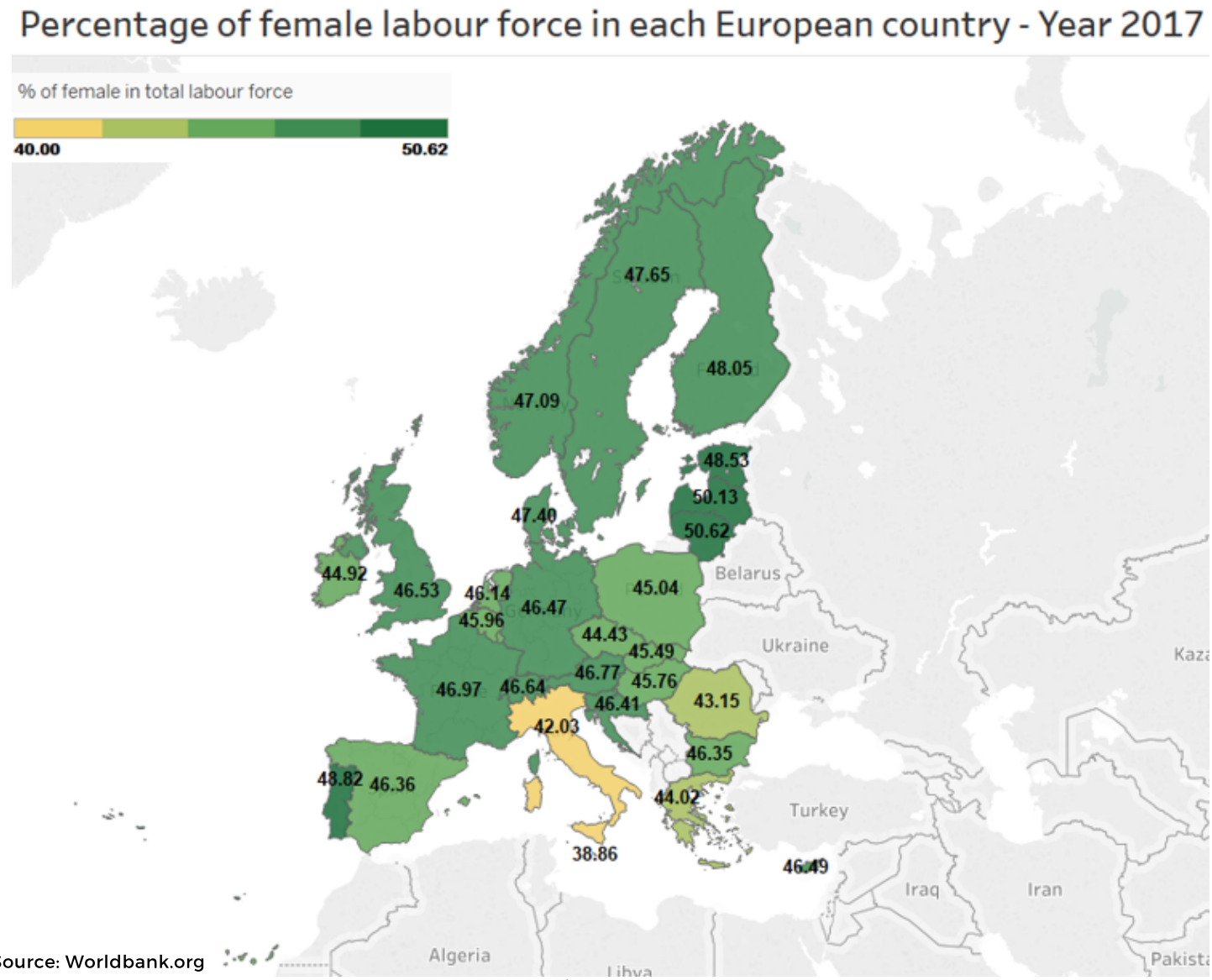
WOMEN TOWARDS GROWTH - IRELAND'S IMPACT

A STATISTICAL REPORT

By Sindhujan Dhayalan
X17170265
MSc - Data Analytics
National college of Ireland



Source: Worldbank.org

Figure 1

Introduction

The Year 2017, Is another year women empowerment is taking a step further forward. Women occupy nearly half of the labour force in the European countries as per data released by the world bank for the year 2017. About 45% of labour force in Ireland are women, An average percent compared to other European countries. The Scandinavian countries have higher side of percentage, all of them ranging around 47%. The highest though is Lithuania having 50.62 % of female labour force. Malta being the lowest in Europe only having 38.86 percent of female work force.

