Does Venezuela tend to have lower Net Enrolment Rate in Secondary Education than other countries?

Lim Jacob

Dataset

World Development Indicators Dataset

Motivation

Education is a fundamental pillar of human development and societal progress. Access to quality education empowers individuals, drives economic growth, and fosters social cohesion. In the context of Venezuela, understanding the state of education and its comparative standing among other countries is of utmost importance. By exploring whether Venezuela tends to have lower Net Enrolment Rates than other countries, we can gain valuable insights into the state of education in Venezuela and its potential implications. This analysis can contribute to our understanding of the challenges and opportunities in the Venezuelan education system and inform efforts to improve educational outcomes for future generations.
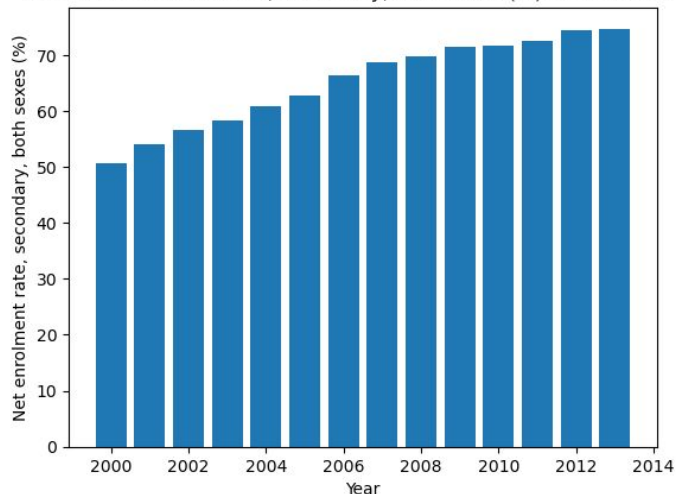
Research Question(s)

What is the trend of Net Enrolment Rate for Secondary Education in Venezuela over the years?

Does Venezuela tend have lower Net Enrolment Rate for Secondary Education than other countries?
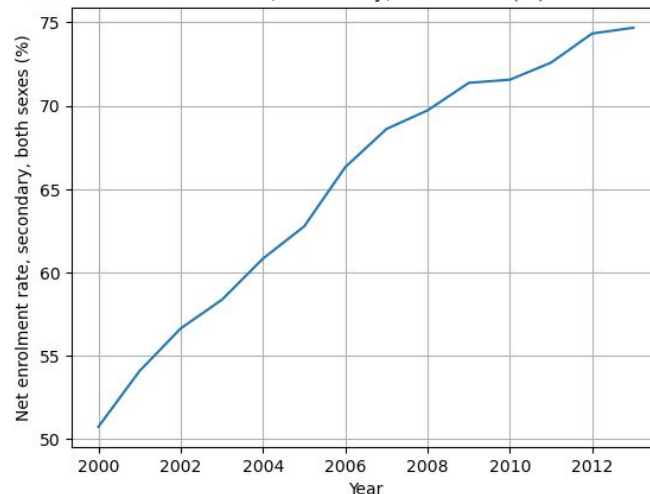
Findings

VEN - Net enrolment rate, secondary, both sexes (%) from 2000-2013

VEN - Net enrolment rate, secondary, both sexes (%) from 2000-2013

Generally, Venezuela's net enrolment rate for secondary education, both sexes (%) has been increasing consistently throughout the years(2000-2013), with no anomaly. This suggests that more students are gaining access to and participating in secondary education over time in Venezuela.
It would be beneficial to explore the factors or interventions that have contributed to the increasing net enrolment rate. This information could provide insights into successful educational policies, strategies, or initiatives that have been implemented in Venezuela.

Findings
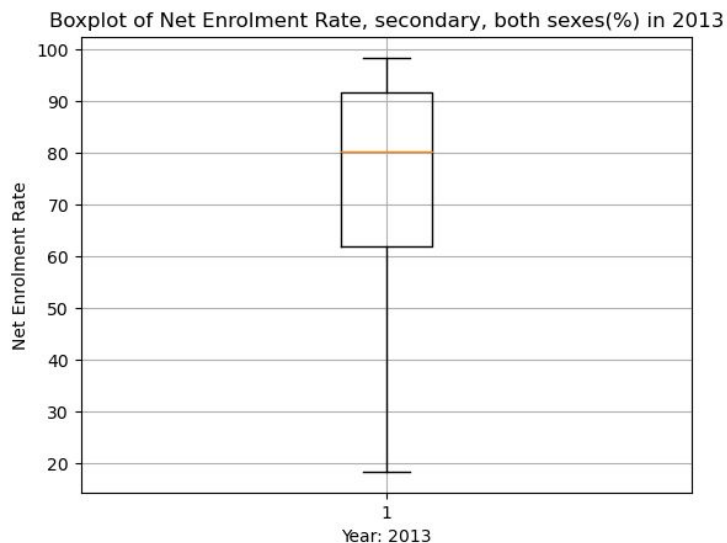
Boxplot of Net Enrolment Rate, secondary, both sexes(%) in 2013

	Year	Value
count	88.0	88.000000
mean	2013.0	73.395965
std	0.0	22.304477
min	2013.0	18.345510
25%	2013.0	61.826594
50%	2013.0	80.156143
75%	2013.0	91.612555
max	2013.0	98.400658

Out of 88 countries listed for 2013, Venezuela is ranked 53 with 74.683037%. Additionally, plotting a boxplot as shown above, at 74.683037%, Venezuela's Net Enrolment Rate for secondary education, both sexes(%) in 2013 falls below the median of 80.156143%. This suggests that Venezuela tends have lower Net Enrolment Rate for secondary education than other countries.

Acknowledgements

UCSanDiegoX DSE200x: Python for Data Science!

