world countries the problem was on the topic of daily economic debate thirty year ago  some countries Europe and North America had the highest unemployment and wage gap .More than 10% through the 1980s and the 1990s. Although a declining trend may be observed for the very last years, unemployment was still above 11 % for countries like France and Italy and above 9% for Germany in mid-1999 (ROGER, JACQUES, LOUIS, JEAN-LOUIS 2001, 3).

In Canada the unemployment and child hood poverty is persistent in an alarming rate for the first and most developed country especially for new immigrant and aboriginal's origin. Since 1970 Canada went from 3 to 4 Percent of unemployment to Wapping More than 10 percent through the late 90's. According to Canadian counsel on social development (2002) child poverty in Canada shows no signs of diminishing. While the rate decreased slightly in the latter half of the 1990s, the latest figures indicate a child poverty rate of 15.6% – nearly one in six children. That is even higher than the rate of 15.2% recorded in 1989. The read Continue Neighbourhood Renewal Unit was created to narrow the gap between deprived neighbourhoods and the rest of the country. Since the launch of these initiatives, there has been a 66% reduction in people sleeping on streets at night, a 33% reduction in the number of children excluded from school,

On the other side of the Continent we can see Argentina as an example which take a chance to bank on foreign investors by excluding the local business owner. As we learn from history Argentina is extreme example of what happens when a country is run for foreign investors and not local people (Abbott 2001, 1)

## 2.1 Social Exclusion in Africa

Although, the Social Exclusion is major social, economic and political issue in another continents. It is mild compare to the continent of African. Africa has done a lot to have economic growth in last fifteen years and I can say as an Ethiopian I have been a benefiter of the some of the economic success. However, the fact there is a lot of child hood death, Youth Unemployment and Lack of health care for the major society. Not only Africa's has one of the biggest problem regarding social inclusion in each of its society also, the continent haven't been a beneficiary of the globalization system compare to other continent African countries. Castells quite rightly points out that "Africa is not external to the global economy"(Castells 1998, 91).

Apartheid era of South Africa is a great example of social exclusion. Before 1991 the non-white population of South African mostly women's which expected to be 51 percent of the population has been stripped of their right to vote, Ownership, Skilled Job, Basic health care. Most of the farming land has owned by the few. UNDP reported highest pay inequality across the white and non-white also across gender. Below the figure show the StatsSA showed that in the first quarter of 2014, approximately 25% of South African workers were in a skilled occupation, namely managers, professionals and technicians.

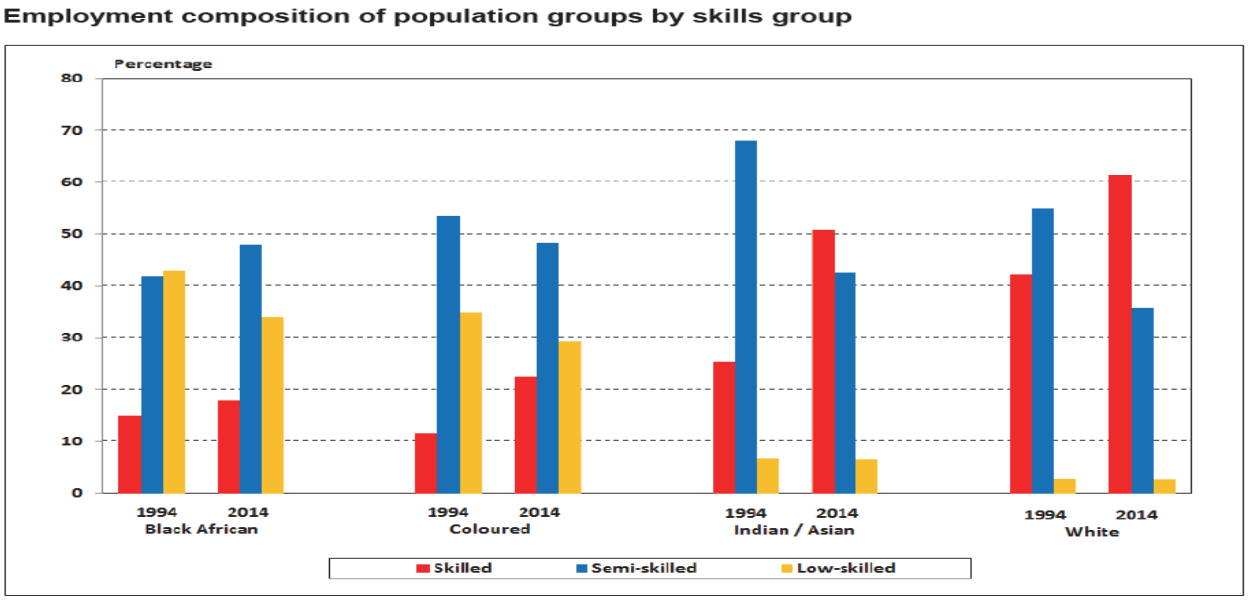


FIGURE 1. White vs black unemployment in South Africa (2015).

Multiple film maker target South Africa and has done repeated big budget movies about social inequalities. One of the most recent movies "Invictus" tells inspiring story about bring the country together through rugby to have an inclusion between black and white South African.

From the North of the Continent Egypt is another example in Africa is the recent Arab apprising against social exclusion. In early 2000's Egypt has a health GDP growing double figures and a foreign reserves up that can last the country up to 8 months of imports However, a 2014 study from the Egyptian Centre for Economic Studies put it at two-thirds the value of the formal economy. World Bank figures show that in 2010 poverty rates were running at about 25 percent, up from 16.7 percent in 1999 (Middleeasteye,2014).

The recently history in 2011 millions of mostly young Egyptian March in to there an square protesting the social exclusion from basic right. Although, there was different agendas which lead to the protest the common question was Social exclusion especially young people used the social media as platform to address their frustration of unemployment and low wedges.

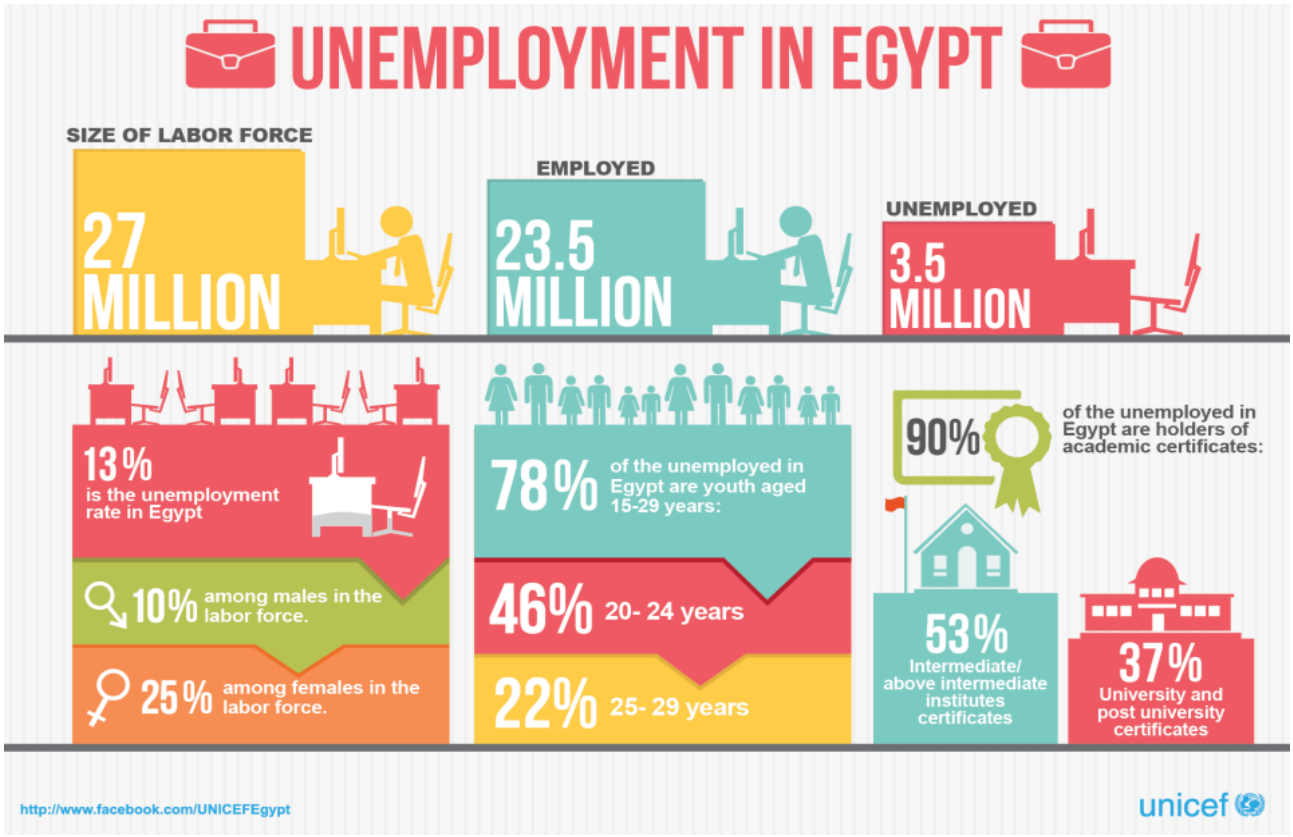


FIGURE 2.Unemployment (HOSSAM EL-NEMR, 2016).

According to Wikipedia Nigeria stood richest country in Africa with the GDP 405.1 Billion USD in 2016.how ever, Reports suggest the exclusion between youth and women is still prevalent mostly in the rural areas. The effect of poverty is high on women and youth (Moghadam, 2005; Yoshikwa & Beardslee, 2015).

