HIV DATASET OVERVIEW SOUTHEAST ASIA

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ITC 6000 – DATABASE MANAGEMENT SYSTEM

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INTRODUCTION

- HIV incidence in Southeast Asia region from 2007 -2016
- The dataset has been collected for 11 Countries namely

  Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Timor-Leste(East Timor) , Vietnam, Philippines, Thailand, Singapore
- The main purpose of this report is to understand the various attributes that can be used to analyze and find HIV infection rates as well as suggest appropriate HIV policies for future HIV interventions.
- People living with HIV are not allowed to enter or stay in Brunei Darussalam

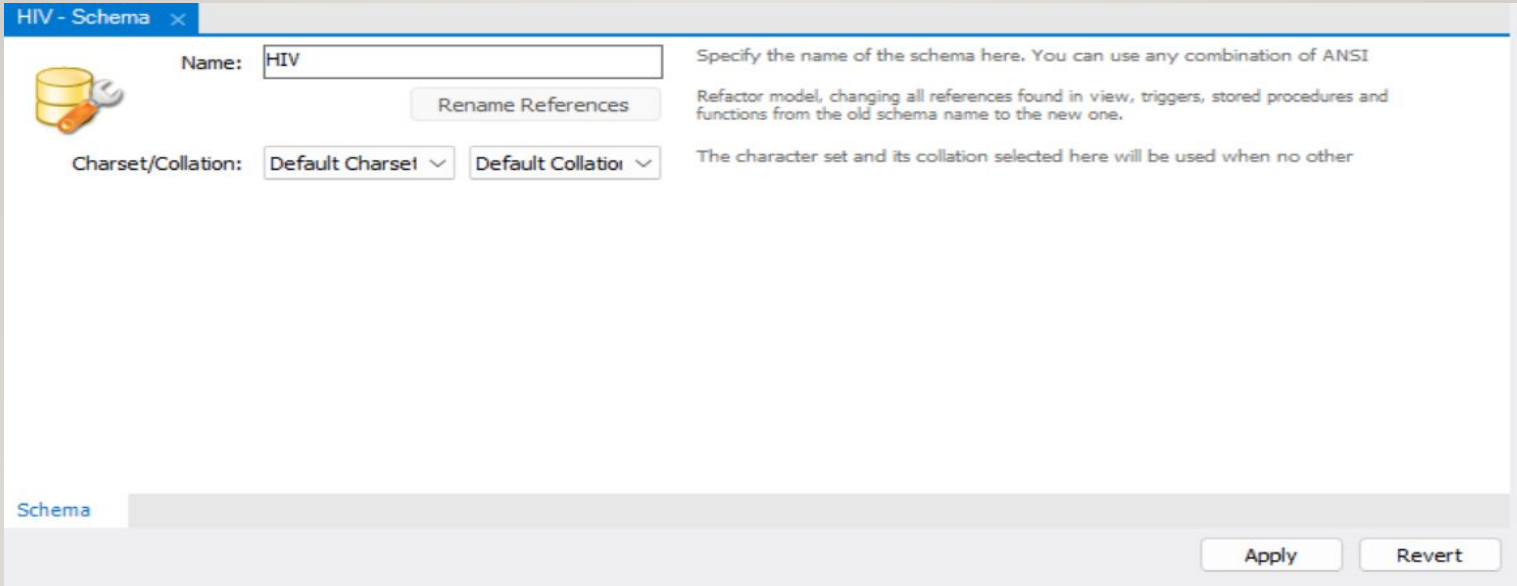
DATA SOURCE & TOOLS USED

- UNICEF
- World Bank
- UNAIDS