References

Raw data used for analysis

https://www.kaggle.com/datasets/kaggle/world-development-indicators

```
In [2]:   import pandas as pd
          import numpy as np
          import random
          import matplotlib.pyplot as plt
```

```
In [43]:  data = pd.read_csv('./Indicators.csv')
```

```
In [44]:  data.shape
```

```
Out[44]:  (5656458, 6)
```

```
In [81]:  indicators = data['IndicatorName'].unique().tolist()
```

```
In [50]:  len(indicators)
```

```
Out[50]:  1344
```

```
In [52]:  years = data['Year'].unique().tolist()
          len(years)
```

```
Out[52]:  56
```

```
In [79]:  print("The range of years is", min(years),"to",max(years))
```

```
          The range of years is 1960 to 2015
```

```
In [85]:  # Check for null values
          data.isnull().any()
```

```
Out[85]:  CountryName      False
          CountryCode      False
          IndicatorName    False
          IndicatorCode    False
          Year             False
          Value            False
          dtype: bool
```

```
In [91]:  # Value Statistics
          data['Value'].describe()
```

```
Out[91]:  count    5.656458e+06
          mean     1.070501e+12
          std      4.842469e+13
          min     -9.824821e+15
          25%      5.566242e+00
          50%      6.357450e+01
          75%      1.346722e+07
          max      1.103367e+16
          Name: Value, dtype: float64
```

```
In [93]:  #Find all the unique Country Names
          countryNames = data['CountryName'].unique()
          print(countryNames)
```

```
['Arab World' 'Caribbean small states' 'Central Europe and the Baltics'
 'East Asia & Pacific (all income levels)'
 'East Asia & Pacific (developing only)' 'Euro area'
 'Europe & Central Asia (all income levels)'
 'Europe & Central Asia (developing only)' 'European Union'
 'Fragile and conflict affected situations'
 'Heavily indebted poor countries (HIPC)' 'High income'
 'High income: nonOECD' 'High income: OECD'
 'Latin America & Caribbean (all income levels)'
 'Latin America & Caribbean (developing only)'
 'Least developed countries: UN classification' 'Low & middle income'
 'Low income' 'Lower middle income'
 'Middle East & North Africa (all income levels)'
 'Middle East & North Africa (developing only)' 'Middle income'
 'North America' 'OECD members' 'Other small states'
 'Pacific island small states' 'Small states' 'South Asia'
 'Sub-Saharan Africa (all income levels)'
 'Sub-Saharan Africa (developing only)' 'Upper middle income' 'World'
 'Afghanistan' 'Albania' 'Algeria' 'American Samoa' 'Andorra' 'Angola'
 'Antigua and Barbuda' 'Argentina' 'Armenia' 'Aruba' 'Australia' 'Austria'
 'Azerbaijan' 'Bahamas, The' 'Bahrain' 'Bangladesh' 'Barbados' 'Belarus'
 'Belgium' 'Belize' 'Benin' 'Bermuda' 'Bhutan' 'Bolivia'
 'Bosnia and Herzegovina' 'Botswana' 'Brazil' 'Brunei Darussalam'
 'Bulgaria' 'Burkina Faso' 'Burundi' 'Cabo Verde' 'Cambodia' 'Cameroon'
 'Canada' 'Cayman Islands' 'Central African Republic' 'Chad'
 'Channel Islands' 'Chile' 'China' 'Colombia' 'Comoros' 'Congo, Dem. Rep.'
 'Congo, Rep.' 'Costa Rica' "Cote d'Ivoire" 'Croatia' 'Cuba' 'Curacao'
 'Cyprus' 'Czech Republic' 'Denmark' 'Djibouti' 'Dominica'
 'Dominican Republic' 'Ecuador' 'Egypt, Arab Rep.' 'El Salvador'
 'Equatorial Guinea' 'Eritrea' 'Estonia' 'Ethiopia' 'Faeroe Islands'
 'Fiji' 'Finland' 'France' 'French Polynesia' 'Gabon' 'Gambia, The'
 'Georgia' 'Germany' 'Ghana' 'Greece' 'Greenland' 'Grenada' 'Guam'
 'Guatemala' 'Guinea' 'Guinea-Bissau' 'Guyana' 'Haiti' 'Honduras'
 'Hong Kong SAR, China' 'Hungary' 'Iceland' 'India' 'Indonesia'
 'Iran, Islamic Rep.' 'Iraq' 'Ireland' 'Isle of Man' 'Israel' 'Italy'
 'Jamaica' 'Japan' 'Jordan' 'Kazakhstan' 'Kenya' 'Kiribati'
 'Korea, Dem. Rep.' 'Korea, Rep.' 'Kosovo' 'Kuwait' 'Kyrgyz Republic'
 'Lao PDR' 'Latvia' 'Lebanon' 'Lesotho' 'Liberia' 'Libya' 'Liechtenstein'
 'Lithuania' 'Luxembourg' 'Macao SAR, China' 'Macedonia, FYR' 'Madagascar'
 'Malawi' 'Malaysia' 'Maldives' 'Mali' 'Malta' 'Marshall Islands'
 'Mauritania' 'Mauritius' 'Mexico' 'Micronesia, Fed. Sts.' 'Moldova'
 'Monaco' 'Mongolia' 'Montenegro' 'Morocco' 'Mozambique' 'Myanmar'
 'Namibia' 'Nepal' 'Netherlands' 'New Caledonia' 'New Zealand' 'Nicaragua'
 'Niger' 'Nigeria' 'Northern Mariana Islands' 'Norway' 'Oman' 'Pakistan'
 'Palau' 'Panama' 'Papua New Guinea' 'Paraguay' 'Peru' 'Philippines'
 'Poland' 'Portugal' 'Puerto Rico' 'Qatar' 'Romania' 'Russian Federation'
 'Rwanda' 'Samoa' 'San Marino' 'Sao Tome and Principe' 'Saudi Arabia'
 'Senegal' 'Serbia' 'Seychelles' 'Sierra Leone' 'Singapore'
 'Sint Maarten (Dutch part)' 'Slovak Republic' 'Slovenia'
 'Solomon Islands' 'Somalia' 'South Africa' 'South Sudan' 'Spain'
 'Sri Lanka' 'St. Kitts and Nevis' 'St. Lucia' 'St. Martin (French part)'
 'St. Vincent and the Grenadines' 'Sudan' 'Suriname' 'Swaziland' 'Sweden'
 'Switzerland' 'Syrian Arab Republic' 'Tajikistan' 'Tanzania' 'Thailand'
 'Timor-Leste' 'Togo' 'Tonga' 'Trinidad and Tobago' 'Tunisia' 'Turkey'
 'Turkmenistan' 'Turks and Caicos Islands' 'Tuvalu' 'Uganda' 'Ukraine'
 'United Arab Emirates' 'United Kingdom' 'United States' 'Uruguay'
 'Uzbekistan' 'Vanuatu' 'Venezuela, RB' 'Vietnam' 'Virgin Islands (U.S.)'
 'West Bank and Gaza' 'Yemen, Rep.' 'Zambia' 'Zimbabwe']
```