As few as 20% of Nigerian women engaged in industry and agriculture, while Majority are into buying and selling; whereas men are into industry and agriculture, majority Of the women also, are students, retired and unemployed. This places them outright as absolutely poor especially with the unequal dispositions to income resources, health, education and home, and other infrastructures that make life conducive (ALAO, Esther Monisola PhD,2015)

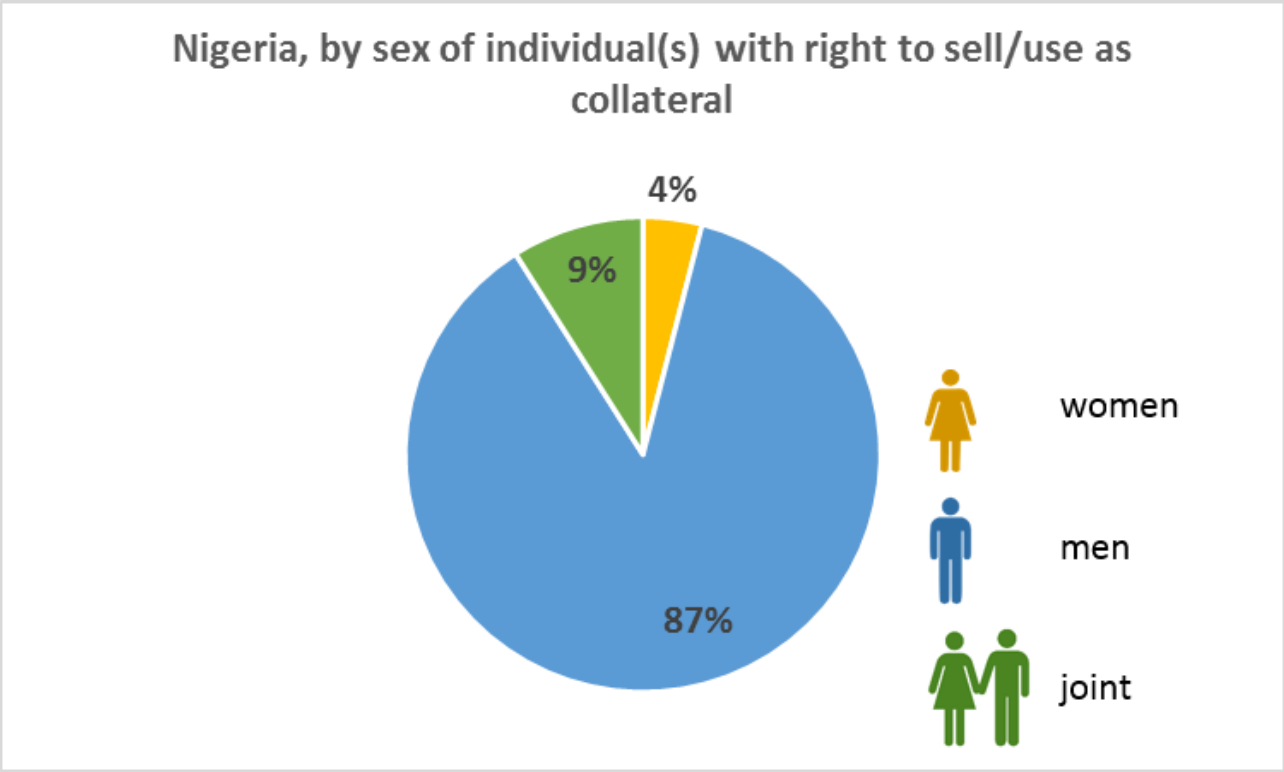


FIGURE 3. Caitlin Kieran and Cheryl Doss (2016)

Another Example is Central Africa according to 2012 MSF report the child mortality rate is high around 200 hundred death occurs among 1000 children from children younger than five years old. Most alarming was the finding that almost half of all the reported deaths were preventable. Only 26 per cent of those children died in a health facility, while the remaining 74 per cent died at home or on the road to hospital (Child death rate alarmingly high, 2012).

The Main Problem this death the exclusion of the major population from getting a basic health care. A lot of the resident have to walk a long distance to get to hospital most of the children will be dead on the way to health centre or at home.

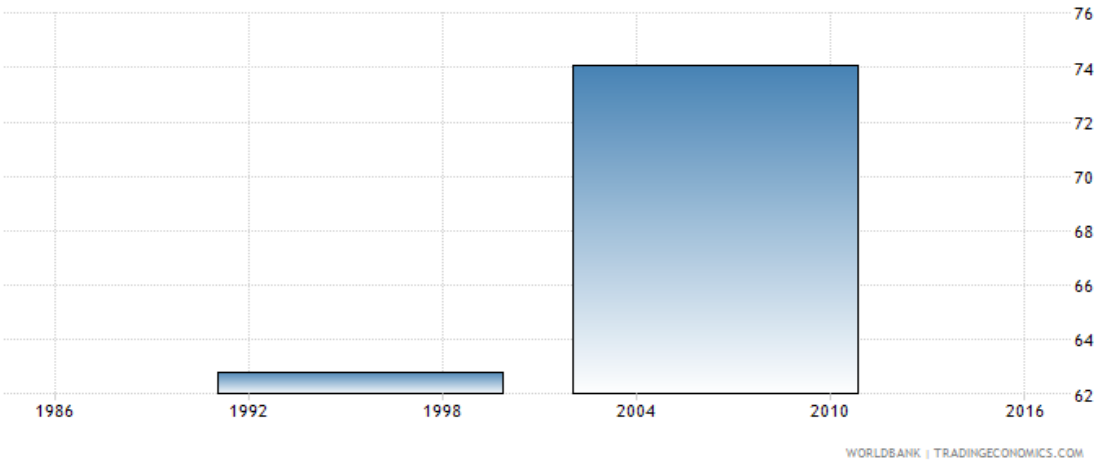


FIGURE 4. Mortality rate, male child per 1,000 male children age one (Trading Economics, 2018)

In the East of Africa Social exclusion conflict between Sudan's which lead the country to divide to north and south. Experience shows that under a united Sudan, the racial, ethnic, religious, and cultural difference had been exacerbated by socioeconomic exclusion and inequality between northerners and southerners. Hassane, N. R. Madhava , Marie-Claire and Vincent (2014).

Although the vast majority of South Sudanese celebrate their in dependent in 2011. The country is very young with two-thirds of the population under the age of 30. The 2009 national Baseline Household Survey also reveals that the country faces several human development challenges. Only 27% of the population aged 15 years and above is literate, with significant gender disparities: the literacy rate for males is 40% compared to 16% for females. The infant mortality rate is 105 (per 1,000 live births), maternal mortality rate is 2,054 (per 100,000 live births), and only 17% of children are fully immunized. 55% of the population has access to improved sources of drinking water. Around 38% of the population has to walk for more than 30 minutes one way to collect drinking water, and some 80% of South Sudanese do not have access to any toilet facility (World Bank, 2016).

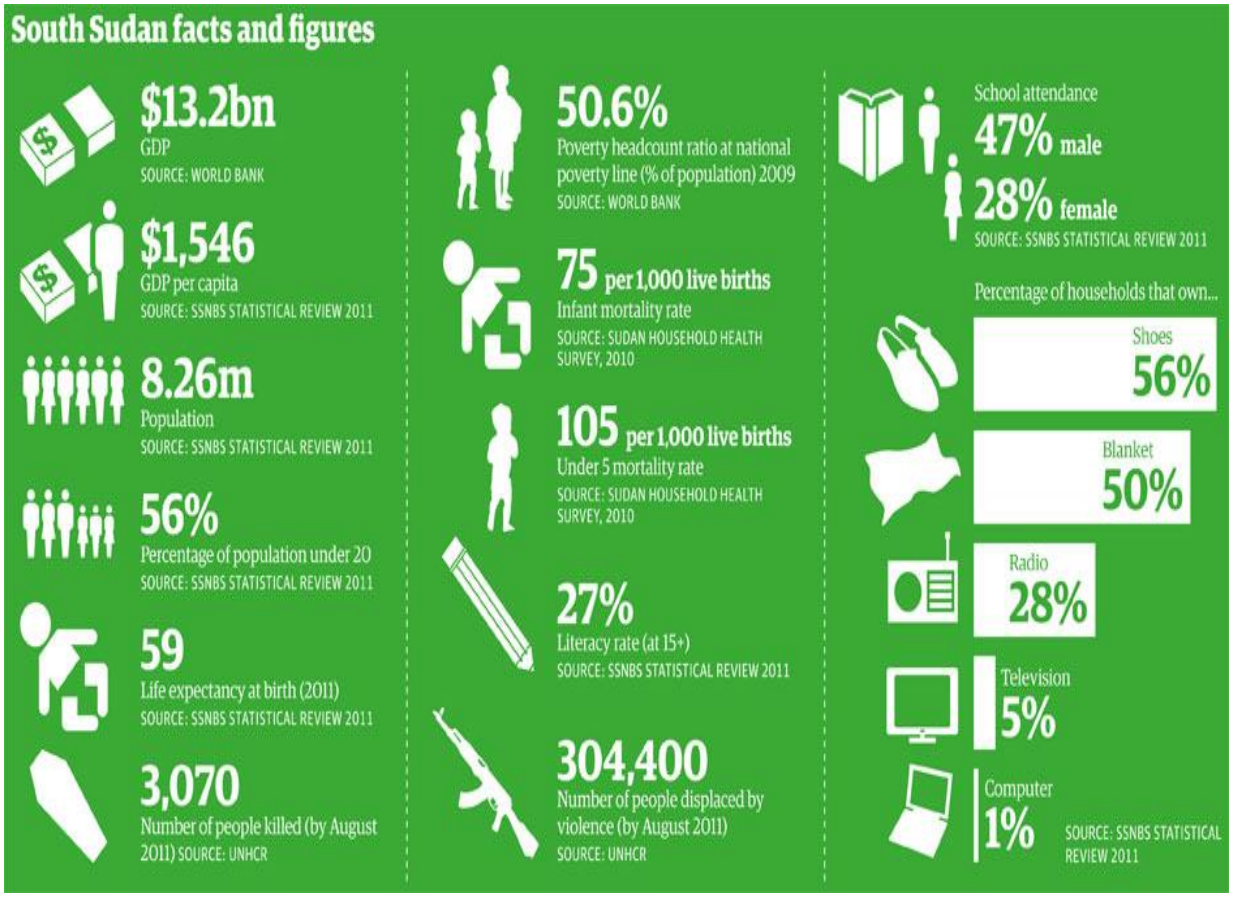


FIGURE 5.South Sudan Facts and Figures (Guardian, 2012)

## 2.2 MDG in Social Exclusion

When the idea Millennium Development Goal initiated in UN head quarter in New York, 2000. There was a big ambition to zeroing down on Social Exclusion by the year 2015.The main points for achieving this goal was Africa specially Sub-Sahara :

1. Education

   Sub-Saharan Africa has had the best record of improvement in primary education of any region since the MDGs were established. The region achieved a 20 percentage point increase in the net enrolment rate from 2000 to 2015, compared to a gain of 8 percentage points between 1990 and 2000 (MDG report, 2015).