- Statisa

Tools Used

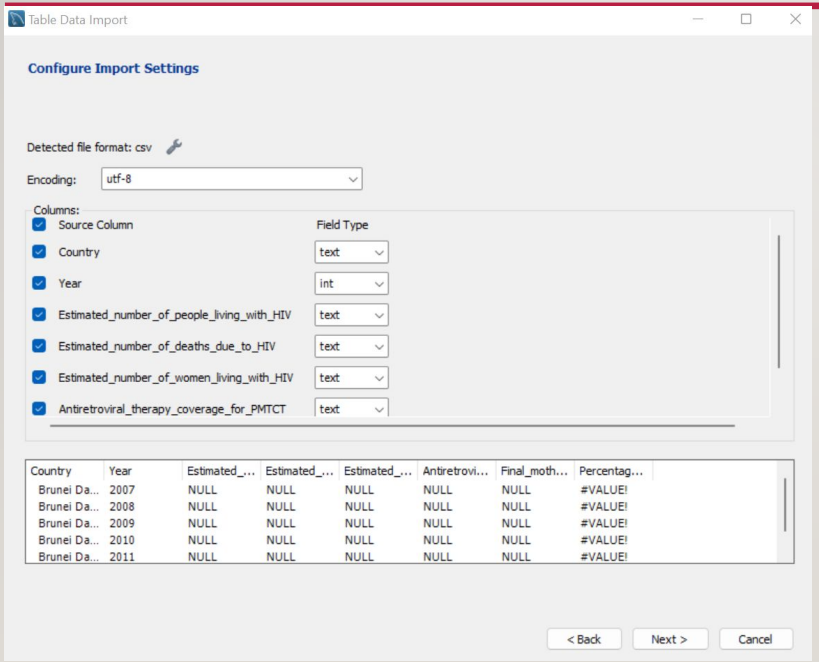
- Excel
- MySql
- DbBrowser

CREATE SCHEMA



We have created a schema named HIV in MySQL.

CREATE AND EXPORT TABLE



- This is a Table data import wizard. If we want we can change the Datatype here.
- 2 Tables named hiv1 and country are imported to MySQL.

JOINING TABLE'S

country | hiv1

Limit to 1000 rows

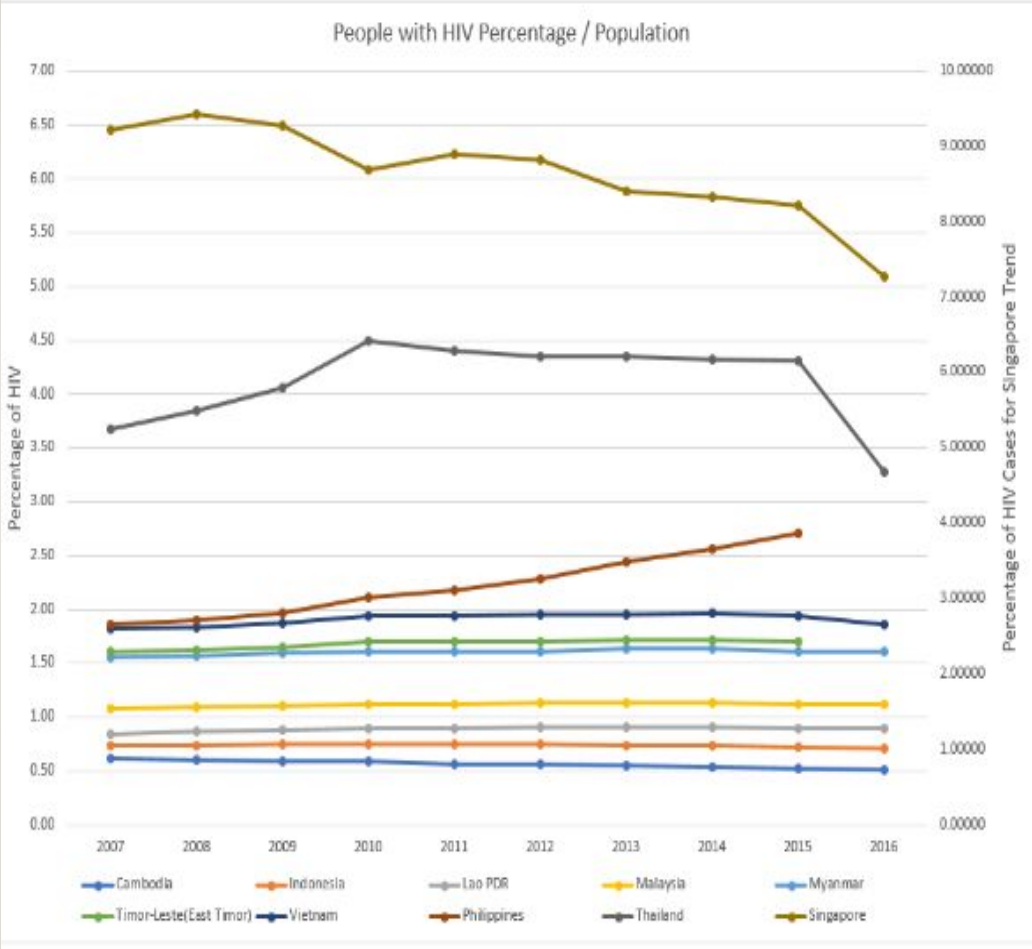
```
1  SELECT * FROM hiv.hiv1;
2  SELECT   a.Country,
3           a.Year,
4           a.Estimated_number_of_people_living_with_HIV,
5           b.Country_Population,
6           (a.Estimated_number_of_people_living_with_HIV /  b.Country_Population)*100 as percentage_living_with_HIV
7           FROM
8           hiv.hiv1 a JOIN hiv.country b ON a.Country = b.Country and a.year = b.year
9
```