In [94]:
```python
countryNames = data[['CountryName', 'CountryCode']].drop_duplicates()
print(countryNames)
```

```
                                         CountryName CountryCode
0                                          Arab World         ARB
80                              Caribbean small states         CSS
157                    Central Europe and the Baltics         CEB
228               East Asia & Pacific (all income levels)         EAS
350                East Asia & Pacific (developing only)         EAP
473                                           Euro area         EMU
592           Europe & Central Asia (all income levels)         ECS
701            Europe & Central Asia (developing only)         ECA
790                                      European Union         EUU
906              Fragile and conflict affected situations         FCS
982               Heavily indebted poor countries (HIPC)         HPC
1081                                        High income         HIC
1212                                High income: nonOECD         NOC
1280                                   High income: OECD         OEC
1407    Latin America & Caribbean (all income levels)         LCN
1537      Latin America & Caribbean (developing only)         LAC
1670      Least developed countries: UN classification         LDC
1748                                  Low & middle income         LMY
1886                                          Low income         LIC
1966                                  Lower middle income         LMC
2092    Middle East & North Africa (all income levels)         MEA
2181      Middle East & North Africa (developing only)         MNA
2275                                      Middle income         MIC
2413                                      North America         NAC
2536                                        OECD members         OED
2666                                  Other small states         OSS
```

```
2729                       Pacific island small states        PSS
2795                                     Small states        SST
2864                                       South Asia        SAS
3014            Sub-Saharan Africa (all income levels)        SSF
3125            Sub-Saharan Africa (developing only)         SSA
3236                             Upper middle income         UMC
3370                                           World         WLD
3492                                     Afghanistan         AFG
3605                                         Albania         ALB
3650                                         Algeria         DZA
3826                                  American Samoa         ASM
3839                                         Andorra         ADO
3851                                          Angola         AGO
3921                             Antigua and Barbuda         ATG
3965                                       Argentina         ARG
4117                                         Armenia         ARM
4149                                           Aruba         ABW
4179                                       Australia         AUS
4374                                         Austria         AUT
4527                                      Azerbaijan         AZE
4559                                    Bahamas, The         BHS
4627                                         Bahrain         BHR
4682                                      Bangladesh         BGD
4806                                        Barbados         BRB
4857                                         Belarus         BLR
4891                                         Belgium         BEL
5026                                          Belize         BLZ
5097                                           Benin         BEN
5251                                         Bermuda         BMU
5290                                          Bhutan         BTN
5324                                         Bolivia         BOL
5479                          Bosnia and Herzegovina         BIH
5509                                        Botswana         BWA
5630                                          Brazil         BRA
5817                               Brunei Darussalam         BRN
5876                                        Bulgaria         BGR
5927                                    Burkina Faso         BFA
6055                                         Burundi         BDI
6164                                      Cabo Verde         CPV
6209                                        Cambodia         KHM
6328                                        Cameroon         CMR
6447                                          Canada         CAN
6613                                  Cayman Islands         CYM
6632                        Central African Republic         CAF
6761                                            Chad         TCD
6911                                 Channel Islands         CHI
6941                                           Chile         CHL
7144                                           China         CHN
7264                                        Colombia         COL
7445                                         Comoros         COM
7489                               Congo, Dem. Rep.         ZAR
7620                                     Congo, Rep.         COG
7781                                      Costa Rica         CRI
7963                                   Cote d'Ivoire         CIV
8105                                         Croatia         HRV
8135                                            Cuba         CUB
8192                                         Curacao         CUW
8210                                          Cyprus         CYP
8284                                  Czech Republic         CZE
8316                                         Denmark         DNK
8457                                        Djibouti         DJI
8502                                        Dominica         DMA
8532                              Dominican Republic         DOM
8705                                         Ecuador         ECU
8877                                 Egypt, Arab Rep.        EGY
8971                                     El Salvador         SLV
9051                               Equatorial Guinea         GNQ
9095                                         Eritrea         ERI
9128                                         Estonia         EST
9159                                        Ethiopia         ETH
9239                                  Faeroe Islands         FRO
9263                                            Fiji         FJI
9405                                         Finland         FIN
9565                                          France         FRA
9732                                French Polynesia         PYF
9776                                           Gabon         GAB
9915                                     Gambia, The         GMB
9972                                         Georgia         GEO
10004                                        Germany         DEU
10088                                          Ghana         GHA
10232                                         Greece         GRC
10392                                      Greenland         GRL
10413                                        Grenada         GRD
10460                                           Guam         GUM
10492                                      Guatemala         GTM
10669                                         Guinea         GIN
10732                                  Guinea-Bissau         GNB
10780                                         Guyana         GUY
10944                                          Haiti         HTI
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11023	Honduras	HND
11218	Hong Kong SAR, China	HKG
11336	Hungary	HUN
11413	Iceland	ISL
11561	India	IND
11777	Indonesia	IDN
11949	Iran, Islamic Rep.	IRN
12134	Iraq	IRQ
12229	Ireland	IRL
12367	Isle of Man	IMY
12379	Israel	ISR
12520	Italy	ITA
12680	Jamaica	JAM
12804	Japan	JPN
12969	Jordan	JOR
13056	Kazakhstan	KAZ
13088	Kenya	KEN
13252	Kiribati	KIR
13293	Korea, Dem. Rep.	PRK
13328	Korea, Rep.	KOR
13519	Kosovo	KSV
13521	Kuwait	KWT
13578	Kyrgyz Republic	KGZ
13608	Lao PDR	LAO
13675	Latvia	LVA
13705	Lebanon	LBN
13790	Lesotho	LSO
13920	Liberia	LBR
14017	Libya	LBY
14100	Liechtenstein	LIE
14112	Lithuania	LTU
14144	Luxembourg	LUX
14266	Macao SAR, China	MAC
14320	Macedonia, FYR	MKD
14351	Madagascar	MDG
14514	Malawi	MWI
14629	Malaysia	MYS
14794	Maldives	MDV
14836	Mali	MLI
14892	Malta	MLT
14972	Marshall Islands	MHL
14988	Mauritania	MRT
15143	Mauritius	MUS
15224	Mexico	MEX
15405	Micronesia, Fed. Sts.	FSM
15436	Moldova	MDA
15468	Monaco	MCO
15484	Mongolia	MNG
15529	Montenegro	MNE
15555	Morocco	MAR
15717	Mozambique	MOZ
15789	Myanmar	MMR
15915	Namibia	NAM
15949	Nepal	NPL
16035	Netherlands	NLD
16193	New Caledonia	NCL
16239	New Zealand	NZL
16353	Nicaragua	NIC
16507	Niger	NER
16640	Nigeria	NGA
16751	Northern Mariana Islands	MNP
16770	Norway	NOR
16926	Oman	OMN
16983	Pakistan	PAK
17151	Palau	PLW
17169	Panama	PAN
17269	Papua New Guinea	PNG
17356	Paraguay	PRY
17445	Peru	PER
17636	Philippines	PHL
17836	Poland	POL
17932	Portugal	PRT
18083	Puerto Rico	PRI
18170	Qatar	QAT
18214	Romania	ROM
18282	Russian Federation	RUS
18314	Rwanda	RWA
18451	Samoa	WSM
18495	San Marino	SMR
18505	Sao Tome and Principe	STP
18556	Saudi Arabia	SAU
18614	Senegal	SEN
18778	Serbia	SRB
18783	Seychelles	SYC
18837	Sierra Leone	SLE
18921	Singapore	SGP
19062	Sint Maarten (Dutch part)	SXM
19064	Slovak Republic	SVK
19096	Slovenia	SVN