2. Child Mortality Rate

   Between 1990 and 2013, under-5 mortality declined by 49%, from an estimated rate of 90 deaths per 1000 live births to 46 (WHO, 2015).

3. Gender Inequality

   Women now make up 41 per cent of paid workers outside the agricultural sector, an increase from 35 per cent in 1990 (MDG, 2015).

Although significant achievements have been made on many of the MDG targets worldwide, progress has been uneven across regions and countries, leaving significant gaps. Millions of people are being left behind, especially the poorest and those disadvantaged because of their sex, age, disability, ethnicity or geographic location. Targeted efforts will be needed to reach the most vulnerable people (MDG report, 2015).

## 3. BACK-GROUND

Despite two decades of fast and sustained economic growth, Africa has yet to translate its economic gains into meaningful social outcomes. Considerable inequalities persist in many countries, and growth has not been sufficiently inclusive and equitable for all segments of the population. As a result, exclusion of people from the development process has become a challenge for Africa's future development. The continent's transformation will only be successful and sustainable if it is also inclusive, that is if each individual has the opportunity to contribute to and benefit from growth, and participates fully in social and economic development (UNECA, 2016).

### 3.1 ASDI

The ASDI has been developed to assess the overall degree of human exclusion. It follows a life-cycle approach on the premise that exclusion manifests at different stages of an individual's life. For each phase of life, a dimension of human development has been identified, from which individuals in that specific age group are more likely to be excluded - affecting their development and integration later in life (UNECA, 2016).

| PERIOD | Stage in life cycle | Key dimension |
|---|---|---|
| 0 TO 1 YEARS | Birth | Survival |
| 1 TO 5 YEARS | Early childhood | Health/Nutrition |
| 6 TO 14 YEARS | Formative years | Quality education |
| 15+ | Entering the labour market | Productive employment |
| 25+ | Productive life | Means of subsistence |
| 60+ | Old age | Living a decent life |

Table 1.Social Exclusion throughout the life cycle (UNECA, 2016)

### 3.1.1 Rationale

**Key features of the ASDI**

The ASDI has a number of key features that distinguishes it from other indices:

- Developed on the basis of a request from member states;
- Uses national data, and so does not rank countries;
- Simple to comprehend and compute;
- Only index that measures human exclusion;
- Follows a life-cycle approach (UNECA, 2016).

## 3.2 Limitation of Current System

### 3.2.1 Cluster Data.

While working on this topic it was difficult to get the exact data. There are a lot of publication that was published by academia, International organization and Journalist throughout the years about social exclusion in Africa.

Even in this date of age where we have the privilege to have search engines where we can just put search query to get the result it is becoming such, a time taking task to find exact information. Even more challenging to find each member states human exclusion data's, we can imagine without a clear research information the goal of ASDI cannot be achieved.

On another case publications can be to detail going through different publications or reports can be exhausting for users who wish to find an information fast.

Minsters and policy makers have a difficult time to communicate with the public and the media. Those problem can lead to misinformation and waste of energy and money. International communities' organization and NGO's have a difficult time to help and raise question without finding the root cause. It will deter and deplete national and international communities.

Professors at the universities can have hard time with finding information and teach their students. In the other hand students have a difficult time finding and understanding easily,

most student will not have a time to go through publication after publication or search results through each page.

### 3.2.2 Up to date data.

ASDI member's states have a difficult time updating on yearly bases the continent of Africa social, economic and political is changing rapidly it will not afford to use out dated data's. Most of the time socio economic problem is inseparable to current statistics data.

The difficulty of gathering information is one of the issue to have an updated data. Clear policy and resources are not allocated. For example In 2015, 65% of the Millennium Development Goals' indicators for countries in Central Africa were either estimated, derived from statistical models, or were last measured prior to 2010 (UNDP, 2015).

The culture not caring for updating or using an out dated data collection method, will create a desolation and blurred pictures of the current problems. Especially currently we are facing with fake news, distorted truth can lead to opposite direction to irreversible out comes. Using a clear, clean and updated data helps to curve, communicate and answer any arise question from public and other institution.

### 3.3.3 Accessibility.

When we look back in history we notice openness regarding data's in the continent of Africa has bad record. These can be trace back from the culture or the system that was placed there for hundreds of years. Information availability is minimal the continent nations have deeply hurt either by government omitting for personal gain or lack of education.

On the other side distorted data's are readily available on the web by other mostly western media and organizations. The lack of access to storing data electronically was another big part, most time government offices uses paper based filing system, with time the data's will be lost. For example, population count was done manually the local government assign employees to head to house to house ask how many people live in that house. Then they will take that count, and estimate the population number which is vital for every approach, In my

country Ethiopia we still have a deep debate how may population there are, in my life time it was 60 million which growth to 100 million with five years the statistician in the country argue it is less and some government offices claim it higher. We can notice if there is a policy can be change to using figure printing, the policy makers can use efficiently policy to address exclusion and other socio economic factors

### 3.3 Proposed System

The aim of proposed system is simply to make information available for as clear, compiled and easy without a lot of work. UNECA and Member states have laid out planes curving human exclusion, Academia's, Medias, NGO's and other international organization have been involved on ASDI project since 2011. As part of my thesis I choose this project

# 4 Requirement Gathering

## 4.1 Use Case Diagram

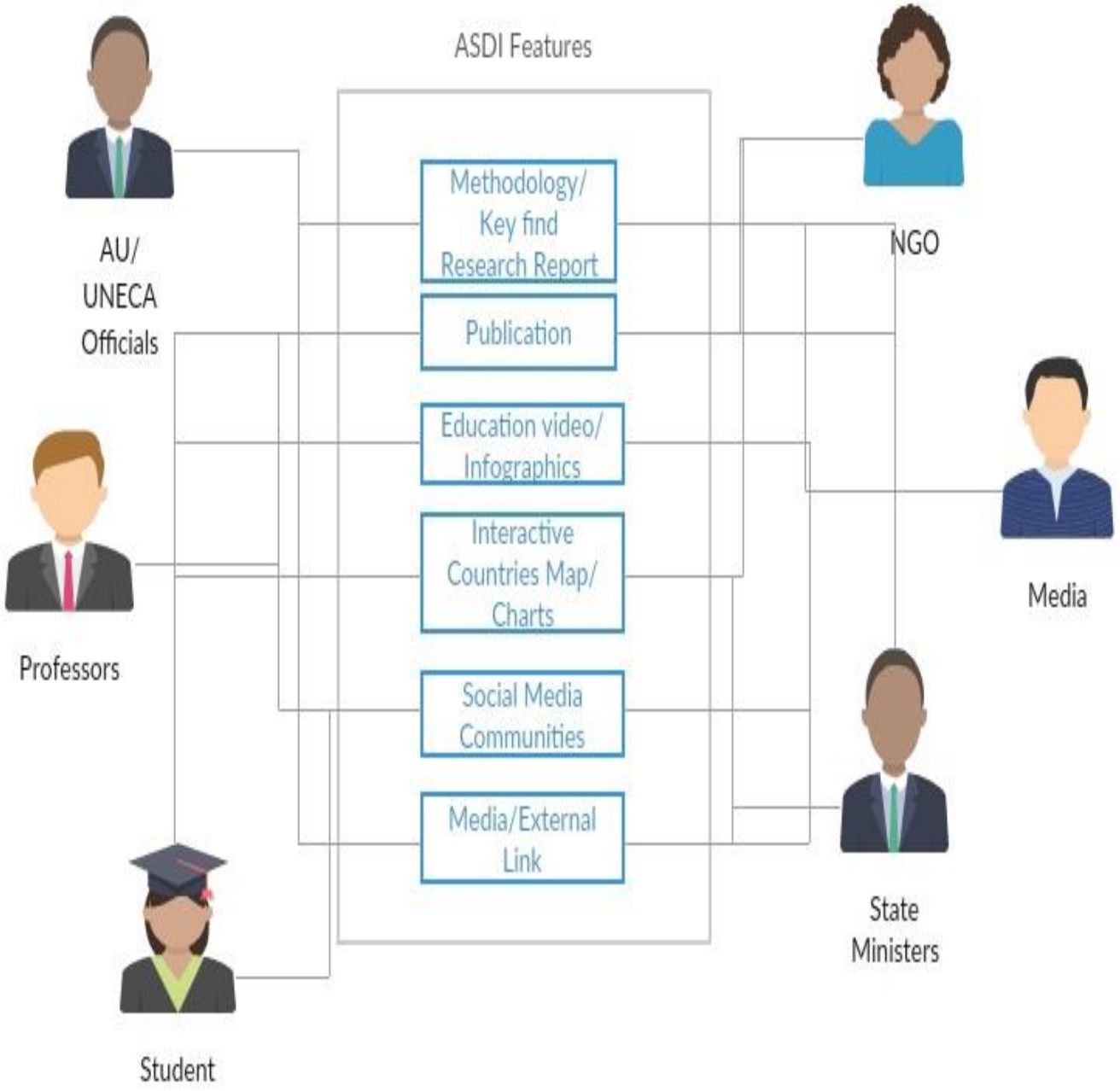


FIGURE 6. Use Case Diagram (ASDI System frame work interaction with Actors)

# 5 Design

## 5.1 Graphical Wire frame User Interface

- Home Page

The Home lay out as discussed above need to be simple. User can choose from the list as easy as one touch. The colour and the icons coordination give it a visual.


FIGURE 7. ASDI Home (Proposed UI wire frame for Android OS).

- Interactive Africa map

Colour coordinated interactive map indicates the human exclusion index across the continent of Africa. In this UI example the hypothetical figure below shows three biggest population member states. Nigeria in red as most affected, Egypt in yellow as medium affected and Ethiopia is green for in level good in managing the social exclusion using ASDI.

