

# Survival of the Fittest: Variable Selection on Agricultural Data from the Galápagos Islands

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April 19th, 2018

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# Galápagos Islands

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# Agent-Based Simulation

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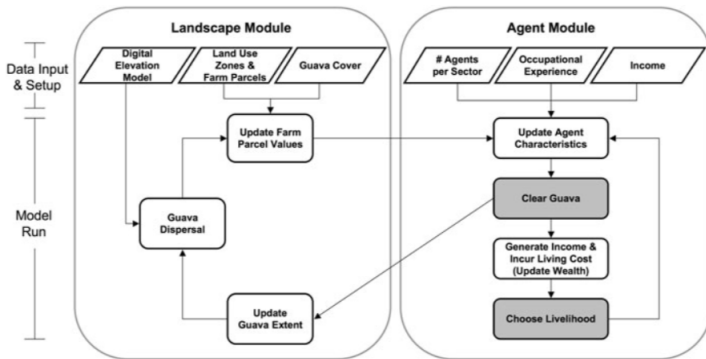
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From Miller et. al.

# Data description

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# Data transformation

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# Elastic Net

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## Formulation

$$\min_{\beta} \|\mathbf{Y} - \mathbf{X}\beta\|_2^2 + \lambda \left[ \underbrace{(1 - \alpha) \|\beta\|_2^2}_{\text{Ridge}} + \underbrace{\alpha \|\beta\|_1}_{\text{LASSO}} \right]$$

- Set  $\alpha$  and  $\lambda$  using cross-validation

# Forward Stepwise

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# Productivity Model - Elastic Net

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# Productivity Model - Forward Stepwise

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# Productivity Model - Comparison

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# References

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