Women are working equally to men for the welfare of the country and themselves. They have a major impact to country's growth. Personally women are being independent and financially stable in the recent years.

But where do the female labour force work ? what do they contribute? How do they get benefited? Does the future looks more blooming? Data is the only source to answer and predict. Lets analyze data in the following sections of this article about the employment, education, health and financial stability of women.

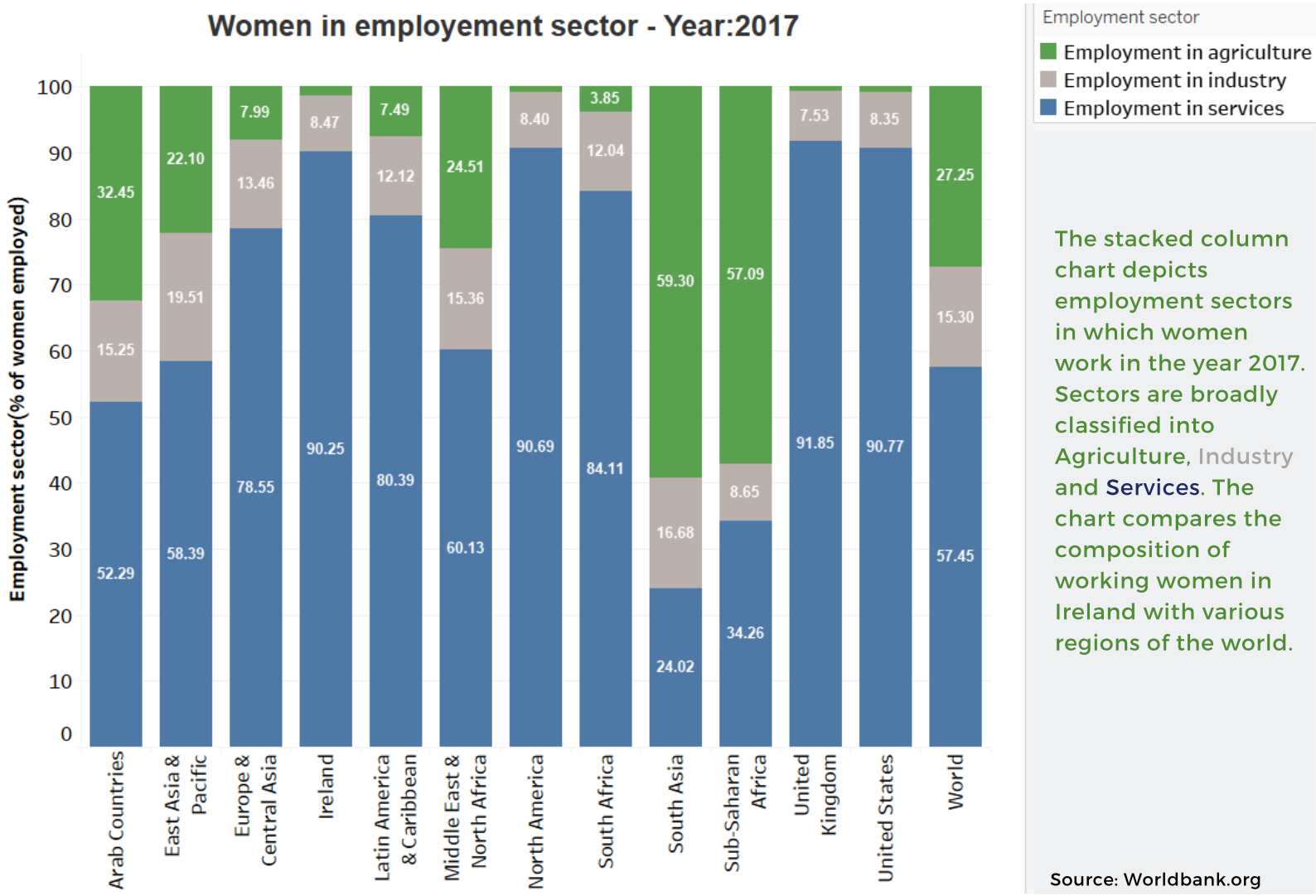


Figure 2

The stacked column chart depicts employment sectors in which women work in the year 2017. Sectors are broadly classified into Agriculture, Industry and Services. The chart compares the composition of working women in Ireland with various regions of the world.