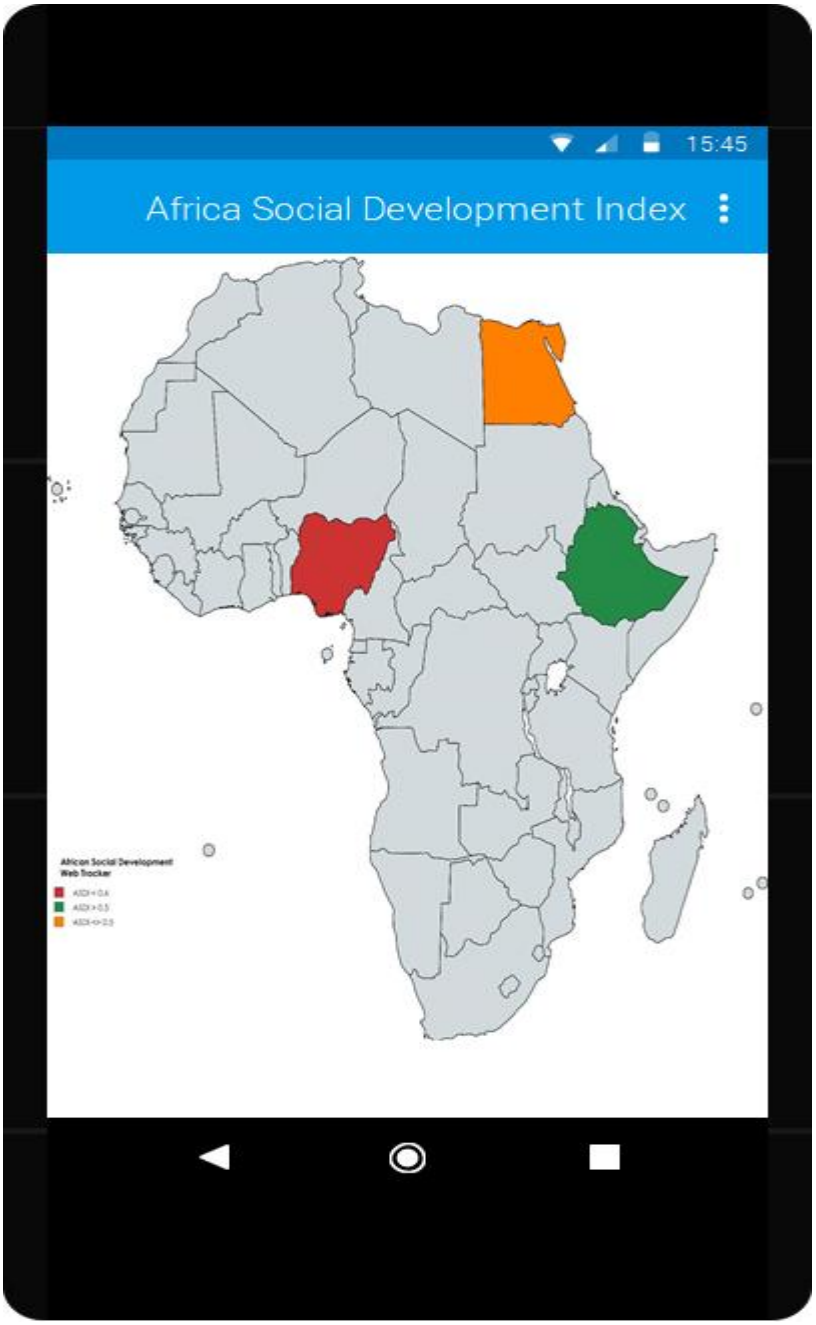


FIGURE 8. Interactive coloured chart map (Proposed UI wire frame for Android OS).

- Member states ASDI aggregates

Using key measurement (Survivor, Education, Employment, Productive life, Quality of life and Health) a member states ASDI aggregates layout gives a detail information using gender and year.

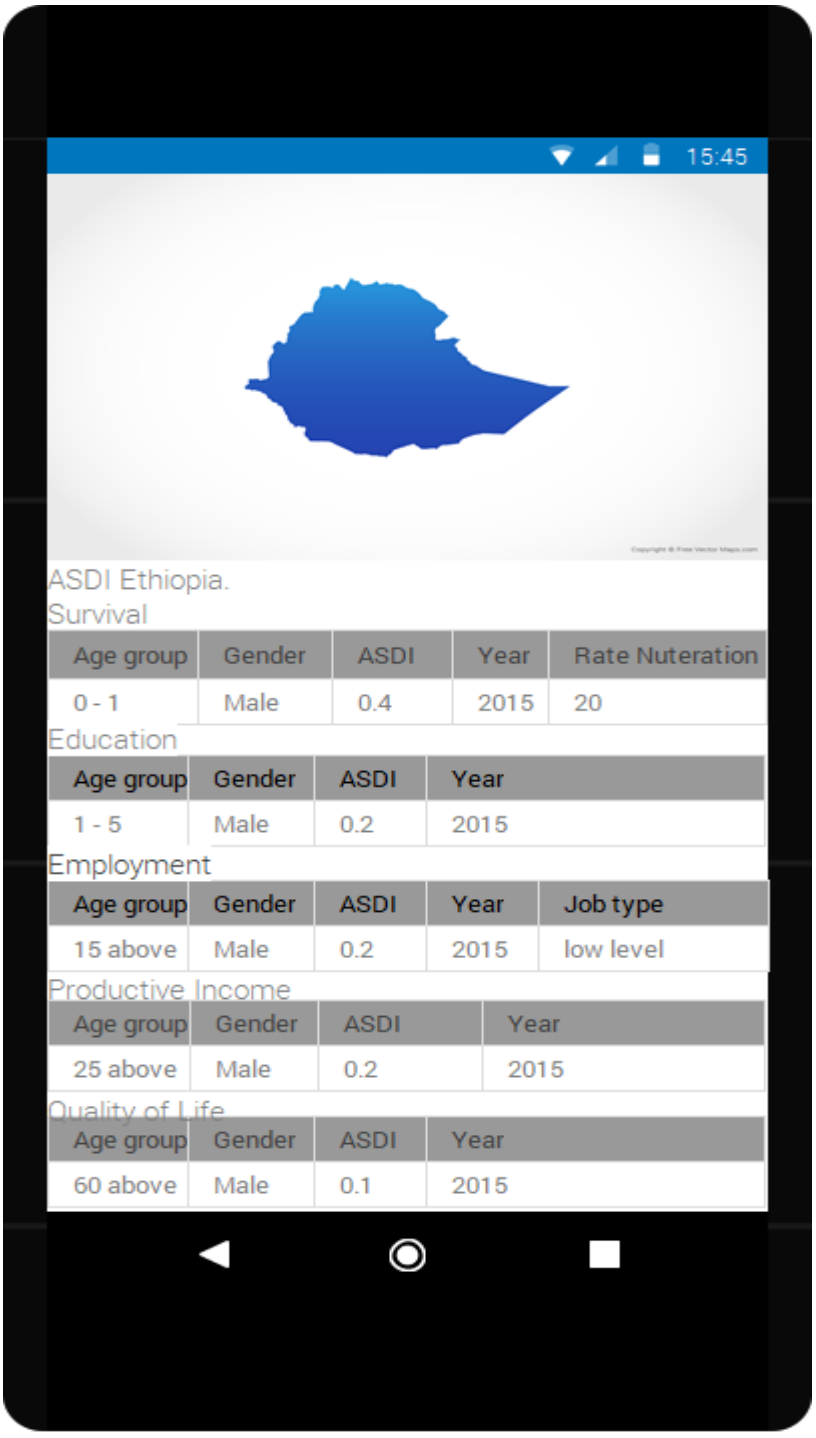


FIGURE 9. ASDI aggregates on member states (Proposed UI wire frame for Android OS).

- Grid view layout for ASDI research publication and report


FIGURE 10. Publication section (Proposed UI wire frame for Android OS).

- Web based media and press release feeds ASDI related contents.

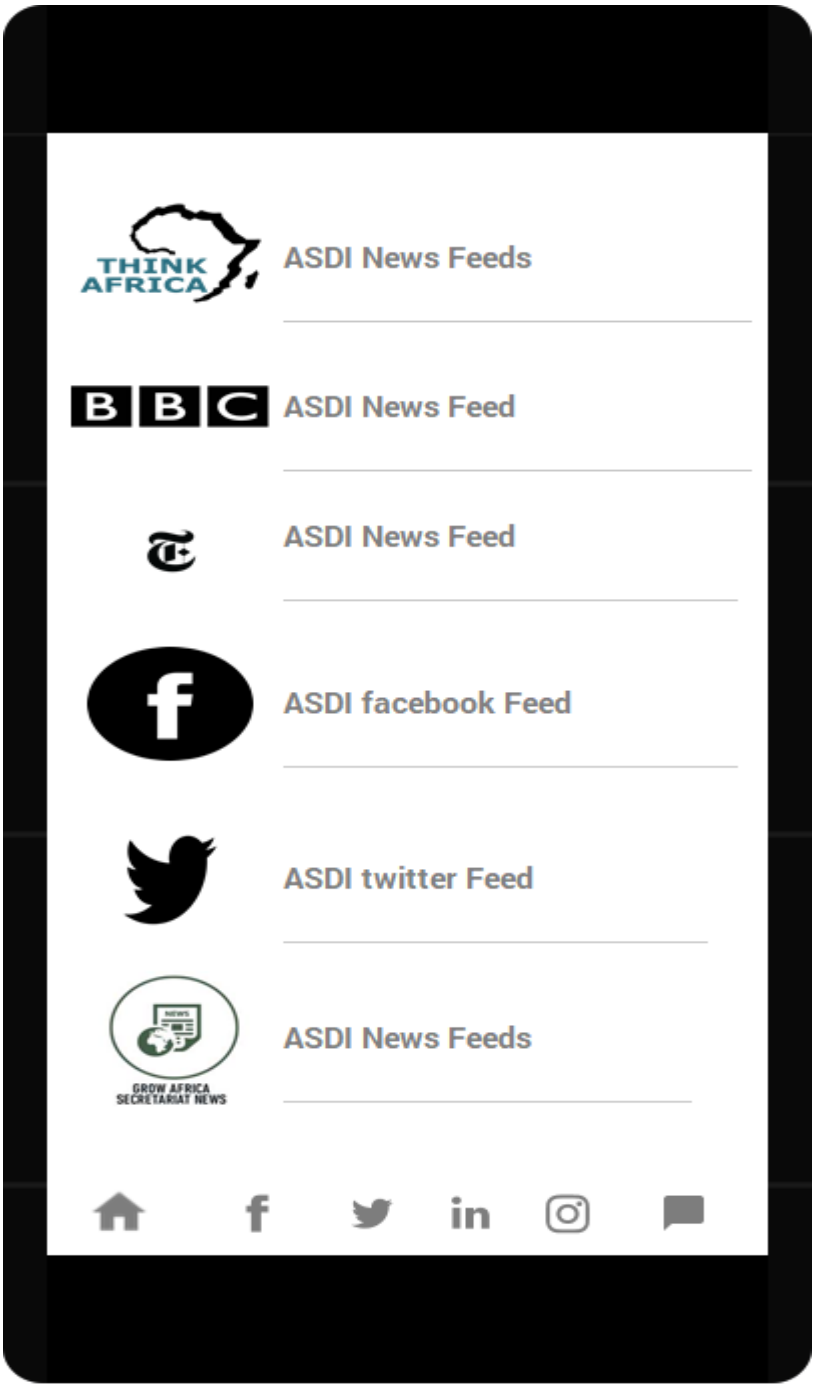


FIGURE 11. News feed black and white sketch (Proposed UI wire frame for Android OS).

