

EDGE EFFECTS

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Abstract A digital image always represents a limited region in space, while many natural scenes and spatial patterns may be imagined to extend indefinitely in space. Such an image is only a partial sample of the scene. Our ability to draw inferences about the entire scene from an image is hampered by sampling effects known as “edge effects”. Ignoring edge effects could introduce systematic bias, leading to potentially serious methodological errors.

I will discuss the magnitude of edge effects, and describe practical methods for combatting them. Edge effects are of two main types: *size-dependent sampling bias* and *censoring effects*. Sampling bias can be eliminated by changing the sampling technique, or ‘corrected’ by weighting the observations. Censoring effects can be tackled using the methods of survival analysis. Some new statistical techniques are designed so that the edge effects ‘cancel out’.

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