Source: Worldbank.org

Employment

Women are mostly working in the services sector as per data visualized. The dominant towering blue bars in the chart infer that employment opportunities and preferences of women are towards the service sectors in the most countries. 90.25% of employed women in Ireland are in service sectors, the percent figure is 4th compared to 90.69% of North America, 91.85% of United Kingdom and 90.77% of United States. Most of these regions are high income developed countries enriched with large amount information and technology companies. These tech giants are one of the major reason for high rise in women employment in the recent years. Ireland certainly being benefited from them.

Regions such as South Asia and Sub-Saharan Africa have more than 55% of women working in agricultural sector. Either the interest of the south Asian and Saharan African women are focused on agriculture or this maybe due to low employment and insufficient skill set available in service sector in these regions.

Industrial sector in all the regions including Ireland have only around 10-15% of women workforce. Industrial tends to be men dominant sector over all the regions recorded in 2017. The amount of physical work requirement in the industrial sector must be the reason for it having more male work force.

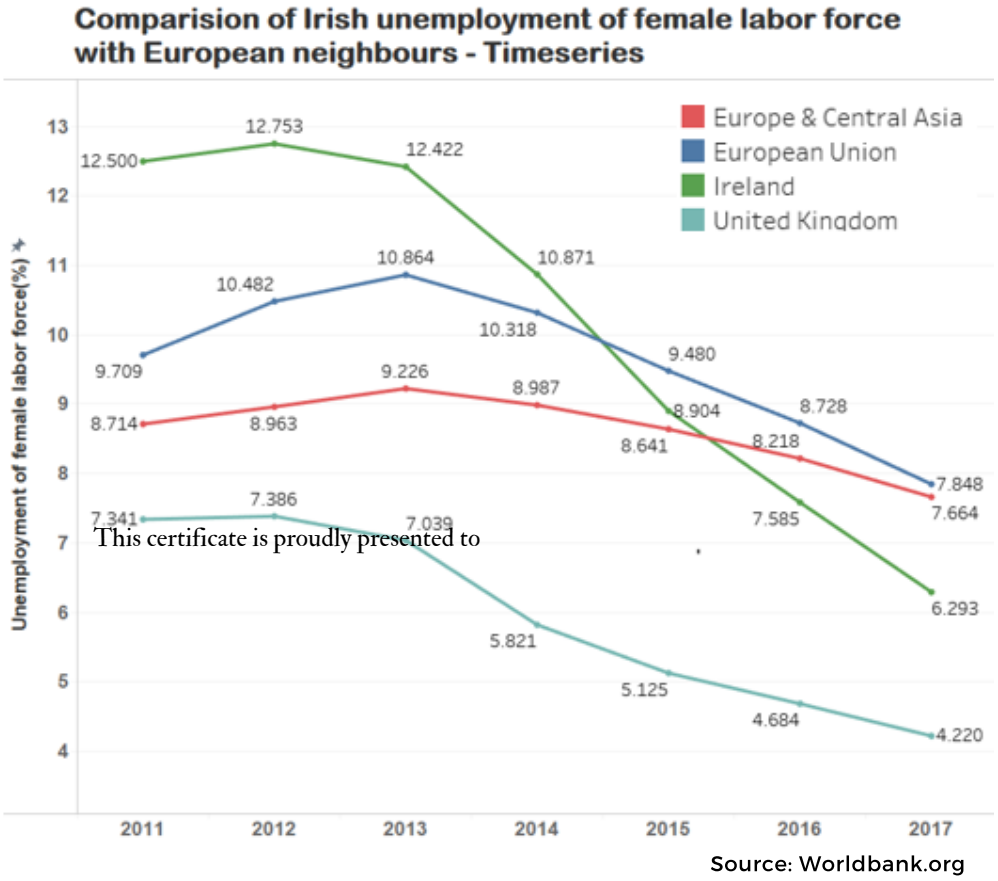


Figure 3

Unemployment of female labour force in Ireland is 6.3 percentage in 2017. It has dropped drastically over 6% from 12.5% percentage recorded in 2011. Comparing the number with neighboring countries, There is a similar pattern of decrease in unemployment from 2014 in European regions. United Kingdom having only 4.2 % of unemployed female workforce. Future predictions are that Ireland is likely to drop further below United kingdom as rate of fall of women unemployment is higher for Ireland in the recent years depicted in the line chart.

Women labour force has increased and has seen a positive turn over the recent year. This has not only developed the life style and welfare of women in ireland, but increased the overall country's value

Figure 3 displays a hybrid chart comparing Age dependency ratio visualized using bars versus the GDP visualized using area chart.