# 6 Development

## 6.1 Back-End Development

Eight countries took part in training namely:
Angola, Botswana, Malawi, Mauritius, Namibia, Swaziland, Zambia and Zimbabwe. Location associate to each country

The Countries Gross domestic product will show the current economic Position of the c o u n t r y

For Unique identification the CID used as Primary Key

ASDI Six Dimensions.

- Education.

Education Table have a common values as the other five dimension table Gender, Year to identify the dis-aggregates across the index. ASDI aggregates column have a value from minimum zero to a maximum of one to give ASDI value for education. Infrastructure Table is represented by foreign key infrastructure ID.

- Employment and Productive income

Employment and Productive income Table have a column Gender, Age group, Year to identify the dis-aggregates across the index. Country Table is represented by the foreign by CID. ASDI aggregates column have a value from minimum zero to a maximum of one to give ASDI value for Employment and Productive Income.

- Health

Health is also one of the six dimension to measure exclusion. The Column Gender, Age group, Year to identify disaggregates across the index. ASDI aggregates column have a value that ranges from zero to one giving a value for ASDI. CID represent Country table Infrastructure Id represent the infrastructure table .The Health coverage column shows the percentage coverage which range from 0 to 100.

- Quality of life

Quality of life reference to elderly care which is refer to the age 60 above .Quality of life have column Age group, Gender, Year to identify the disaggregates across the index .ASDI aggregates column have a value that ranges from zero to one giving a value for

CID represent country table. Elderly care refer to the percentage from 0 to 100 for the decent life for elderly after the age of 60.

- Survival

Survival Table refer to the sixth dimension table to measure exclusion the gender Age Group, Year to identify the disaggregates across the index .ASDI aggregates column have a value that range from zero to one for measuring the Index .

- Infrastructure

Infrastructure Table shows the Number of Buildings across country, the use (Type) of building and The Number of Employee that works inside those buildings.

### 6.1.1 Data Modelling using Entity Relation (E-R)

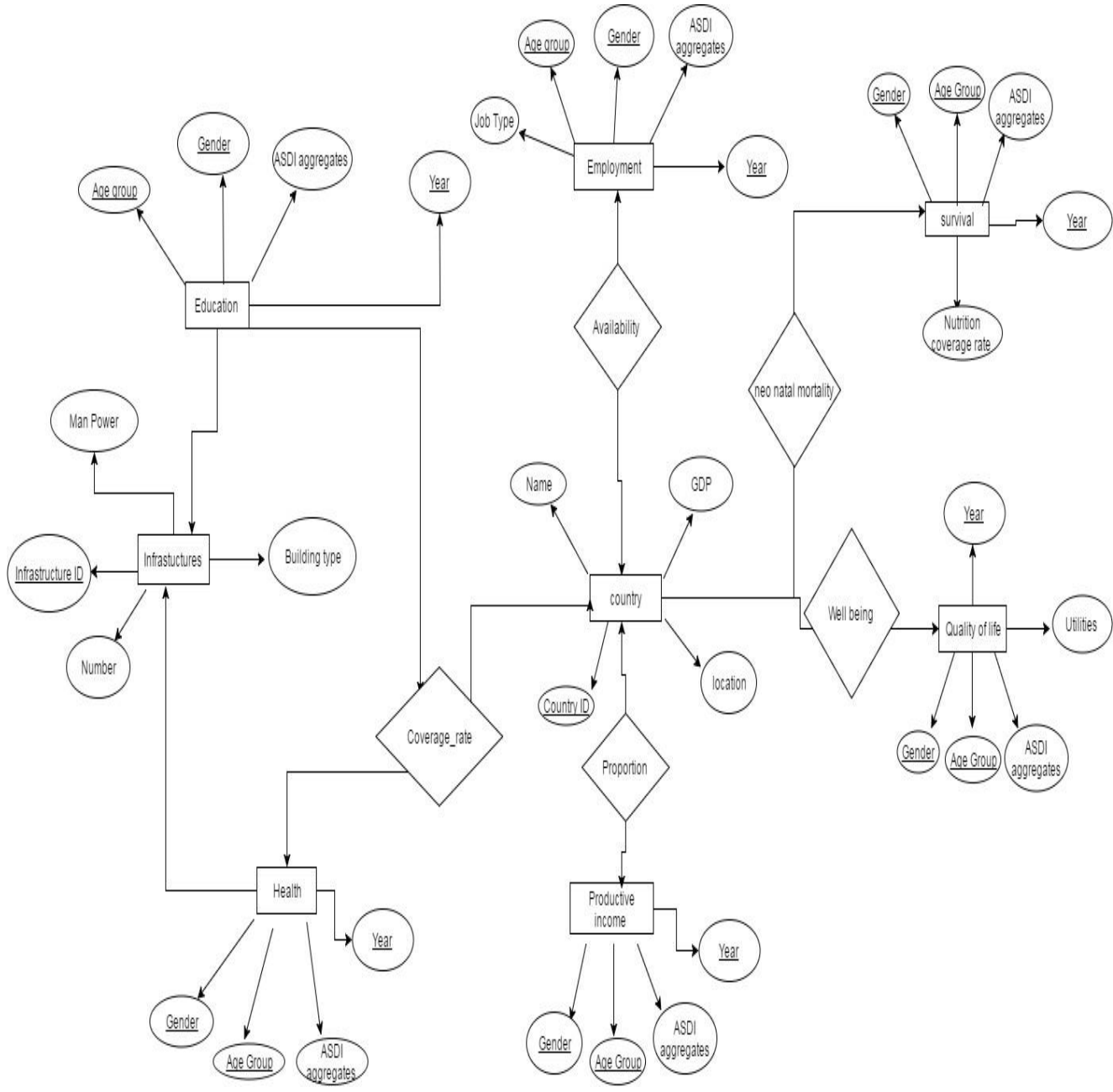


FIGURE 12. ASDI Entity Relation

## 7. Conclusion and Future Work

In conclusion ASDI mobile application will help member states and international organization to have a formulated knowledge toward working together in curbing human exclusion in Africa along with academia, the public and media as one stop shop information access for ASDI. The UI section is simple enough so that any user can interact and understand quickly. It encourage the member states to facilitate digital based data storage, usage, update regularly.

The public can have ASDI information in there hand android phones are widely used they can interact and informed. I believe informed public is the only way ASDI policies work.

The future works can include development of iOS application. Now a days the hybrid(Cross platform tools) are becoming more efficient they are relatively close to native development tools Such as, Microsoft Xamarin "With a C#-shared codebase, developers can use Xamarin tools to write native Android and iOS with native user interfaces and share code across multiple platforms, including Windows and macOS " (what is xamarin,2014).

A dedicated server in UNECA can be used to collect and store data from member states, I believe the project is vital for Africa community facing day to day challenges it should be given more priority. It needs a team of developer to work on upgrading and working in cross platforms ASDI application, researchers working in reports and technical team which help trouble shooters for the application.

The future work of the application can go beyond member states to include all nation in Africa. It have a potential to impact the nation to curb human exclusion and hopefully help the continent toward stable and balance society with more inclusion and opportunity.

**8. References**

Identifying social inclusion and exclusion.2016.

http://www.un.org/esa/socdev/rwss/2016/chapter1.pdf

Vision for an Inclusive Society.2009.

http://www.un.org/esa/socdev/documents/compilation-brochure.pdf

Social Inclusion in Africa.2017.

http://www.worldbank.org/en/region/afr/brief/social-inclusion-in-africa

Social Exclusion in Africa.2016.

https://en.wikipedia.org/wiki/Social_exclusion

African Social Development Index: Measuring Human Exclusion for Structural Transformation 2016,

https://knowledge.uneca.org/ASDI/

Development in Social Europe.2009.

http://www.eapn.ie/eapn/policy/development-of-social-europe

Tackling Social Exclusion in Europe

http://base.socioeco.org/docs/ang2.pdf

Poverty and Social Exclusion in Europe

https://erasmus2012divercity.files.wordpress.com/2012/01/rouet_nub_02_2012.pdf

Social Challenges: Social Exclusion

http://www.ccsd.ca/resources/CrimePrevention/c_exclusion.htm

Globalization and Social Exclusion.2005.

https://books.google.com/books?isbn=1565491920

Egypt economy after five years after revolution.2014.

http://www.middleeasteye.net/news/analysis-egypts-economy-5-years-after-revolution-1084797209

Egypt revolution.2011.

https://en.wikipedia.org/wiki/Egyptian_revolution_of_2011

Unemployment.2016.

https://www.emaze.com/@AWTWTLLO/Unemployment

Economy of Nigeria.2016.

https://en.wikipedia.org/wiki/Economy_of_Nigeria

Celebrating Pi Day: What pie charts can tell us about gender gaps in control over land.2016.