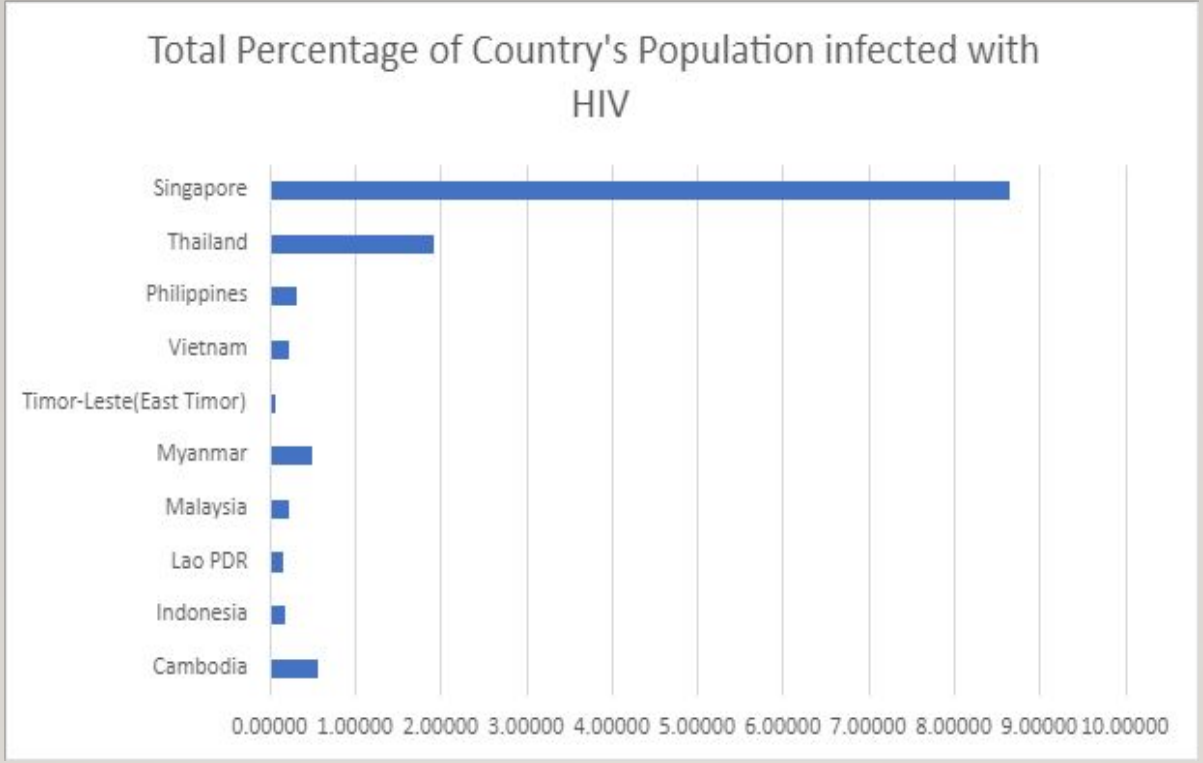
Country	Year	Estimated_number_of_people_living_with_HIV	Country_Population	percentage_living_with_HIV
Brunei Darussalam	2014	NULL	409778	NULL
Brunei Darussalam	2015	NULL	414914	NULL
Brunei Darussalam	2016	NULL	419791	NULL
Cambodia	2007	84000	13714791	0.6124774340345398
Cambodia	2008	84000	13943888	0.6024144772247166
Cambodia	2009	84000	14155740	0.5933988615218986
Cambodia	2010	84000	14363532	0.5848143757398946
Cambodia	2011	83000	14573885	0.5695118357253403
Cambodia	2012	83000	14786640	0.5613175136474547
Cambodia	2013	82000	14999683	0.5466782197997118
Cambodia	2014	81000	15210817	0.532515774793688
Cambodia	2015	80000	15417523	0.518890096677657
Cambodia	2016	79000	15624584	0.5056134614527977
Indonesia	2007	290000	234858289	0.123478716137628
Indonesia	2008	330000	237936543	0.13869244120269494
Indonesia	2009	370000	240981299	0.15353888518959308
Indonesia	2010	410000	244016173	0.16802164994203067