```
19122                          Solomon Islands        SLB
19177                                 Somalia         SOM
19304                            South Africa         ZAF
19494                             South Sudan         SSD
19522                                   Spain         ESP
19677                               Sri Lanka         LKA
19819                       St. Kitts and Nevis        KNA
19848                               St. Lucia         LCA
19892                  St. Martin (French part)        MAF
19894           St. Vincent and the Grenadines        VCT
19954                                   Sudan         SDN
20139                                Suriname         SUR
20254                               Swaziland         SWZ
20370                                  Sweden         SWE
20530                             Switzerland         CHE
20668                     Syrian Arab Republic        SYR
20803                              Tajikistan         TJK
20833                                Tanzania         TZA
20911                                Thailand         THA
21120                             Timor-Leste         TMP
21148                                    Togo         TGO
21319                                   Tonga         TON
21370                       Trinidad and Tobago        TTO
21531                                 Tunisia         TUN
21616                                  Turkey         TUR
21792                            Turkmenistan         TKM
21822                  Turks and Caicos Islands        TCA
21832                                  Tuvalu         TUV
21844                                  Uganda         UGA
21980                                 Ukraine         UKR
22019                    United Arab Emirates         ARE
22072                          United Kingdom         GBR
22220                           United States         USA
22389                                 Uruguay         URY
22554                              Uzbekistan         UZB
22586                                 Vanuatu         VUT
22633                            Venezuela, RB         VEN
22799                                 Vietnam         VNM
22870                      Virgin Islands (U.S.)       VIR
22910                       West Bank and Gaza         WBG
22913                              Yemen, Rep.         YEM
22969                                  Zambia         ZMB
23104                                Zimbabwe         ZWE
```

In [102]:
```python
#Remove Unwanted CountryCode Rows
codes_to_drop = ['EAP', 'ECA', 'EMU', 'ECA', 'EUU', 'FCS', 'HPC', 'HIC', 'NOC', 'OEC', 'LAC', 'LDC', 'LMY', 'LI
data = data[~data['CountryCode'].isin(codes_to_drop)]
```

In [104]:
```python
countryNames = data[['CountryName', 'CountryCode']].drop_duplicates()
print(countryNames)
```