http://pim.cgiar.org/2016/03/14/celebrating-pi-day-what-pie-charts-can-tell-us-about-gender-gaps-in-control-over-land/

http://www.eajournals.org/wp-content/uploads/Inequality-Poverty-among-Nigeria-Women-and-Youth-and-the-Challenges-of-Inclusive-Growth.pdf

Central African Republic: Child death rate alarmingly high 2012.

http://www.msf.org/en/article/central-african-republic-child-death-rate-alarmingly-high

Central African Republic – Mortality rate, male child (per 1,000 male children age one).2018.

https://tradingeconomics.com/central-african-republic/mortality-rate-male-child-per-1-000-male-children-age-one-wb-data.html

Fostering Development through Opportunity, Inclusion, and Equity 2014.

https://books.google.com/books?id=x7hGAgAAQBAJ&printsec=frontcover

The World Bank on South Sudan.2016.

http://www.worldbank.org/en/country/southsudan/overview

South Sudan in numbers.2012.

https://www.theguardian.com/global-development/datablog/2012/jul/09/south-sudan-in-numbers-key-statistics

Africa and the challenge of Millennium Development Goal.2005.

http://www.un.org/africarenewal/magazine/july-2005/africa-and-challenge-millennium-development-goals

Millennium Development Goal.2015.

http://www.who.int/mediacentre/factsheets/fs290/en/

Millennium Development Goal report.2015.

http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20PC%20final.pdf

UNESCO and Sustainable Development Goal

https://en.unesco.org/sdgs

Vector - Political map of Africa continent. Simple black wireframe outline with national borders, and country name labels on white background. Vector illustration.

https://www.123rf.com/photo_73892162_stock-vector-political-map-of-arfica-continent-simple-black-wireframe-outline-with-national-borders-and-country-n.html

African countries by Human Development Index (2015)

https://en.wikipedia.org/wiki/List_of_African_countries_by_Human_Development_Index

Xamarin

https://en.wikipedia.org/wiki/Xamarin

## 9. Appendix

This section shows the REST and slim frame work for the relation and database modelling shown in section 6 above,

### 9.1 Code for “db.php”

```
<?php
function getDB() {
    $dbhost="mydb.tamk.fi";
    $dbuser="c6swolde"; // Your own username
    $dbpass="ASDIapi2016"; // Your own password
    $dbname="dbc6swolde62"; // Your own database name
    $dbConnection = new PDO("mysql:host=$dbhost;
        dbname=$dbname;charset=utf8",
        $dbuser, $dbpass,array(PDO::MYSQL_ATTR_INIT_COMMAND
        => "SET NAMES 'utf8'"));

    return $dbConnection;
}
```