Age dependency ratio is ratio of people not in labour force(ages 0 to 14 and 65+) to the people considered in labour force(ages 15-64). There is a correlation between age dependency ratio and GDP of a country. From the hybrid chart, it can be inferred that Ireland's age dependency ratio has increased from 48.22% in 2011 to 55.19% in 2017. This increase directly had a positive impact on the GDP of the country with 100B(US$) annual increase from 2011 to 2017 GDP.

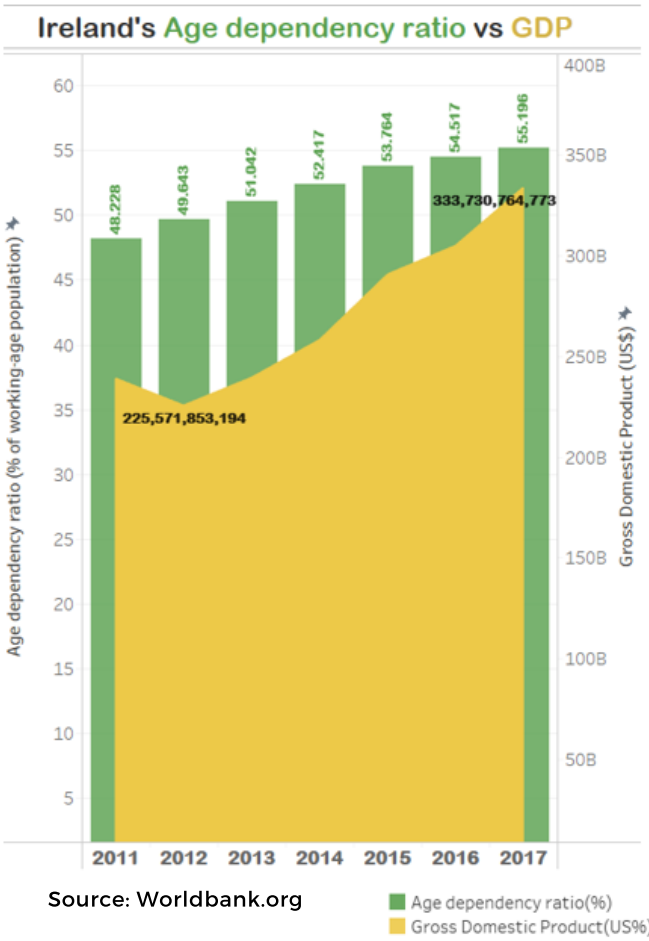


Figure 4

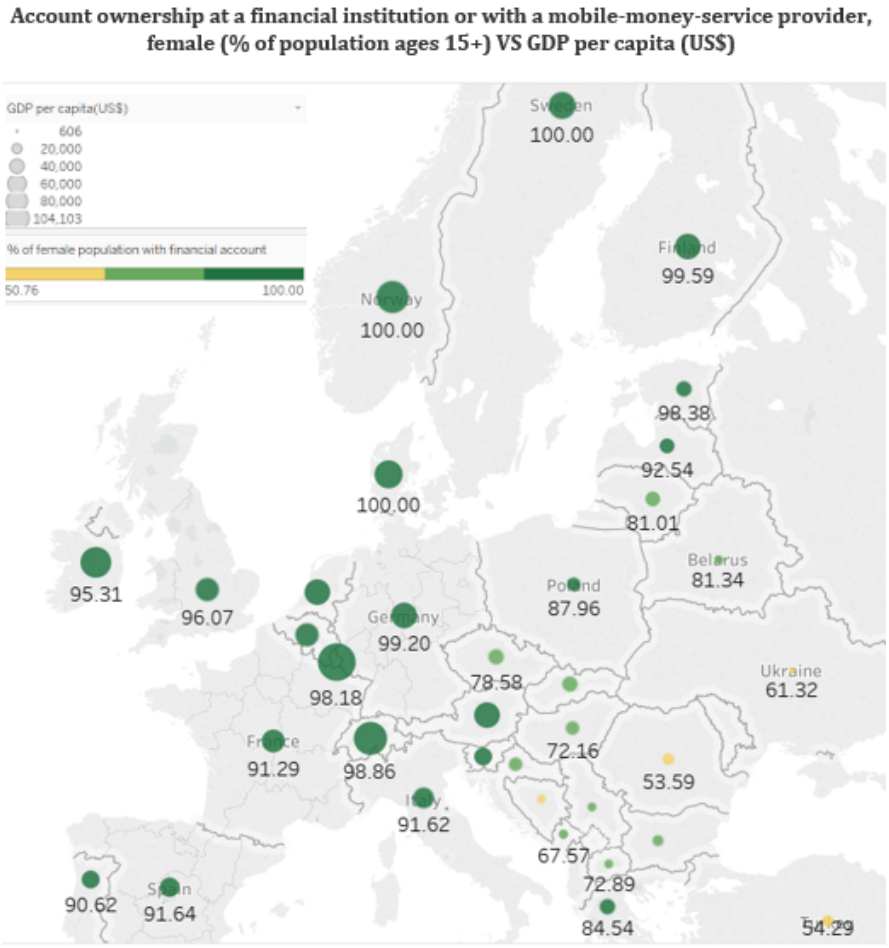
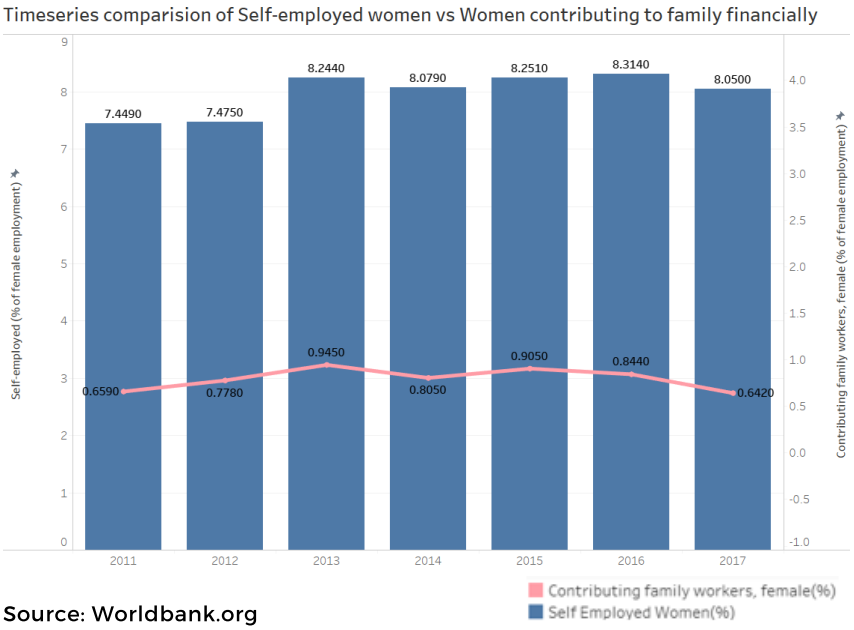


Figure 5

Growth in GDP of a country should be directly increasing the lifestyle of people. Increase in the economic value of the country should increase people financial situation. The symbol map compares the GDP per capita versus % of female labour force having an financial account. The Size of the circle shape indicates the value of GDP and Change in colour shades from yellow to green indicates larger percentage of female labour force having an financial account. Figure 5 shows a strong correlation between the variables as the larger circles are having dark green colour shade and smaller circles are in shade of yellow meaning lesser number of financial accounts. 95.31% of women in Ireland above the age 15 have financial account.

Source: Worldbank.org

