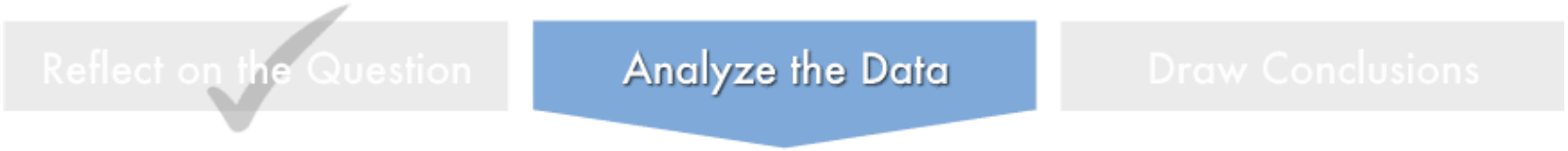

Primary Research Question

Denmark is a high-income country, and Belarus is a medium-income country of about the same size. Find the **best-fitting model** for internet usage in each country since 1990. Then answer the question: Does **income level** have an impact on the **speed** with which a country adopts use of the internet?

Analysis

Let's break this question down into the different descriptive statistics that you will need to construct your answer. Be sure that your R output includes all of the following components.

1. Create a variable that represents **proportion** of the population using the internet. (internet users divided by population).
2. Create a subset of the data that only contains data from 1990 onward.
3. Create a new variable that is "years since 1990".

4. Create two new data frames --- one for each country of interest.
5. Determine the best-fitting model (exponential or logistic) for internet usage in each country from 1990 onward.
6. Using the best-fitting model for each country, determine which country shows a faster adoption rate of the internet.

Help

(6/6 points)

Model Fit Statistics

Report the model fit statistic (R^2) for each of the following models. Report to 4 decimal places.

1a) Exponential growth model for Denmark:

0.8001

0.8001

Answer: .8001

1b) Logistic growth model for Denmark:

0.9949

0.9949

Answer: .9949

1c) What is the **best-fitting** model for growth of internet usage in **Denmark** from 1990 onward?

- (•) logistic ✔
- ( ) neither logistic nor exponential
- ( ) exponential

Help

1d) Exponential growth model for Belarus:

0.7889

0.7889

Answer: .7889

1e) Logistic growth model for Belarus:

0.9916

0.9916

Answer: .9916

1f) What is the **best-fitting** model for growth of internet usage in **Belarus** from 1990 onward?

- (•) logistic ✔
- ( ) neither logistic nor exponential
- ( ) exponential

Hide Answer *You have used 1 of 1 submissions*

Logistic Models

Help

Use the logistic models to answer the following questions:

2a) What is the **carrying capacity** in Denmark? (report to four decimal places)

0.8967

0.8967

Answer: .8967

Hide Answer *You have used 1 of 1 submissions*

(2/2 points)

2b) What is the value of **b** (the growth indicator) in Denmark? (report to two decimal places)

1.73

1.73

Answer: 1.73

2c) What is the value of **b** (the growth indicator) in Belarus? (report to two decimal places)

1.32

1.32

Answer: 1.32

Hide Answer *You have used 2 of 2 submissions*

2d) What is the **carrying capacity** in Belarus ? (report to four decimal places)

0.8987

0.8987

Answer: .8987

Hide Answer *You have used 1 of 1 submissions*

(1/4 points)

Prediction

Using the logistic model equations from your analysis, calculate the **YEAR** that 10% of the population in each country would be using the internet.

3a) Denmark=

Help

1997

1997

Answer: 1996

3b) Belarus=

2006

2006

Answer: 2004

Using the logistic model equations from your analysis, calculate the **YEAR** that 80% of the population in each country would be using the internet.

3c) Denmark=

2004

2004

Answer: 2004

3d) Belarus=

2020

Help

2020

Answer: 2019

Hide Answer *You have used 1 of 1 submissions*