```
                                      CountryName CountryCode
0                                       Arab World         ARB
80                           Caribbean small states         CSS
157                      Central Europe and the Baltics     CEB
228           East Asia & Pacific (all income levels)      EAS
592          Europe & Central Asia (all income levels)     ECS
1407     Latin America & Caribbean (all income levels)    LCN
2092   Middle East & North Africa (all income levels)    MEA
2275                                  Middle income        MIC
2413                                  North America         NAC
2536                                   OECD members         OED
2864                                     South Asia         SAS
3014          Sub-Saharan Africa (all income levels)      SSF
3492                                    Afghanistan         AFG
3605                                        Albania         ALB
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3826                                 American Samoa         ASM
3839                                        Andorra         ADO
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3965                                      Argentina         ARG
4117                                        Armenia         ARM
4149                                          Aruba         ABW
4179                                      Australia         AUS
4374                                        Austria         AUT
4527                                     Azerbaijan         AZE
4559                                   Bahamas, The         BHS
4627                                        Bahrain         BHR
4682                                     Bangladesh         BGD
4806                                       Barbados         BRB
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4891                                        Belgium         BEL
5026                                         Belize         BLZ
5097                                          Benin         BEN
5251                                        Bermuda         BMU
5290                                         Bhutan         BTN
5324                                        Bolivia         BOL
```

5479	Bosnia and Herzegovina	BIH
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5876	Bulgaria	BGR
5927	Burkina Faso	BFA
6055	Burundi	BDI
6164	Cabo Verde	CPV
6209	Cambodia	KHM
6328	Cameroon	CMR
6447	Canada	CAN
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7781	Costa Rica	CRI
7963	Cote d'Ivoire	CIV
8105	Croatia	HRV
8135	Cuba	CUB
8192	Curacao	CUW
8210	Cyprus	CYP
8284	Czech Republic	CZE
8316	Denmark	DNK
8457	Djibouti	DJI
8502	Dominica	DMA
8532	Dominican Republic	DOM
8705	Ecuador	ECU
8877	Egypt, Arab Rep.	EGY
8971	El Salvador	SLV
9051	Equatorial Guinea	GNQ
9095	Eritrea	ERI
9128	Estonia	EST
9159	Ethiopia	ETH
9239	Faeroe Islands	FRO
9263	Fiji	FJI
9405	Finland	FIN
9565	France	FRA
9732	French Polynesia	PYF
9776	Gabon	GAB
9915	Gambia, The	GMB
9972	Georgia	GEO
10004	Germany	DEU
10088	Ghana	GHA
10232	Greece	GRC
10392	Greenland	GRL
10413	Grenada	GRD
10460	Guam	GUM
10492	Guatemala	GTM
10669	Guinea	GIN
10732	Guinea-Bissau	GNB
10780	Guyana	GUY
10944	Haiti	HTI
11023	Honduras	HND
11218	Hong Kong SAR, China	HKG
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11561	India	IND
11777	Indonesia	IDN
11949	Iran, Islamic Rep.	IRN
12134	Iraq	IRQ
12229	Ireland	IRL
12367	Isle of Man	IMY
12379	Israel	ISR
12520	Italy	ITA
12680	Jamaica	JAM
12804	Japan	JPN
12969	Jordan	JOR
13056	Kazakhstan	KAZ
13088	Kenya	KEN
13252	Kiribati	KIR
13293	Korea, Dem. Rep.	PRK
13328	Korea, Rep.	KOR
13519	Kosovo	KSV
13521	Kuwait	KWT
13578	Kyrgyz Republic	KGZ
13608	Lao PDR	LAO
13675	Latvia	LVA
13705	Lebanon	LBN
13790	Lesotho	LSO
13920	Liberia	LBR
14017	Libya	LBY
14100	Liechtenstein	LIE
14112	Lithuania	LTU

14144	Luxembourg	LUX
14266	Macao SAR, China	MAC
14320	Macedonia, FYR	MKD
14351	Madagascar	MDG
14514	Malawi	MWI
14629	Malaysia	MYS
14794	Maldives	MDV
14836	Mali	MLI
14892	Malta	MLT
14972	Marshall Islands	MHL
14988	Mauritania	MRT
15143	Mauritius	MUS
15224	Mexico	MEX
15405	Micronesia, Fed. Sts.	FSM
15436	Moldova	MDA
15468	Monaco	MCO
15484	Mongolia	MNG
15529	Montenegro	MNE
15555	Morocco	MAR
15717	Mozambique	MOZ
15789	Myanmar	MMR
15915	Namibia	NAM
15949	Nepal	NPL
16035	Netherlands	NLD
16193	New Caledonia	NCL
16239	New Zealand	NZL
16353	Nicaragua	NIC
16507	Niger	NER
16640	Nigeria	NGA
16751	Northern Mariana Islands	MNP
16770	Norway	NOR
16926	Oman	OMN
16983	Pakistan	PAK
17151	Palau	PLW
17169	Panama	PAN
17269	Papua New Guinea	PNG
17356	Paraguay	PRY
17445	Peru	PER
17636	Philippines	PHL
17836	Poland	POL
17932	Portugal	PRT
18083	Puerto Rico	PRI
18170	Qatar	QAT
18214	Romania	ROM
18282	Russian Federation	RUS
18314	Rwanda	RWA
18451	Samoa	WSM
18495	San Marino	SMR
18505	Sao Tome and Principe	STP
18556	Saudi Arabia	SAU
18614	Senegal	SEN
18778	Serbia	SRB
18783	Seychelles	SYC
18837	Sierra Leone	SLE
18921	Singapore	SGP
19062	Sint Maarten (Dutch part)	SXM
19064	Slovak Republic	SVK
19096	Slovenia	SVN
19122	Solomon Islands	SLB
19177	Somalia	SOM
19304	South Africa	ZAF
19494	South Sudan	SSD
19522	Spain	ESP
19677	Sri Lanka	LKA
19819	St. Kitts and Nevis	KNA
19848	St. Lucia	LCA
19892	St. Martin (French part)	MAF
19894	St. Vincent and the Grenadines	VCT
19954	Sudan	SDN
20139	Suriname	SUR
20254	Swaziland	SWZ
20370	Sweden	SWE
20530	Switzerland	CHE
20668	Syrian Arab Republic	SYR
20803	Tajikistan	TJK
20833	Tanzania	TZA
20911	Thailand	THA
21120	Timor-Leste	TMP
21148	Togo	TGO
21319	Tonga	TON
21370	Trinidad and Tobago	TTO
21531	Tunisia	TUN
21616	Turkey	TUR
21792	Turkmenistan	TKM
21822	Turks and Caicos Islands	TCA
21832	Tuvalu	TUV
21844	Uganda	UGA
21980	Ukraine	UKR
22019	United Arab Emirates	ARE

```
22072                              United Kingdom        GBR
22220                              United States         USA
22389                                   Uruguay          URY
22554                                Uzbekistan          UZB
22586                                   Vanuatu          VUT
22633                             Venezuela, RB           VEN
22799                                   Vietnam          VNM
22870                       Virgin Islands (U.S.)        VIR
22910                         West Bank and Gaza          WBG
22913                               Yemen, Rep.          YEM
22969                                    Zambia          ZMB
23104                                  Zimbabwe          ZWE
```

In [200]:
```python
enrolIndicators = data[data['IndicatorName'].str.contains('enrol', case=False)]['IndicatorName'].unique()
print(enrolIndicators)
```

```
['Adjusted net enrolment rate, primary, both sexes (%)'
 'Adjusted net enrolment rate, primary, female (%)'
 'Adjusted net enrolment rate, primary, male (%)'
 'Enrolment in primary education, both sexes (number)'
 'Enrolment in secondary education, both sexes (number)'
 'Enrolment in secondary general, both sexes (number)'
 'Enrolment in secondary vocational, both sexes (number)'
 'Gross enrolment ratio, pre-primary, both sexes (%)'
 'Gross enrolment ratio, pre-primary, female (%)'
 'Gross enrolment ratio, pre-primary, male (%)'
 'Gross enrolment ratio, primary and secondary, gender parity index (GPI)'
 'Gross enrolment ratio, primary, both sexes (%)'
 'Gross enrolment ratio, primary, female (%)'
 'Gross enrolment ratio, primary, gender parity index (GPI)'
 'Gross enrolment ratio, primary, male (%)'
 'Gross enrolment ratio, secondary, both sexes (%)'
 'Gross enrolment ratio, secondary, female (%)'
 'Gross enrolment ratio, secondary, gender parity index (GPI)'
 'Gross enrolment ratio, secondary, male (%)'
 'Gross enrolment ratio, tertiary, both sexes (%)'
 'Gross enrolment ratio, tertiary, female (%)'
 'Gross enrolment ratio, tertiary, gender parity index (GPI)'
 'Gross enrolment ratio, tertiary, male (%)'
 'Net enrolment rate, primary, both sexes (%)'
 'Net enrolment rate, primary, female (%)'
 'Net enrolment rate, primary, male (%)'
 'Net enrolment rate, secondary, both sexes (%)'
 'Net enrolment rate, secondary, female (%)'
 'Net enrolment rate, secondary, male (%)'
 'Percentage of enrolment in primary education in private institutions (%)'
 'Percentage of enrolment in secondary education in private institutions (%)']
```

In [240]:
```python
#Explore how Net enrolment rate, secondary, both sexes (%) over time for ZAF
hist_indicator = 'Net enrolment rate, secondary, both sexes \(%'
hist_country = 'VEN'

mask1 = data['IndicatorName'].str.contains(hist_indicator)
mask2 = data['CountryCode'].str.contains(hist_country)
mask3 = data['Year'].between(2000,2013)