Not all women prefer 9-5 routine office work, Some create job, some are self employed. The Hybrid Bar-Line chart compares percentage of self- employed women versus percentage of contributing female family workers over a time-series between 2011 to 2017. The correlation between the variable are exactly similar, As the pattern of line and bars of the variables exactly increase and decrease in the range of years measured.



Source: Worldbank.org

Figure 6

Net enrollment rate (% of primary school age female children)

Country	Year						
	2011	2012	2013	2014	2015	2016	2017
Arab Countries	83.05	83.99	82.81	82.47	82.85	83.32	83.69
East Asia & Pacific	97.00	96.60	96.23	96.12	95.94	95.63	95.66
Europe & Central Asia	96.82	96.95	97.21	97.08	97.28	97.24	97.33
European Union	98.19	98.34	98.39	98.16	98.17	98.10	98.10
Latin America & Caribbean	96.50	96.54	96.09	95.82	95.82	95.96	95.85
Middle East & North Africa	93.37	94.09	92.87	92.25	92.58	92.76	93.11
South Asia	92.04	92.50	92.72	92.77	92.94	93.21	92.87
Sub-Saharan Africa	74.23	75.06	75.68	76.13	76.17	76.43	76.49
World	90.16	90.32	90.27	90.25	90.23	90.27	90.19

% Enrollment rate

74.23 98.39

Source: Worldbank.org

Figure 7

Education

Education is base of creating a better future for women. The rise of employment and women work force is due to improvement in education level and skill sets of women, Education should start from an early age. The world must focus on every child to be educated. The highlight table in figure 7 displays net enrollment rate(%) of female children for primary school over different regions.

