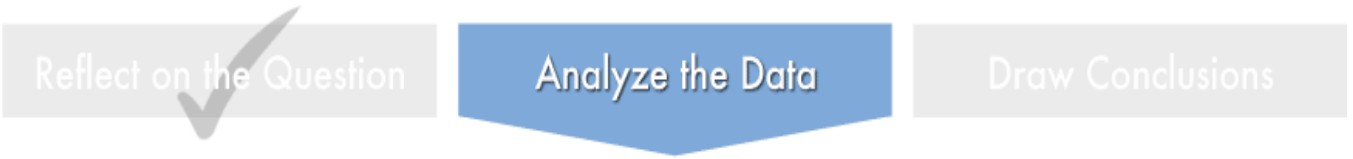
Analyze the Data



Primary Research Question

Denmark is a high-income country in Europe of about 5.5 million people. What is the **best-fitting model** for growth of internet usage in Denmark since 1990?

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 frame for the country of interest.

5. Determine the best-fitting model (exponential or logistic) for internet usage in each country from 1990 onward.

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problem

3/3 points (graded)

Model Fit Statistics

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

1a) Exponential growth model for Denmark:

0.8001 ✔

0.8001

1b) Logistic growth model for Denmark:

0.9949 ✔

0.9949

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

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

exponential

Submit You have used 1 of 1 attempt

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problem

0 points possible (ungraded)

Exponential Models

Use the exponential model to answer the following questions:

2a) What is the **growth factor** for the exponential model? *(Round to 3 decimal places.)*

1.347 ✔

1.347

2b) What is the **percent growth rate** of internet use, according to the exponential model? *(Round to a whole-number percentage, but report without using "%")*

35 ✔

35

Submit You have used 1 of 1 attempt

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problem

1/2 points (graded)

Logistic Models

Use the logistic model to answer the following questions:

3a) What is the **carrying capacity** in Denmark? *(Round to 4 decimal places.)*

0.90

✖ **Answer:** .8967

0.90

3b) What is the value of **b** (the growth indicator) in Denmark? *(Round to 2 decimal places.)*

1.73

✔ **Answer:** 1.73

1.73

Submit You have used 1 of 1 attempt

Answers are displayed within the problem

problem

2/2 points (graded)

Prediction Using Both Models

4a) In what **YEAR** does the exponential model predict that 70% of the Denmark population would be using the internet? Use the equation to solve. *(Round to a whole number.)*

2006 ✔

2006

4b) In what **YEAR** does the logistic model predict that 70% of the Denmark population would be using the internet? Use an equation to solve. *(Round to a whole number.)*

2003 ✔

2003

Submit You have used 1 of 1 attempt

✔ Correct (2/2 points)