- To calculate the percentage of people living with HIV we have to join the two tables we created namely hiv1 and country. The two tables are joined on "Country" and "year".

Trend graph for percentage of people living with HIV Country wise

- From the graph, we can notice Singapore had a really high percentage of people living with HIV back in 2007 with a total of 9.21% of the population having HIV. This was greatly reduced to 7.27% in 2016.
- Nearly HIV cases are decreasing in every South-eastern Asian country except the Philippines.





- This Bar-chart also shows the percentage of Countries population living with HIV.
- But, This is the average percentage of years 2006 to 2017. This chart clearly shows that Singapore is the highest infected Country

PERCENTAGE OF DEATHS DUE TO HIV

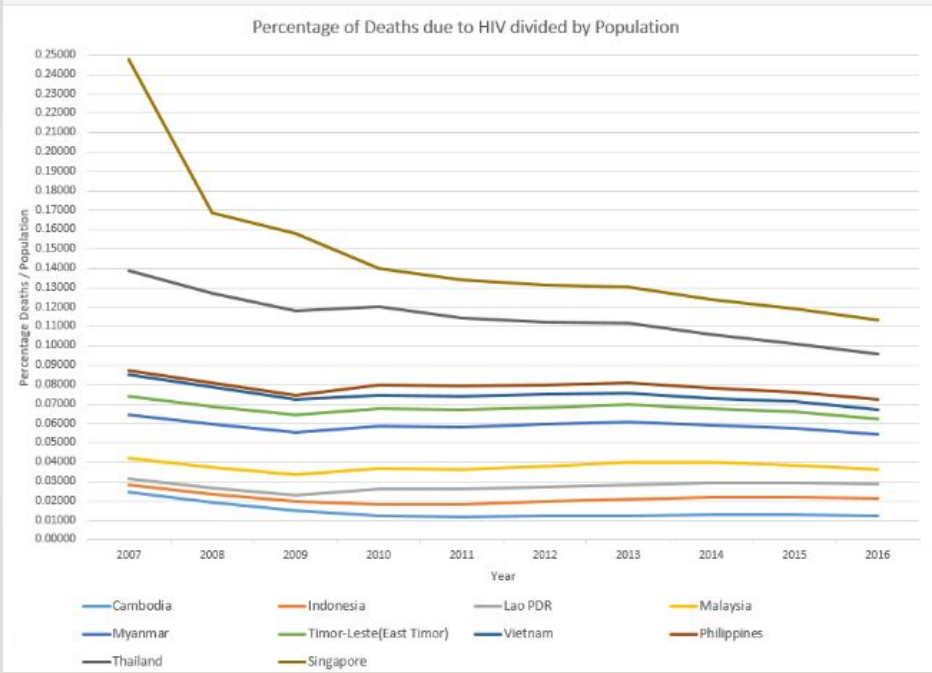
```
SELECT * FROM hiv.hiv1;
SELECT   a.Country,
         a.Year,
         a.Estimated_number_of_people_living_with_HIV,
         b.Country_Population,
         (a.Estimated_number_of_deaths_due_to_HIV/  b.Country_Population)*100 as percentage_of_deats_due_to_HIV
         FROM
         hiv.hiv1 a JOIN hiv.country b ON a.Country = b.Country and a.year = b.year
```