The Chart correlates with all the charts in the employment section. The regions with higher % of enrollment of female children to primary school have the higher female work force employed.

The Sub-Saharan Africa region has the lowest % ranging around 75% compared to other regions with healthy 90% and above. Excluding the arab countries which are averaging in lower 80's over the period of 2011-2017. The European region are having 98% of female children enrolling to school resulting in better employment in future.

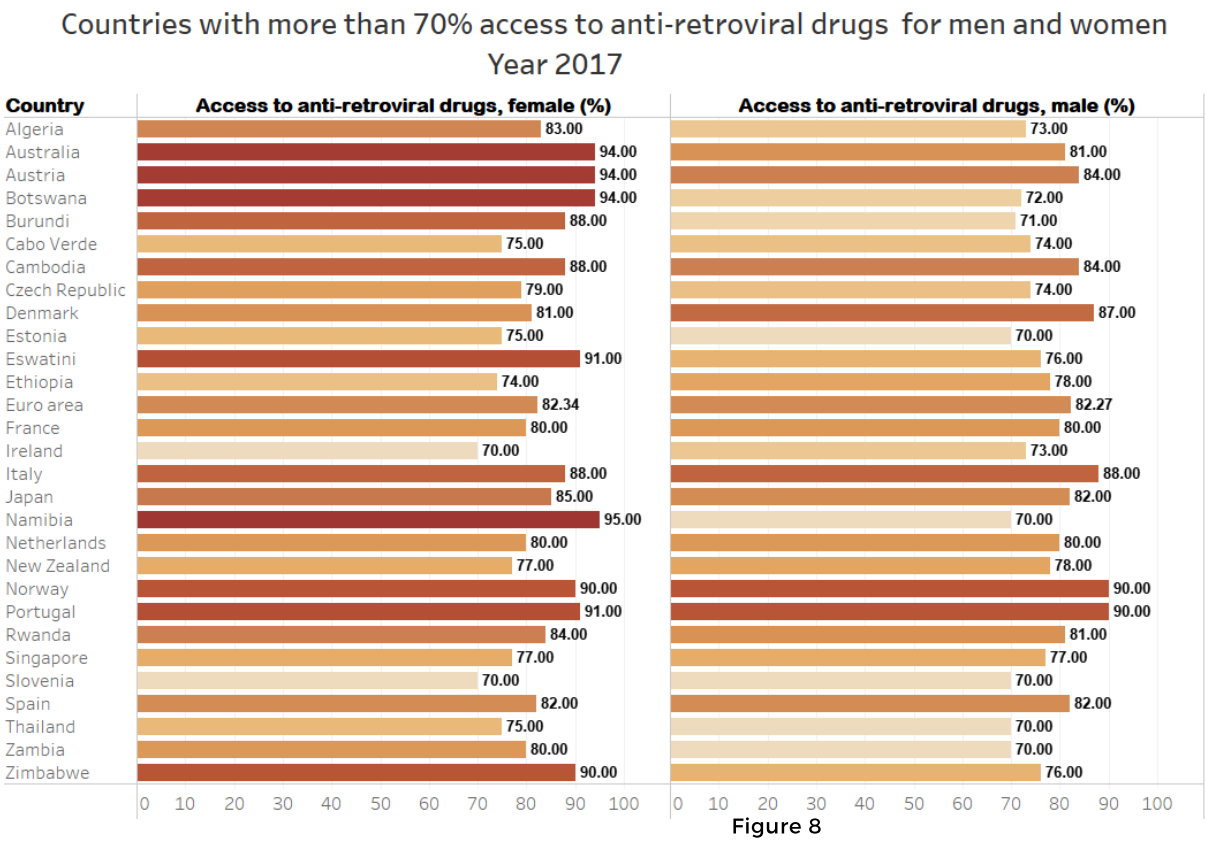


Figure 8

Anti-retro viral drugs are a group of drugs that restrain different stages in the HIV replication process. They are used in suppressing the HIV infection but they do not eliminate it entirely from the body. The popularity of ARVs has reduced the sickness and deaths due to HIV in the recent years. Resulting in better lifestyle and improved life span of HIV infected people (myvmc.com) . the horizontal bars chart depicts the access to anti-retro-viral drugs for men and women in different countries.