# stage is just those indicators matching the USA for country code and CO2 emissions over time.
stage = data[mask1 & mask2 & mask3]
```

In [241]:
```python
stage.head()
```

Out[241]:

|	CountryName	CountryCode	IndicatorName	IndicatorCode	Year	Value
3321995	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	SE.SEC.NENR	2000	50.749329
3472582	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	SE.SEC.NENR	2001	54.094280
3627321	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	SE.SEC.NENR	2002	56.648239
3780999	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	SE.SEC.NENR	2003	58.364571
3938810	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	SE.SEC.NENR	2004	60.838902

In [284]:
```python
years = stage['Year'].values
per = stage['Value'].values

#plot
plt.bar(years, per)
plt.title("VEN - Net enrolment rate, secondary, both sexes (%) from 2000-2013")
plt.xlabel("Year")
plt.ylabel("Net enrolment rate, secondary, both sexes (%)")

plt.show()
```

# VEN - Net enrolment rate, secondary, both sexes (%) from 2000-2013
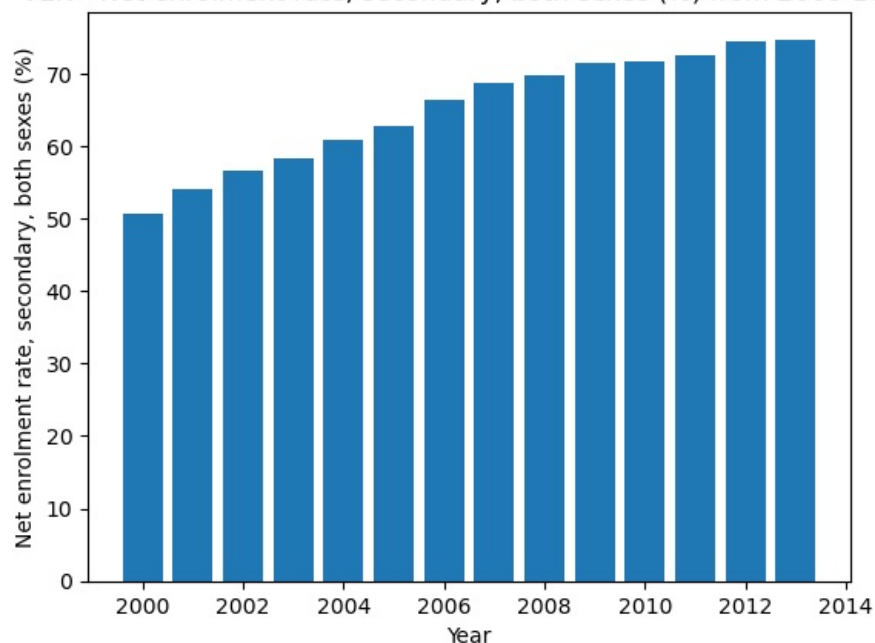
Generally, net enrolment rate, secondary, both sexes (%) for Venezuela has been increasing consistently throughout the years, with no anomaly.

Line Graph Representation

```
In [250… plt.plot(years, per)
         plt.title("VEN - Net enrolment rate, secondary, both sexes (%) from 2000-2013")
         plt.xlabel("Year")
         plt.ylabel("Net enrolment rate, secondary, both sexes (%)")
         plt.grid(True)  # Add gridlines for better readability
         plt.show()
```
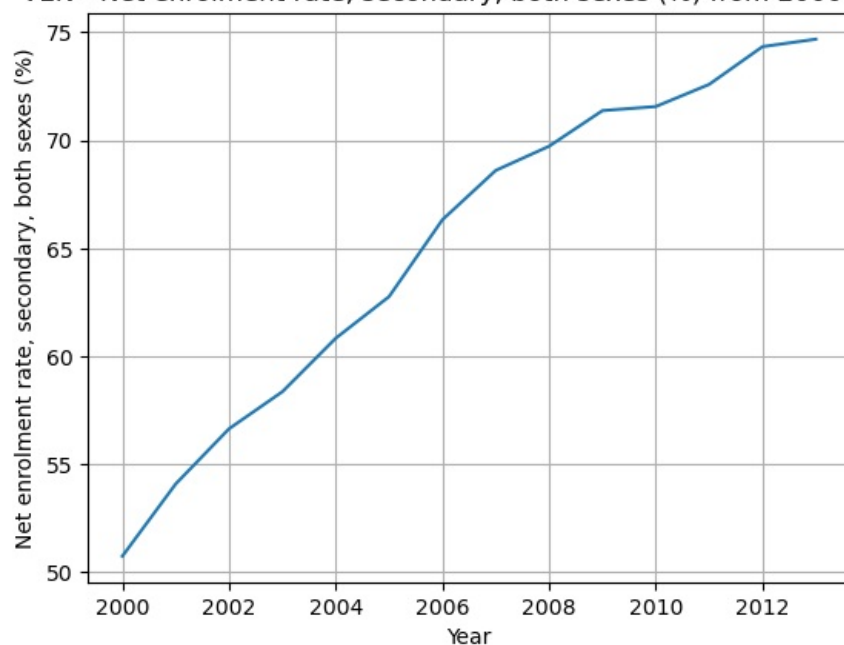


```
In [288… year = 2013

         # Filter the data for the indicator, country, and year
         mask4 = data['Year'] == year
         stage2 = data[mask1 & mask4]
         sortedData = stage2.loc[:,['CountryName', 'CountryCode', 'IndicatorName', 'Year', 'Value']].sort_values(by='Val
         sortedData.index = range(1, len(sortedData) + 1)
         sortedData
         # stage2 = data[mask1 & mask2 & mask4]
         # # Get Venezuela's enrolment rate value in 2013
         # ven_value = stage2['Value'].values[0]