Country	Year	Estimated_number_of_people_living_with_HIV	Country_Population	percentage_of_deats_due_to_HIV
Cambodia	2007	84000	13714791	0.02479075328235042
Cambodia	2008	84000	13943888	0.019363322482223035
Cambodia	2009	84000	14155740	0.014834971538047463
Cambodia	2010	84000	14363532	0.012531736622997742
Cambodia	2011	83000	14573885	0.011664700249796125
Cambodia	2012	83000	14786640	0.012173150898378537
Cambodia	2013	82000	14999683	0.012666934361212832
Cambodia	2014	81000	15210817	0.013148537649226863
Cambodia	2015	80000	15417523	0.012972252416941426
Cambodia	2016	79000	15624584	0.012160323756459692
Indonesia	2007	290000	234858289	0.0034063094106931866
Indonesia	2008	330000	237936543	0.004160773236080849
Indonesia	2009	370000	240981299	0.004979639519662478

- Similarly we use the two tables “hiv1” and “country” and join it on “Country” and “Year”. By dividing estimated number of deaths due to HIV by country population we can get percentage of deaths due to HIV.

Trend graph for percentage of deaths due to HIV Country wise

- We can infer from the graph that the percentage of deaths due to HIV was really high in Singapore back in 2007 but was soon greatly controlled by 2016. This shows us the policies applied enforced by Singapore have been really useful in greatly reducing the death rates in their country. Whereas Malaysia saw a gradual increase in the death percentage in the years 2010-2014. Which was later controlled by 2016.



COMPARING WITH GDP AND UNEMPLOYMENT

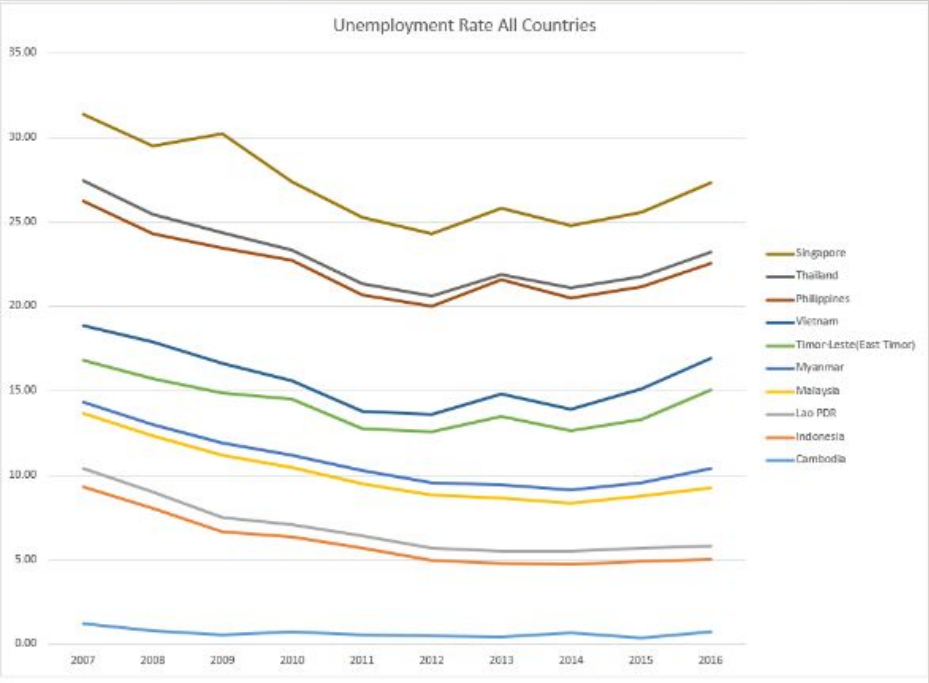
```
SELECT * FROM hiv.hiv1;
SELECT  a.Country,
        a.Year,
        a.Estimated_number_of_people_living_with_HIV,
        b.Country_Population,
        b.GDP_per_capita,
        b.unemployment_rate,
        (a.Estimated_number_of_people_living_with_HIV /  b.Country_Population)*100 as percentage_living_with_HIV
        FROM
        hiv.hiv1 a JOIN hiv.country b ON a.Country = b.Country and a.year = b.year
```