Source: Worldbank.org

Health

In 2017, Around 33 percentage of women's share of population above the age of 15 are living with HIV% in Ireland. the number seems a concerning, but the rate is gradually increasing compared to 38% recorded in 2011. With growing economy of Ireland and the value of women contribution to the growth should make the government focus more on reducing this alarming rate.

The horizontal bar chart displays the countries with more than 70% access to anti-retro viral drugs to males and females. Comparatively females have better access to the drugs than males but its is concerning to see many countries with only 70% of people having access to the drugs to a deathly disease. Only 70% of Ireland women and 73% of Ireland men have access to ARVs. Which is concerning figures and government soon have to act upon it.

The Vertical bar chart displays the gradual fall in the percentage of women with HIV living in Ireland above 15 years. the range is in concerning 30's but have fell from 38% in 2011 to 33.5 % n 2017.

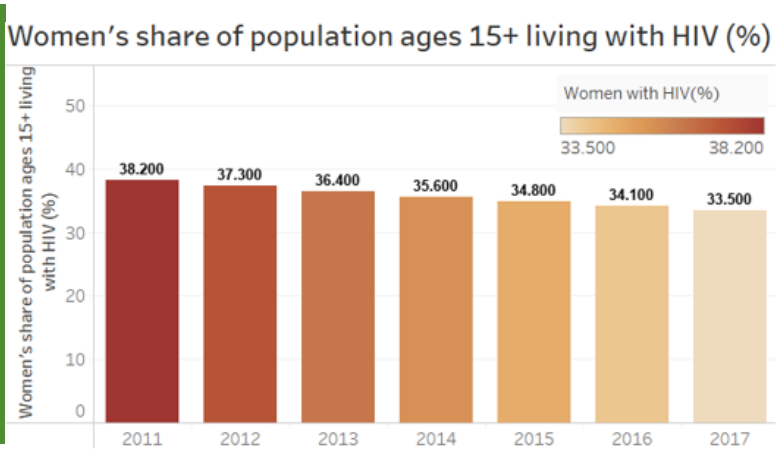


Figure 9

Source: Worldbank.org

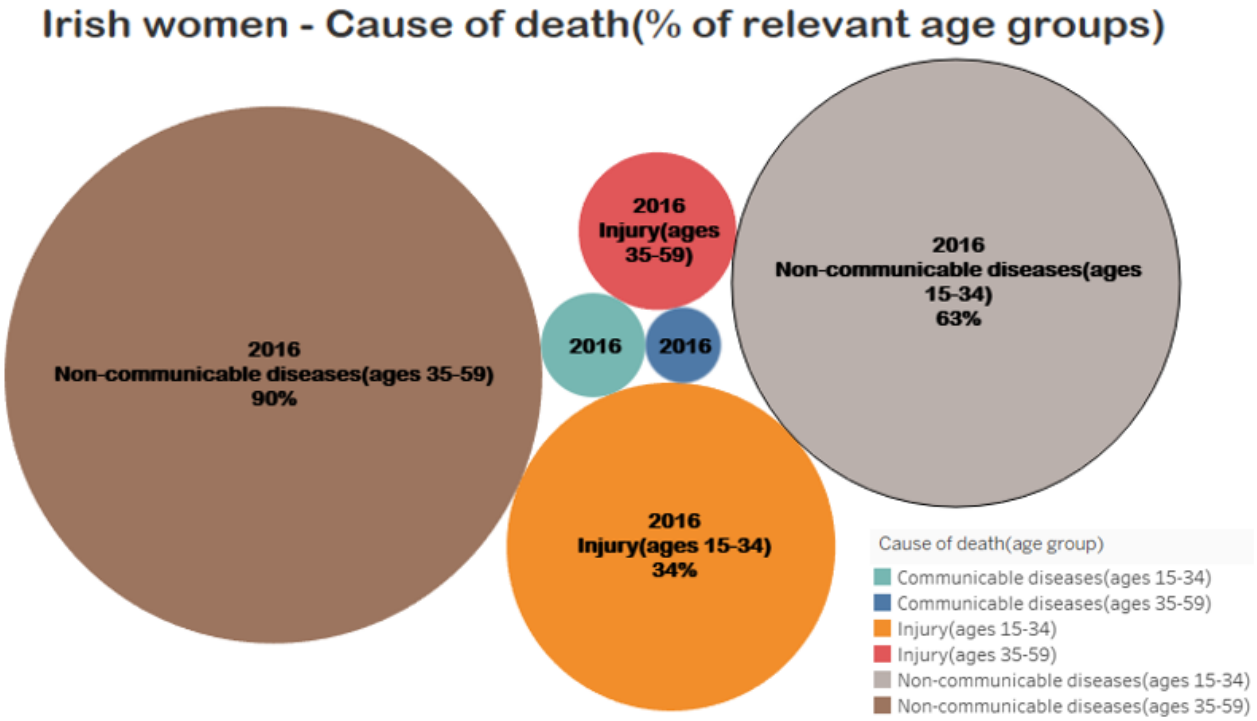


Figure 10

Packed bubble chart displays the causes of deaths to women in age groups of (15-34) and (35-59) over the period 2016. the causes of death are broadly classified into Communicable diseases, non-communicable diseases and Injury.