         # # Filter the data for other countries in 2013
         # other_countries = data[mask1 & mask4 & ~mask2]

         # # Get the values for other countries
         # other_values = other_countries['Value'].values
```

```
# # Compare Venezuela's value with other countries
# print("Venezuela's enrolment rate in 2013:", ven_value)
# print("Enrolment rate of other countries in 2013:")
# for value in other_values:
#     print(value)
```

Out[288]:

	CountryName	CountryCode	IndicatorName	Year	Value
1	Israel	ISR	Net enrolment rate, secondary, both sexes (%)	2013	98.400658
2	United Kingdom	GBR	Net enrolment rate, secondary, both sexes (%)	2013	97.884193
3	France	FRA	Net enrolment rate, secondary, both sexes (%)	2013	97.465408
4	New Zealand	NZL	Net enrolment rate, secondary, both sexes (%)	2013	97.354309
5	Belarus	BLR	Net enrolment rate, secondary, both sexes (%)	2013	96.862900
6	Belgium	BEL	Net enrolment rate, secondary, both sexes (%)	2013	96.352219
7	Lithuania	LTU	Net enrolment rate, secondary, both sexes (%)	2013	96.346542
8	Korea, Rep.	KOR	Net enrolment rate, secondary, both sexes (%)	2013	95.981941
9	Spain	ESP	Net enrolment rate, secondary, both sexes (%)	2013	95.956039
10	Palau	PLW	Net enrolment rate, secondary, both sexes (%)	2013	95.251747
11	Portugal	PRT	Net enrolment rate, secondary, both sexes (%)	2013	95.155693
12	Norway	NOR	Net enrolment rate, secondary, both sexes (%)	2013	95.137169
13	Sweden	SWE	Net enrolment rate, secondary, both sexes (%)	2013	94.635437
14	Slovenia	SVN	Net enrolment rate, secondary, both sexes (%)	2013	94.444237
15	Finland	FIN	Net enrolment rate, secondary, both sexes (%)	2013	93.993462
16	Serbia	SRB	Net enrolment rate, secondary, both sexes (%)	2013	93.029037
17	Hungary	HUN	Net enrolment rate, secondary, both sexes (%)	2013	92.273773
18	Brunei Darussalam	BRN	Net enrolment rate, secondary, both sexes (%)	2013	92.245811
19	Netherlands	NLD	Net enrolment rate, secondary, both sexes (%)	2013	92.160507
20	Poland	POL	Net enrolment rate, secondary, both sexes (%)	2013	92.132118
21	Saudi Arabia	SAU	Net enrolment rate, secondary, both sexes (%)	2013	91.829689
22	Georgia	GEO	Net enrolment rate, secondary, both sexes (%)	2013	91.658989
23	Denmark	DNK	Net enrolment rate, secondary, both sexes (%)	2013	91.597076
24	Kazakhstan	KAZ	Net enrolment rate, secondary, both sexes (%)	2013	91.458611
25	Central Europe and the Baltics	CEB	Net enrolment rate, secondary, both sexes (%)	2013	90.642326
26	Europe & Central Asia (all income levels)	ECS	Net enrolment rate, secondary, both sexes (%)	2013	90.119316
27	Estonia	EST	Net enrolment rate, secondary, both sexes (%)	2013	89.168571
28	Turkey	TUR	Net enrolment rate, secondary, both sexes (%)	2013	88.344063
29	Cuba	CUB	Net enrolment rate, secondary, both sexes (%)	2013	88.314873
30	North America	NAC	Net enrolment rate, secondary, both sexes (%)	2013	87.946228
31	OECD members	OED	Net enrolment rate, secondary, both sexes (%)	2013	87.915871
32	Bulgaria	BGR	Net enrolment rate, secondary, both sexes (%)	2013	87.617691
33	Chile	CHL	Net enrolment rate, secondary, both sexes (%)	2013	87.309410
34	Ukraine	UKR	Net enrolment rate, secondary, both sexes (%)	2013	87.086723
35	Latvia	LVA	Net enrolment rate, secondary, both sexes (%)	2013	86.944839
36	Hong Kong SAR, China	HKG	Net enrolment rate, secondary, both sexes (%)	2013	86.879341
37	Australia	AUS	Net enrolment rate, secondary, both sexes (%)	2013	85.679352
38	Egypt, Arab Rep.	EGY	Net enrolment rate, secondary, both sexes (%)	2013	85.392899
39	St. Kitts and Nevis	KNA	Net enrolment rate, secondary, both sexes (%)	2013	85.026398
40	Ecuador	ECU	Net enrolment rate, secondary, both sexes (%)	2013	83.429977
41	Oman	OMN	Net enrolment rate, secondary, both sexes (%)	2013	83.042633
42	Kyrgyz Republic	KGZ	Net enrolment rate, secondary, both sexes (%)	2013	82.446259
43	St. Lucia	LCA	Net enrolment rate, secondary, both sexes (%)	2013	80.656517
44	Grenada	GRD	Net enrolment rate, secondary, both sexes (%)	2013	80.199623
45	West Bank and Gaza	WBG	Net enrolment rate, secondary, both sexes (%)	2013	80.112663
46	Tuvalu	TUV	Net enrolment rate, secondary, both sexes (%)	2013	78.711700
47	East Asia & Pacific (all income levels)	EAS	Net enrolment rate, secondary, both sexes (%)	2013	78.543770
48	Macao SAR, China	MAC	Net enrolment rate, secondary, both sexes (%)	2013	78.270714
49	Moldova	MDA	Net enrolment rate, secondary, both sexes (%)	2013	77.191551
50	Indonesia	IDN	Net enrolment rate, secondary, both sexes (%)	2013	76.568398

|					
51	Peru	PER	Net enrolment rate, secondary, both sexes (%)	2013	76.282341
52	Latin America & Caribbean (all income levels)	LCN	Net enrolment rate, secondary, both sexes (%)	2013	75.668343
53	Venezuela, RB	VEN	Net enrolment rate, secondary, both sexes (%)	2013	74.683037
54	Puerto Rico	PRI	Net enrolment rate, secondary, both sexes (%)	2013	74.678261
55	Belize	BLZ	Net enrolment rate, secondary, both sexes (%)	2013	74.287590
56	Colombia	COL	Net enrolment rate, secondary, both sexes (%)	2013	73.784348
57	Costa Rica	CRI	Net enrolment rate, secondary, both sexes (%)	2013	73.275383
58	Middle East & North Africa (all income levels)	MEA	Net enrolment rate, secondary, both sexes (%)	2013	71.706146
59	Bolivia	BOL	Net enrolment rate, secondary, both sexes (%)	2013	71.575630
60	Cabo Verde	CPV	Net enrolment rate, secondary, both sexes (%)	2013	69.931511
61	Tonga	TON	Net enrolment rate, secondary, both sexes (%)	2013	68.991608
62	Middle income	MIC	Net enrolment rate, secondary, both sexes (%)	2013	66.762672
63	Philippines	PHL	Net enrolment rate, secondary, both sexes (%)	2013	65.137901
64	Seychelles	SYC	Net enrolment rate, secondary, both sexes (%)	2013	63.561871
65	Arab World	ARB	Net enrolment rate, secondary, both sexes (%)	2013	63.101219
66	El Salvador	SLV	Net enrolment rate, secondary, both sexes (%)	2013	62.499859
67	Nepal	NPL	Net enrolment rate, secondary, both sexes (%)	2013	59.806801
68	Bhutan	BTN	Net enrolment rate, secondary, both sexes (%)	2013	59.775398
69	Suriname	SUR	Net enrolment rate, secondary, both sexes (%)	2013	52.526009
70	Ghana	GHA	Net enrolment rate, secondary, both sexes (%)	2013	51.475330
71	Honduras	HND	Net enrolment rate, secondary, both sexes (%)	2013	48.633240
72	Comoros	COM	Net enrolment rate, secondary, both sexes (%)	2013	47.297131
73	Guatemala	GTM	Net enrolment rate, secondary, both sexes (%)	2013	46.881538
74	Afghanistan	AFG	Net enrolment rate, secondary, both sexes (%)	2013	46.825199
75	Lao PDR	LAO	Net enrolment rate, secondary, both sexes (%)	2013	44.672470
76	Syrian Arab Republic	SYR	Net enrolment rate, secondary, both sexes (%)	2013	44.065899
77	Benin	BEN	Net enrolment rate, secondary, both sexes (%)	2013	42.029900
78	Cameroon	CMR	Net enrolment rate, secondary, both sexes (%)	2013	40.094341
79	Pakistan	PAK	Net enrolment rate, secondary, both sexes (%)	2013	37.853828
80	Mali	MLI	Net enrolment rate, secondary, both sexes (%)	2013	35.597729
81	Lesotho	LSO	Net enrolment rate, secondary, both sexes (%)	2013	34.074829
82	Sub-Saharan Africa (all income levels)	SSF	Net enrolment rate, secondary, both sexes (%)	2013	33.705376
83	Malawi	MWI	Net enrolment rate, secondary, both sexes (%)	2013	31.175159
84	Madagascar	MDG	Net enrolment rate, secondary, both sexes (%)	2013	30.409109
85	Burkina Faso	BFA	Net enrolment rate, secondary, both sexes (%)	2013	21.670870
86	Mauritania	MRT	Net enrolment rate, secondary, both sexes (%)	2013	21.621719
87	Burundi	BDI	Net enrolment rate, secondary, both sexes (%)	2013	21.210560
88	Mozambique	MOZ	Net enrolment rate, secondary, both sexes (%)	2013	18.345510

Out of 88 countries listed for 2013, Venezuela is ranked 53 with 74.683037%.