Country	Year	Estimated_number_of_people_living_with_HIV	Country_Population	GDP_per_capita	unemployment_rate	percentage_living_with_HIV
Brunei Darussalam	2013	NULL	404414	44740.86	6.88	NULL
Brunei Darussalam	2014	NULL	409778	41725.87	6.97	NULL
Brunei Darussalam	2015	NULL	414914	31164.04	7.79	NULL
Brunei Darussalam	2016	NULL	419791	27158.41	8.38	NULL
Cambodia	2007	84000	13714791	631.53	1.26	0.6124774340345398
Cambodia	2008	84000	13943888	745.61	0.82	0.6024144772247166
Cambodia	2009	84000	14155740	738.05	0.58	0.5933988615218986
Cambodia	2010	84000	14363532	785.5	0.77	0.5848143757398946
Cambodia	2011	83000	14573885	882.28	0.58	0.5695118357253403
Cambodia	2012	83000	14786640	950.88	0.51	0.5613175136474547
Cambodia	2013	82000	14999683	1013.42	0.44	0.5466782197997118
Cambodia	2014	81000	15210817	1093.5	0.69	0.532515774793688
Cambodia	2015	80000	15417523	1162.9	0.39	0.518890096677657
Cambodia	2016	79000	15624584	1269.59	0.72	0.5056134614527977
Indonesia	2007	290000	234858289	1860	8.06	0.123478716137628
Indonesia	2008	330000	237936543	2166.85	7.21	0.13869244120269494

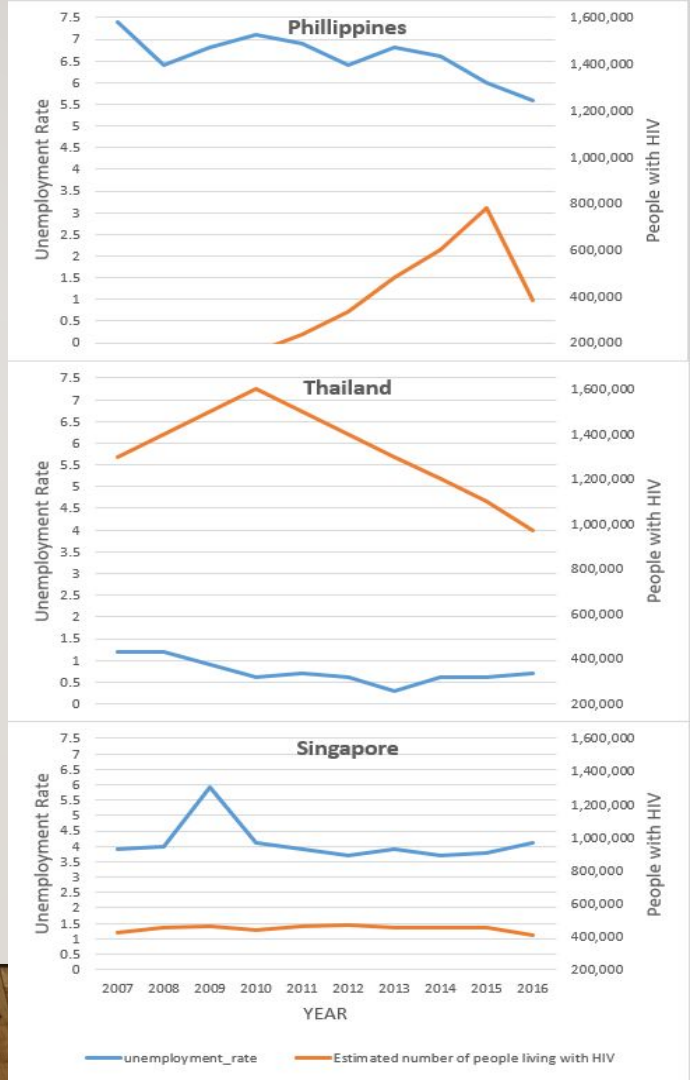
- GDP and Unemployment are present in the Country table. So, by again joining the two tables we can compare the percentage living with HIV with the above two.