### 9.2 Code for “function.php”

```
<?php

// Get All ASDI Country Table Rows

function getAllCountry() {
    $sql="SELECT * FROM Country";
    try {
        $db = getDB();
```

```
        $stmt = $db->query($sql);
        $object = $stmt->fetchAll(PDO::FETCH_OBJ);
        $db = null;
        return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
        } catch(PDOException $e) {return '{"error":{"text":'. $e->getMessage() .'}}';
    }
}

// Insert in to ASDI Country Row
function createCountry($params) {
    $sql="INSERT INTO Country(CID,Country_name,Country_location,GDP)
    VALUES (:CID,:Country_name,:Country_location,:GDP);";
    try {
        $db = getDB();
        $stmt = $db->prepare($sql);
        $stmt->bindParam(':CID', $CID);
                    $stmt->bindParam(':Country_name', $params->Country_name);
                    $stmt->bindParam(':Country_location', $params->Country_location);
        $stmt->bindParam(':GDP', $params->GDP);
        $CID = "12";
        $params->Country_name = "Uganda";
        $params->Country_location = "East";
        $params->GDP = "70 Billion";
        $result = $stmt->execute ();
        echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
        $db = null;
       if ($result)
                            return '("info": "ok")';
                    else
                            return '("info": "nok")';
            } catch(PDOException $e) {
```

```
        return '{"error":{"text":'. $e->getMessage() .'}}';
    }
}

// UPDATE ASDI Country Table Row

function updateCountry($params) {
        $sql="Update Country
                SET
Country_name=:Country_name,Country_location=:Country_location,GDP=:GDP
        Where CID=:CID";
        try {
                $db = getDB();
        $stmt = $db->prepare($sql);
        $stmt->bindParam(':CID', $CID);
        $stmt->bindParam(':Country_name', $params->Country_name);
                $stmt->bindParam(':Country_location', $params->Country_location);
                $stmt->bindParam(':GDP', $params->GDP);
        $CID = "12";
        $params->Country_name = "Rwanda";
        $params->Country_location = "centralEast";
        $params->GDP = "80 Billion";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
```

```
	}
}

// DELETE Row By Id from ASDI Country

function deleteCountry($id) {
	$id = (int)$id;
	if (empty($id)) {
		exitWithError('invalid or missing id');
	}
	dbDelete('Country', $id);
}
function dbDelete($table, $id, $id_field_name = 'CID') {
	if (empty($table) || empty($id)) {
		return;
	}
	$sql = "DELETE FROM {$table} WHERE
{$id_field_name}=:{$id_field_name}";
	try {
		$db = getDB();
		$stmt = $db->prepare($sql);
		$stmt->bindValue($id_field_name, $id);
		$stmt->execute();
		$db = null;
		return;
	} catch(PDOException $e) {
		exitWithError($e->getMessage());
	}
}

/**********************************Education*****************************
```

```
// Get All Rows from ASDI Table

function getAlleducation() {
   $sql="SELECT * FROM Education";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
      } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
   }
}

// INSERT Row in to ASDI Education table

function createEducation($params) {
        $sql = "INSERT INTO Education
(Gender,ASDI_aggregates,Age_Group,Year,CID,Infrastructure_Id)
       VALUES
       (:Gender,:ASDI_aggregates,:Age_Group,:Year,:CID,:Infrastructure_Id);"
   ;
         try {
                  $db = getDB();
                  $stmt = $db->prepare($sql);
                  $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
      $stmt->bindParam(':Age_Group',$params->Age_Group);
      $stmt->bindParam(':Year', $params->Year);
     $stmt->bindParam(':CID', $params->CID);
      $stmt->bindParam(':Infrastructure_Id', $params->Infrastructure_Id);
```

```
	$Gender = "Female";
	$params->Age_Group = "10+";
	$params->ASDI_aggregates = "0.1";
	$params->Year = "2007";
	$params->CID = "6";
	$params->Infrastructure_Id = "16";
		$result = $stmt->execute ();
		echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
		$db = null; //closes pdo-connection
		if ($result)
			return '("info": "ok")';
		else
			return '("info": "nok")';
	} catch(PDOException $e) {

	return '{"error":{"text":'. $e->getMessage() .'}}';
	}
}

// UPDATE Row from ASDI Education Table

function updateEducation($params) {
	$sql="Update Education
		SET ASDI_aggregates=:ASDI_aggregates
	 Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
	try {
		$db = getDB();
	$stmt = $db->prepare($sql);
	$stmt->bindParam(':Gender', $Gender);
	$stmt->bindParam(':Age_Group', $params->Age_Group);
		$stmt->bindParam(':ASDI_aggregates', $params->ASDI_aggregates);
```

```
		$stmt->bindParam(':Year', $params->Year);
	$stmt->bindParam(':CID', $params->CID);
	$Gender = "Female";
	$params->Age_Group = "10+";
	$params->ASDI_aggregates = "0.4";
	$params->Year = "2007";
	$params->CID = "6";
		$result = $stmt->execute ();
		echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
		$db = null; //closes pdo-connection
		if ($result)
			return '("info": "ok")';
		else
			return '("info": "nok")';
	} catch(PDOException $e) {

	return '{"error":{"text":'. $e->getMessage() .'}}';
	}
}

// DELETE Row from the table ASDI Education

function deleteEducation($params) {
	$sql = "DELETE FROM Education WHERE Gender=:Gender and
Age_Group=:Age_Group
   and Year=:Year and CID=:CID";
	try {
		$db = getDB();
		$stmt = $db->prepare($sql);
		$stmt->bindParam(':Gender', $Gender);
	$stmt->bindParam(':Age_Group',$Age_Group);
	$stmt->bindParam(':Year', $Year);
```

```
        $stmt->bindParam(':CID', $CID);
        $Gender = "Female";
        $Age_Group = "10+";
        $ASDI_aggregates = "0.4";
        $Year = "2007";
        $CID = "6";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
           } catch(PDOException $e) {

           return '{"error":{"text":'. $e->getMessage() .'}}';
           }
}

/*****************************Employement*****************************
/* INSERT Row in to ASDI Employement table */

// Get All Rows from ASDI Employement Table

function getAllemployment() {
   $sql="SELECT * FROM Employment";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
```

```
        } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
    }
}

// INSERT Row in to ASDI Employement table

function createEmployment($params) {
          $sql = "INSERT INTO Employment
(Gender,ASDI_aggregates,Age_Group,Year,CID)
         VALUES
         (:Gender,:ASDI_aggregates,:Age_Group,:Year,:CID,);"
    ;
          try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
       $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
       $stmt->bindParam(':Age_Group',$params->Age_Group);
       $stmt->bindParam(':Year', $params->Year);
       $stmt->bindParam(':CID', $params->CID);
       $Gender = "Male";
       $params->Age_Group = "15+";
       $params->ASDI_aggregates = "0.2";
       $params->Year = "2007";
       $params->CID = "7";
       $params->Infrastructure_Id = "16";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
```

```
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

// UPDATE Row from ASDI Employement Table

function updateEmployment($params) {
        $sql="Update Employment
                SET ASDI_aggregates=:ASDI_aggregates
       Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
        try {
                $db = getDB();
      $stmt = $db->prepare($sql);
      $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group', $params->Age_Group);
                $stmt->bindParam(':ASDI_aggregates', $params->ASDI_aggregates);
                $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
      $Gender = "Male";
      $params->Age_Group = "15+";
      $params->ASDI_aggregates = "0.4";
      $params->Year = "2007";
      $params->CID = "7";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
```

```
                return '("info": "ok")';
        else
                return '("info": "nok")';
    } catch(PDOException $e) {

    return '{"error":{"text":'. $e->getMessage() .'}}';
    }
}

// DELETE Row from the table ASDI Employment
function deleteEmployment($params) {
    $sql = "DELETE FROM Employment WHERE Gender=:Gender and
Age_Group=:Age_Group
  and Year=:Year and CID=:CID";
    try {
        $db = getDB();
        $stmt = $db->prepare($sql);
        $stmt->bindParam(':Gender', $Gender);
    $stmt->bindParam(':Age_Group',$Age_Group);
    $stmt->bindParam(':Year', $Year);
    $stmt->bindParam(':CID', $CID);
    $Gender = "Male";
    $Age_Group = "15+";
    $ASDI_aggregates = "0.4";
    $Year = "2007";
    $CID = "6";
        $result = $stmt->execute ();
        echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
        $db = null; //closes pdo-connection
        if ($result)
                return '("info": "ok")';
        else
```

```
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}


/*******************************Health*************************************
/* INSERT Row in to ASDI Health table */

// Get All Rows from Health ASDI Table

function getAllhealth() {
   $sql="SELECT * FROM Health";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
      } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
   }
}

// Create ASDI Health Table  Rows

function createHealth($params) {
        $sql = "INSERT INTO Health
(Health_Coverage,Gender,ASDI_aggregates,Age_Group,Year,Infrastructure_Id,CID)
       VALUES
```

```
(:Health_Coverage,:Gender,:ASDI_aggregates,:Age_Group,:Year,:Infrastructure_Id,:CI
D);"
   ;
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
    $stmt->bindParam(':Health_Coverage', $params->Health_coverage);
                $stmt->bindParam(':Gender', $Gender);
    $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
    $stmt->bindParam(':Age_Group',$params->Age_Group);
    $stmt->bindParam(':Year', $params->Year);
    $stmt->bindParam(':CID', $params->CID);
    $stmt->bindParam(':Infrastructure_Id', $params->Infrastructure_Id);
    $Gender= "Male";
    $params->Health_coverage= "40";
    $params->Age_Group = "5";
    $params->ASDI_aggregates = "0.2";
    $params->Year = "2012";
    $params->CID = "1";
    $params->Infrastructure_Id = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
```

```
}

// UPDATE ASDI Health Table  Rows

function updateHealth($params) {
        $sql="Update Health
                SET ASDI_aggregates=:ASDI_aggregates
      Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
        try {
                $db = getDB();
      $stmt = $db->prepare($sql);
      $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group', $params->Age_Group);
                $stmt->bindParam(':ASDI_aggregates', $params->ASDI_aggregates);
                $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
      $Gender = "Male";
      $params->Age_Group = "5";
      $params->ASDI_aggregates = "0.4";
      $params->Year = "2012";
      $params->CID = "1";
      $params->Infrastructure_Id = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {
```

```
        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

// DELETE Row from the table ASDI Health

function deleteHealth($params) {
        $sql = "DELETE FROM Health WHERE Gender=:Gender and
Age_Group=:Age_Group
   and Year=:Year and CID=:CID";
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group',$Age_Group);
      $stmt->bindParam(':Year', $Year);
      $stmt->bindParam(':CID', $CID);
      $Gender = "Female";
      $Age_Group = "5";
      $Year = "2012";
      $CID = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
```

```
}



/***********************************Infrastructure*******************/
/* INSERT Row in to ASDI Infrastructure table */

/* Get All Rows from ASDI Infrastructure Table */

function getAllinfrastracture() {
   $sql="SELECT * FROM infrastructure";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
      } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
   }
}

function createInfrastructure($params) {
        $sql = "INSERT INTO infrastructure
(Infrastructure_Id,Number,Man_Power,Building_Type)
       VALUES
       (:Infrastructure_Id,:Number,:Man_Power,:Building_Type);"
   ;
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
```

```
		$stmt->bindParam(':Infrastructure_Id', $Infrastructure_Id);
	$stmt->bindParam(':Number',$params->Number);
	$stmt->bindParam(':Man_Power',$params->Man_Power);
	$stmt->bindParam(':Building_Type', $params->Building_Type);
	$Infrastructure_Id = "9";
	$params->Number = "2000";
	$params->Man_Power = "25000";
	$params->Building_Type = "High_School";
		$result = $stmt->execute ();
		echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
		$db = null; //closes pdo-connection
		if ($result)
			return '("info": "ok")';
		else
			return '("info": "nok")';
	  } catch(PDOException $e) {

	  return '{"error":{"text":'. $e->getMessage() .'}}';
	  }
}

// UPDATE Row from ASDI Infrastructure Table

function updateInfrastructure($params) {
	  $sql="Update infrastructure
		SET Number=:Number and Man_Power=:Man_Power
	 Where Infrastructure_Id=:Infrastructure_Id ";
	  try {
		$db = getDB();
	$stmt = $db->prepare($sql);
	$stmt->bindParam(':Infrastructure_Id',$Infrastructure_Id);
	$stmt->bindParam(':Number', $params->Number);
```

```
                $stmt->bindParam(':Man_Power', $params->Man_Power);
        $Infrastructure_Id = "9";
        $params->Number = "3000";
        $params->Man_Power = "35000";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
            } catch(PDOException $e) {

            return '{"error":{"text":'. $e->getMessage() .'}}';
            }
}

// DELETE Row By Id from ASDI Infrastructure

function deleteInfrastructure($id) {
            $id = (int)$id;
            if (empty($id)) {
                        exitWithError('invalid or missing id');
            }
            dbDeleteinf('infrastructure', $id);
}
function dbDeleteinf($table, $id, $id_field_name = 'Infrastructure_Id') {
            if (empty($table) || empty($id)) {
                        return;
            }
            $sql = "DELETE FROM {$table} WHERE
{$id_field_name}=:{$id_field_name}";
```

```
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindValue($id_field_name, $id);
                $stmt->execute();
                $db = null;
                return;
        } catch(PDOException $e) {
                exitWithError($e->getMessage());
        }
}


/*************************ProductiveIncome*****************************/
/* INSERT Row in to ASDI Productive_income table */

/* Get All Rows from ASDI Productive Income Table */

function getAllproductiveincome() {
   $sql="SELECT * FROM Productive_income";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
      } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
   }
}
//Create ASDI Productive income Table
function createProductiveincome($params) {
```

```
        $sql = "INSERT INTO Productive_income
(Gender,ASDI_aggregates,Age_Group,Year,CID)
        VALUES
        (:Gender,:ASDI_aggregates,:Age_Group,:Year,:CID,);"
    ;
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
      $stmt->bindParam(':Age_Group',$params->Age_Group);
      $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
      $Gender = "Female";
      $params->Age_Group = "16+";
      $params->ASDI_aggregates = "0.2";
      $params->Year = "2007";
      $params->CID = "7";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

// UPDATE Row from ASDI Productive_income Table
```

```
function updateProductiveincome($params) {
        $sql="Update Productive_income
                SET ASDI_aggregates=:ASDI_aggregates
      Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
        try {
                $db = getDB();
      $stmt = $db->prepare($sql);
      $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group', $params->Age_Group);
                $stmt->bindParam(':ASDI_aggregates', $params->ASDI_aggregates);
                $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
      $Gender = "Female";
      $params->Age_Group = "16+";
      $params->ASDI_aggregates = "0.4";
      $params->Year = "2007";
      $params->CID = "7";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}
```

```
// DELETE Row from the table ASDI Productive income

function deleteProductiveincome($params) {
        $sql = "DELETE FROM Productive_income WHERE Gender=:Gender and
Age_Group=:Age_Group
   and Year=:Year and CID=:CID";
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group',$Age_Group);
      $stmt->bindParam(':Year', $Year);
      $stmt->bindParam(':CID', $CID);
      $Gender = "Female";
      $Age_Group = "16+";
      $ASDI_aggregates = "0.4";
      $Year = "2007";
      $CID = "7";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

/*****************************Quality_of_life************************/
```

```
/* INSERT Row in to ASDI Quality of life table */

/* Get All Rows from Quality of life ASDI Table */

function getAllquality_of_life() {
   $sql="SELECT * FROM Quality_of_life";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
      } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
   }
}
//Create ASDI Quality_of_life  Table
function createQuality_of_life($params) {
        $sql = "INSERT INTO Quality_of_life
(Gender,ASDI_aggregates,Age_Group,Elderlycare,Year,CID)
       VALUES
       (:Gender,:ASDI_aggregates,:Age_Group,:Elderlycare,:Year,:CID);"
   ;
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
      $stmt->bindParam(':Age_Group',$params->Age_Group);
      $stmt->bindParam(':Elderlycare',$params->Elderlycare);
      $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
```

```
	$Gender = "Female";
	$params->Age_Group = "60+";
	$params->ASDI_aggregates = "0.2";
	$params->Elderlycare = "20";
	$params->Year = "2007";
	$params->CID = "7";
		$result = $stmt->execute ();
		echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
		$db = null; //closes pdo-connection
		if ($result)
			return '("info": "ok")';
		else
			return '("info": "nok")';
	} catch(PDOException $e) {

	return '{"error":{"text":'. $e->getMessage() .'}}';
	}
}

// UPDATE Row from Quality_of_life ASDI Table

function updateQuality_of_life($params) {
	$sql="Update Quality_of_life
		SET Elderlycare = :Elderlycare
	 Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
	try {
		$db = getDB();
	$stmt = $db->prepare($sql);
	$stmt->bindParam(':Gender', $Gender);
	$stmt->bindParam(':Age_Group', $params->Age_Group);
	$stmt->bindParam(':Elderlycare',$params->Elderlycare);
```

```
		$stmt->bindParam(':Year', $params->Year);
	$stmt->bindParam(':CID', $params->CID);
	$Gender = "Female";
	$params->Age_Group = "60+";
	$params->Elderlycare = "40";
	$params->Year = "2007";
	$params->CID = "7";
		$result = $stmt->execute ();
		echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
		$db = null; //closes pdo-connection
		if ($result)
			return '("info": "ok")';
		else
			return '("info": "nok")';
	} catch(PDOException $e) {

	return '{"error":{"text":'. $e->getMessage() .'}}';
	}
}

// DELETE Row from the table ASDI Quality_of_life

function deleteQuality_of_life($params) {
	$sql = "DELETE FROM Quality_of_life WHERE Gender=:Gender and
Age_Group=:Age_Group
   and Year=:Year and CID=:CID";
	try {
		$db = getDB();
		$stmt = $db->prepare($sql);
		$stmt->bindParam(':Gender', $Gender);
	$stmt->bindParam(':Age_Group',$Age_Group);
	$stmt->bindParam(':Year', $Year);
```

```
        $stmt->bindParam(':CID', $CID);
        $Gender = "Female";
        $Age_Group = "60+";
        $Year = "2007";
        $CID = "7";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
           } catch(PDOException $e) {

           return '{"error":{"text":'. $e->getMessage() .'}}';
           }
}

/**********************************Survival*************************
/
/* INSERT Row in to ASDI Survival table */

// Get All Rows from Survival ASDI Table

function getAllsurvival() {
   $sql="SELECT * FROM Survival";
   try {
      $db = getDB();
      $stmt = $db->query($sql);
      $object = $stmt->fetchAll(PDO::FETCH_OBJ);
      $db = null;
      return '{"data": ' . json_encode($object, JSON_UNESCAPED_UNICODE) . '}';
```

```
        } catch(PDOException $e) {
                        return '{"error":{"text":'. $e->getMessage() .'}}';
    }
}
//Create ASDI Survival Table
function createSurvival($params) {
          $sql = "INSERT INTO Survival
(Gender,ASDI_aggregates,Age_Group,Nutration_rate,Year,CID)
         VALUES
         (:Gender,:ASDI_aggregates,:Age_Group,:Nutration_rate,:Year,:CID);"
    ;
          try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
       $stmt->bindParam(':ASDI_aggregates',$params->ASDI_aggregates);
       $stmt->bindParam(':Age_Group',$params->Age_Group);
       $stmt->bindParam(':Nutration_rate',$params->Nutration_rate);
       $stmt->bindParam(':Year', $params->Year);
       $stmt->bindParam(':CID', $params->CID);
       $Gender = "Female";
       $params->Age_Group = "Birth";
       $params->ASDI_aggregates = "0.4";
       $params->Nutration_rate= "30";
       $params->Year = "2007";
       $params->CID = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
```

```
                return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

// UPDATE Row from Survival ASDI Table

function updateSurvival($params) {
        $sql="Update Survival
                SET Nutration_rate = :Nutration_rate
       Where Gender=:Gender and Age_Group=:Age_Group and Year=:Year and
CID=:CID";
        try {
                $db = getDB();
      $stmt = $db->prepare($sql);
      $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group', $params->Age_Group);
      $stmt->bindParam(':Nutration_rate',$params->Nutration_rate);
                $stmt->bindParam(':Year', $params->Year);
      $stmt->bindParam(':CID', $params->CID);
      $Gender = "Female";
      $params->Age_Group = "Birth";
      $params->Nutration_rate = "40";
      $params->Year = "2007";
      $params->CID = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
```

```
                else
                        return '("info": "nok")';
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}

// DELETE Row from the table ASDI Survival

function deleteSurvival($params) {
        $sql = "DELETE FROM Survival WHERE Gender=:Gender and
Age_Group=:Age_Group
   and Year=:Year and CID=:CID";
        try {
                $db = getDB();
                $stmt = $db->prepare($sql);
                $stmt->bindParam(':Gender', $Gender);
      $stmt->bindParam(':Age_Group',$Age_Group);
      $stmt->bindParam(':Year', $Year);
      $stmt->bindParam(':CID', $CID);
      $Gender = "Female";
      $Age_Group = "Birth";
      $Year = "2007";
      $CID = "1";
                $result = $stmt->execute ();
                echo $stmt->debugDumpParams().'\n'.var_export($stmt->errorInfo());
                $db = null; //closes pdo-connection
                if ($result)
                        return '("info": "ok")';
                else
                        return '("info": "nok")';
```

```
        } catch(PDOException $e) {

        return '{"error":{"text":'. $e->getMessage() .'}}';
        }
}
```

