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Module 3: Gathering and Collecting Data, Ethics, and Kernel Density Estimates > Summarizing and Describing Data > Bandwidth In Kernel Functions - Quiz

Bandwidth In Kernel Functions - Quiz

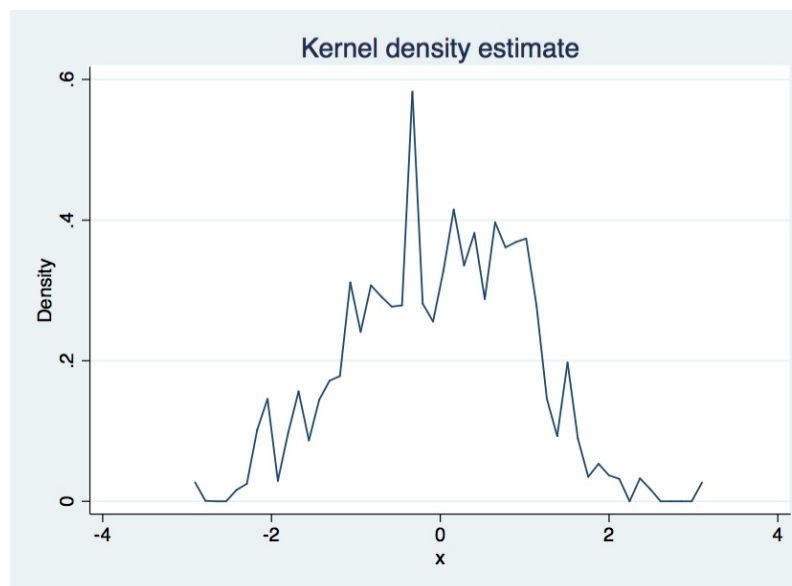
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Question 1

1 point possible (graded)

The set of figures shown presents the kernel probability density estimates from data sampled from a standard normal distribution. What parameter is changing from figure a → figure b → figure c?

Figure A:



Summarizing and Describing Data

Finger Exercises due Oct 17, 2016 05:00 IST



Module 3: Homework

Homework due Oct 10, 2016 05:00 IST



- ▶ Module 4: Joint, Marginal, and Conditional Distributions & Functions of Random Variable
- ▶ Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
- ▶ Module 6: Special Distributions, the Sample Mean, the Central Limit Theorem, and Estimation

Figure B:

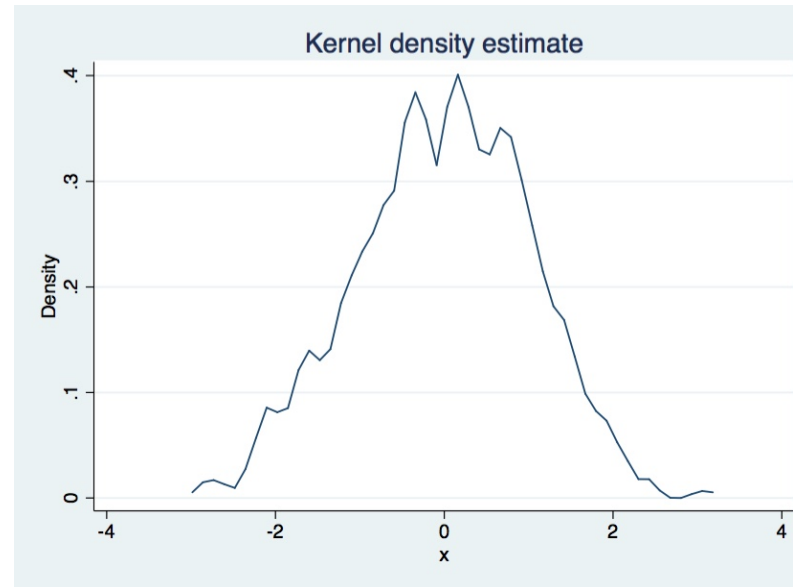
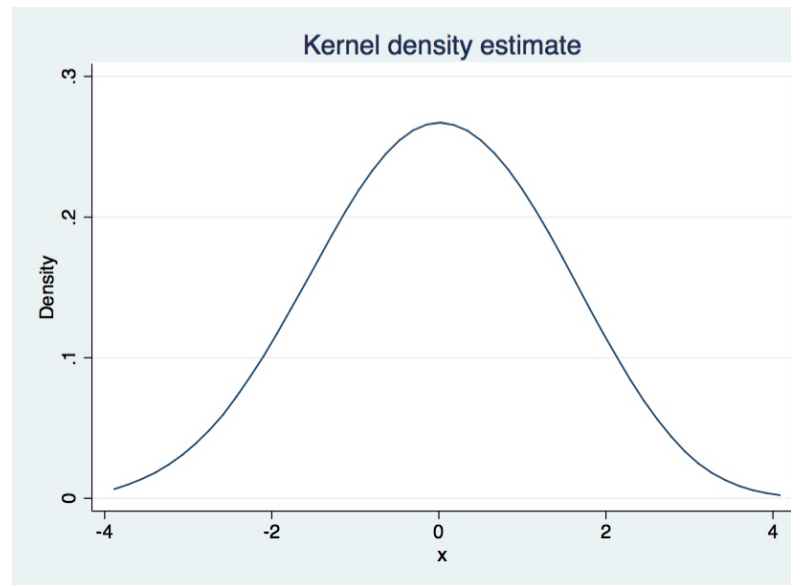


Figure C:

- ▶ Module 7: Assessing and Deriving Estimators - Confidence Intervals, and Hypothesis Testing
- ▶ Module 8: Causality, Analyzing Randomized Experiments, & Nonparametric Regression
- ▶ Module 9: Single and Multivariate Linear Models
- ▶ Module 10: Practical Issues in Running Regressions, and Omitted Variable Bias
- ▶ Module 11: Intro to Machine Learning and Data Visualization
- ▶ Module 12: Endogeneity.



- ☐ a. the bandwidth is decreasing
- ☐ b. the kernel function is different.
- ☒ c. the bandwidth is increasing
- ☐ d. The kernel function is different, and the bandwidth is increasing.

Explanation

[Instrumental Variables,
and Experimental
Design](#)

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As discussed in this segment, the parameter h , the bandwidth of the estimating function, controls the smoothness and corresponds to the bin width of the histogram. If h is too small, the estimate is too rough; if it is too large, then the resulting estimate of the function is too smooth, since it obscures the shape, and spreads the probability mass out too much, and hence, is biased.

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You have used 0 of 2 attempts

Question 2

1 point possible (graded)

True or False: Minimizing the mean squared error is a good way to determine the optimal bandwidth.

☒ True

☐ False

Explanation

The mean squared error is equal to the squared distance between the observed values and the predicted values of a random variable. This is a combination of variance and bias, both of which are determined by the choice of bandwidth, and hence is a good way to determine the optimal bandwidth.

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Discussion

Topic: Module 3 / Bandwidth in Kernel Functions - Quiz[Show Discussion](#)

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