Trend graph for Unemployment Rate Country wise

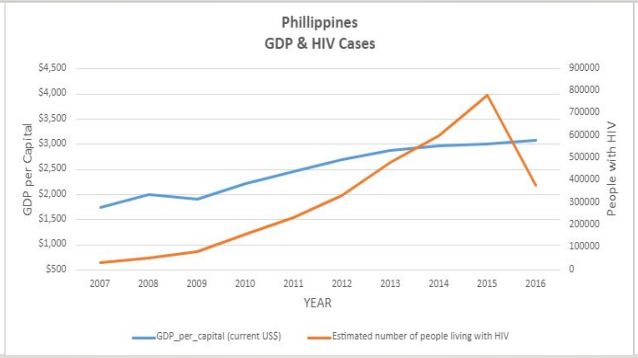
This graph shows that unemployment rates in each Southeast Asian country are decreasing till 2012 only and then increased again till 2016.

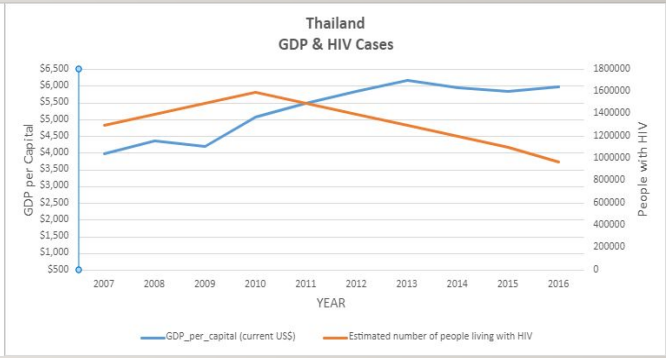


- This combo chart shows us the unemployment rate compared to people with HIV in the Philippines, Thailand, and Singapore.
- We have chosen the above countries as they have the highest unemployment rates in Southeast Asian Countries.
- Looking at the graphs we can infer that the number of people infected with HIV increased and the unemployment rates decreased by 2016 in the Philippines. Whereas in Thailand even though the number of infected people reduced from 2014 to 2016 the unemployment rate kept on increasing. This is a peculiar case since the number of infected should logically speaking be inversely proportional to the unemployment rate as being unemployed is bound to make people less responsible and more susceptible to diseases.



GDP & HIV Cases





- This Combo Chart shows the comparison of GDP per Capita with HIV Cases in the 3 Countries we choose earlier.

- From the graphs we can infer that the GDP per capita in all the countries chosen has increased over the years. We can also notice a pattern of a gradual decrease in the estimated number of people infected with HIV. So we can say GDP is inversely proportional to the number of people infected. Due to its highest population, we can say that Singapore has the highest GDP per capita.

RECOMMENDATIONS

- A growing GDP will help decrease the number of people infected. This means that with a growing GDP a nation is able to provide more medical support to its citizens and raise more awareness amongst the public regarding dangerous diseases.
- Raise awareness and expand antiretroviral treatment coverage.
- The government needs to pay attention to people's livelihood and implement a reduction or exemption policy for basic HIV test
- Every man from 18-25 need to do a HIV test every 6 months

CONCLUSION

- We may conclude from the above study and analysis that unemployment rates in each Southeast Asian country are decreasing till 2012 only and then increased again till 2016 irrespective of the decline in HIV cases.
- With the increase in the country's GDP we can notice a clear decrease in the number of death's due to HIV and there is a significant decline in the death percentage.
- With the above graphs we can concluded that increase in a country GDP has a positive effect on the number of people infected by HIV.
- With the increase in population, HIV cases are decreasing in every Southeast Asian country except the Philippines.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Thank you !