**9.3 Code for “index.php”**

```
<?php
header("Access-Control-Allow-Origin: *");
use \Psr\Http\Message\ServerRequestInterface as Request;
use \Psr\Http\Message\ResponseInterface as Response;
use Slim\Http\Body;
require 'vendor/autoload.php';
require 'db.php';
require 'functions.php';

$settings =  [
    'settings' => [
        'displayErrorDetails' => true,
    ],
];

$app = new Slim\App($settings);
/************************Country************************************
//get all Country Table Rows
$app->get('/Country',function (Request $request, Response $response) {
        $json = getAllCountry();
        $response->getBody()->write($json);
        return $response;
});
```

```
//Create Country Table Rows
$app->post('/Country',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createCountry($params);
        $response->getBody()->write($json);
        return $response;
});

// update Country Table Rows
$app->put('/Country',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateCountry($params);
        $response->getBody()->write($json);
        return $response;
});

// Delete Country Table by id
$app->delete('/Country/{id}',function (Request $request, Response $response) {
   $id = $request->getAttribute('id');
        $json = deleteCountry($id);
   $response->getBody()->write($json);
   return $response;
});

/************************Education**********************************
//get all Education Table Rows
$app->get('/Education',function (Request $request, Response $response) {
```

```
        $json = getAlleducation();
        $response->getBody()->write($json);
        return $response;
});
// Create Education Table Rows
$app->post('/Education',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createEducation($params);
        $response->getBody()->write($json);
        return $response;
});
// update Education Table Rows
$app->put('/Education',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateEducation($params);
        $response->getBody()->write($json);
        return $response;
});
// delete Education
$app->delete('/Education',function (Request $request, Response $response) {
    $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = deleteEducation();
    $response->getBody()->write($json);
    return $response;
});
```

```
/************************Employmet*********************************

//get all Employment Table Rows
$app->get('/Employment',function (Request $request, Response $response) {
        $json = getAlleducation();
        $response->getBody()->write($json);
        return $response;
});
// Create Employment Table Rows
$app->post('/Employment',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createEmployment($params);
        $response->getBody()->write($json);
        return $response;
});
// Update Employment Table Rows
$app->put('/Employment',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateEmployment($params);
        $response->getBody()->write($json);
        return $response;
});
// Delete Education Table Rows
$app->delete('/Employment',function (Request $request, Response $response) {
   $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
```

```
        $json = deleteEmployment();
    $response->getBody()->write($json);
    return $response;
});
/************************Health************************************

//Get all Health Rows
$app->get('/Health',function (Request $request, Response $response) {
        $json = getAllhealth();
        $response->getBody()->write($json);
        return $response;
});
// Create Health Table Rows
$app->post('/Health',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createHealth($params);
        $response->getBody()->write($json);
        return $response;
});
// update Health Table Rows
$app->put('/Health',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateHealth($params);
        $response->getBody()->write($json);
        return $response;
});
// Delete Health Table Rows
```

```
$app->delete('/Health',function (Request $request, Response $response) {
    $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = deleteHealth();
    $response->getBody()->write($json);
    return $response;
});
/************************Infrastracture*******************************
//get all Infrastracture Table Rows
$app->get('/infrastructure',function (Request $request, Response $response) {
        $json = getAllinfrastracture();
        $response->getBody()->write($json);
        return $response;
});

//Create Infrastracture Table Rows
$app->post('/infrastructure',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateInfrastructure($params);
        $response->getBody()->write($json);
        return $response;
});

// Update Infrastracture Table Rows
$app->put('/infrastructure',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
```

```
        $json = updateInfrastructure($params);
        $response->getBody()->write($json);
        return $response;
});

// Delete Infrastracture Table Rows
$app->delete('/infrastructure/{id}',function (Request $request, Response $response) {
   $id = $request->getAttribute('id');
        $json = deleteInfrastructure($id);
   $response->getBody()->write($json);
   return $response;
});

/************************Productive income*************************

//get all Productive Income Table Rows
$app->get('/Productive_income',function (Request $request, Response $response) {
        $json = getAllproductiveincome();
        $response->getBody()->write($json);
        return $response;
});
// Create Productive Income Table Rows
$app->post('/Productive_income',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createProductiveincome($params);
        $response->getBody()->write($json);
        return $response;
});
// Update Productive Income Table Rows
$app->put('/Productive_income',function (Request $request, Response $response) {
```

```
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateProductiveincome($params);
        $response->getBody()->write($json);
        return $response;
});
// Delete Productive Income Table Rows
$app->delete('/Productive_income',function (Request $request, Response $response) {
    $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = deleteProductiveincome();
    $response->getBody()->write($json);
    return $response;
});

/************************Quality of life*****************************
//get all from Quality of life table row
$app->get('/Quality_of_life',function (Request $request, Response $response) {
        $json = getAllquality_of_life();
        $response->getBody()->write($json);
        return $response;
});
// Create Quality_of_life table row
$app->post('/Quality_of_life',function (Request $request, Response $response) {
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createQualty_of_life($params);
        $response->getBody()->write($json);
```

```
        return $response;
});
// update Quality_of_life table row
$app->put('/Quality_of_life',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateQuality_of_life($params);
        $response->getBody()->write($json);
        return $response;
});
// delete Quality_of_life table row
$app->delete('/Quality_of_life',function (Request $request, Response $response) {
   $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = deleteQuality_of_life();
   $response->getBody()->write($json);
   return $response;
});

/************************Survival*****************************

//get all  Survival table rows
$app->get('/Survival',function (Request $request, Response $response) {
        $json = getAllsurvival();
        $response->getBody()->write($json);
        return $response;
});
// Create  Survival Table row
$app->post('/Survival',function (Request $request, Response $response) {
```

```
        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = createSurvival($params);
        $response->getBody()->write($json);
        return $response;
});
// update Survival Table row
$app->put('/Survival',function (Request $request, Response $response) {

        $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = updateSurvival($params);
        $response->getBody()->write($json);
        return $response;
});
// delete Survival Table row
$app->delete('/Survival',function (Request $request, Response $response) {
   $body = $request->getBody();
        $params = json_decode($body);
        var_dump($params);
        $json = deleteSurvival();
   $response->getBody()->write($json);
   return $response;
});

$app->run();
```