Death is result of deteriorated health, It can occur by a sudden injury or a health problem. It is inferred from the chart that most of women in both the age group(15-34) and (35-59) died because of non-communicable diseases in the year 2016. But the younger age group have 63 % of death through non-communicable diseases and also have about 34 % of death through injury. Compared to 8% death rate of older age group(35-59) due to injury. Where as 90% of people in the age group (35-59) have died due non-communicable diseases.

Figure 1

This alerts us that the younger age group are more prone to death through injuries. this may be an sudden accident or a suicide, etc..
It is rare for people living above 34 years old to die of a communicable disease compared to people under 34 years. But both are less likely as the figures are 2% and 3% respectively.

Pre-mature deaths can be prevented by taking pre-cautions to avoid injuries and living a healthy life style to prevent non-communicable diseases as per the recorded deaths in 2016 published by the world bank.

Conclusion

Employment, financial stability, Education and health are all positively increasing from the recent years and it has recorded the same in the year 2017 for Irish women. Data has proved Ireland's value as a country increases with increase in welfare of country's woman labour force, From the time-series charts visualized, it is easy to visually forecast a better future for women in Irish employment sector. The whole of Europe's education system has strong basement of 98% of female children enrolled to primary school which can only increase to 100% in future. Health wise, affordability and accessibility of drugs for deadly diseases has to improve.

Appendix

Figure 1 - MAP chart.
MAP chart is used as one of the dimension is country and Visually easy to compare and understand the range of values between different countries in Europe.

Figure 2 - Stacked column chart.
Used to visualize the composition of different parameter adding up to 100%.

Figure 3 - Line chart.
Used to compare categories over a time-series

Figure 4 - Hybrid chart designed with Column chart and area chart. Column chart was used to compare variable1 over a period of time. Area chart was used to compare variable2 over a period of time. Both charts were super imposed to show the correlation between them.

Figure 5 - Symbol MAP chart.
Used as one of the dimension is country and it was necessary to cover entire European countries in a single chart easy to understand. Circle shape size and colour variation were used to show the correlation between two separate parameters.

Figure 6 - Hybrid chart designed with Column chart and line chart. Column chart was used to compare variable1 over a period of time. Line chart was used to compare variable2 over a period of time. Both charts were super imposed to show the correlation between them.

Figure 7 - Packed Bubble chart
Used to show a composition of multiple variables over a single dimension

Figure 8 - Bar chart
Used to compare one variable with 2 categories with many items.

Figure 9 - Column chart
Used to compare one variable over a period of time

Figure 10 - Highlight table chart
Used to compare values of multiple categories and highlight the variations.

All the figures were visualized using **tableau**.

References

https://datacatalog.worldbank.org/dataset/gender-statistics

http://datatopics.worldbank.org/gender/publications

https://www.myvmc.com/treatments/antiretroviral-therapy-anti-hiv-drugs/

Data Visualisation: A Handbook for Data Driven Design - Andy Kirk

https://onlinehelp.tableau.com/current/pro/desktop/en-us/datafields_dwfeatures.htm

https://stackoverflow.com/questions/4605206/drop-data-frame-columns-by-name

Source

https://datacatalog.worldbank.org/dataset/gender-statistics

Software used:

Data pre processiing: R Studio
Visualisation : Tableau

R Code

```
library(reshape)
B <- read.csv("C:/Users/sindh/Desktop/Gender_StatsData.csv")
B <- B[-c(2,4,5:55)]
B$X <- NULL
B$X2018 <- NULL
B[is.na(B)] <- 0
B = melt(B, id = c("ï..Country.Name", "Indicator.Name"))
colnames(B) <- c('Country','Indicator','Year','Value')
B$Year <- gsub('X','',B$Year)
B$Year <- as.factor(B$Year)
summary(B)
write.csv(B,file = "C:/Users/sindh/Desktop/Gender.csv")
View(B)
```