```
In [285… plt.boxplot(stage2['Value'])

plt.title("Boxplot of Net Enrolment Rate, secondary, both sexes(%) in 2013")
plt.xlabel("Year: 2013")
plt.ylabel("Net Enrolment Rate")
plt.grid(True)
plt.show()
```

Boxplot of Net Enrolment Rate, secondary, both sexes(%) in 2013

Year: 2013
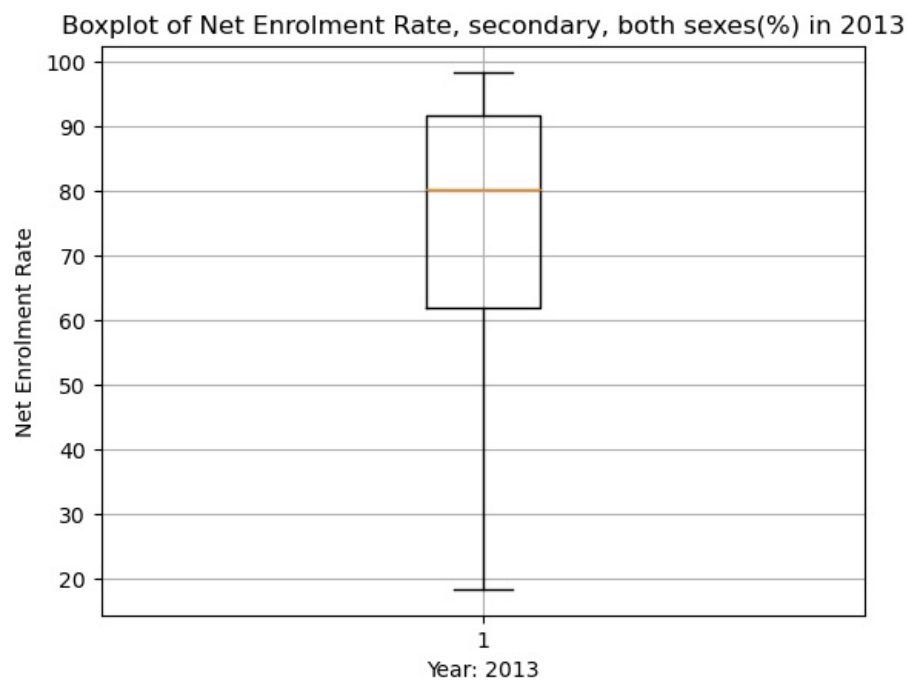
In [277... `stage2.describe()`

Out[277]:

	Year	Value
count	88.0	88.000000
mean	2013.0	73.395965
std	0.0	22.304477
min	2013.0	18.345510
25%	2013.0	61.826594
50%	2013.0	80.156143
75%	2013.0	91.612555
max	2013.0	98.400658

At 74.683037%, Venezuela's Net Enrolment Rate in 2013 falls below the median of 80.156143%.

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