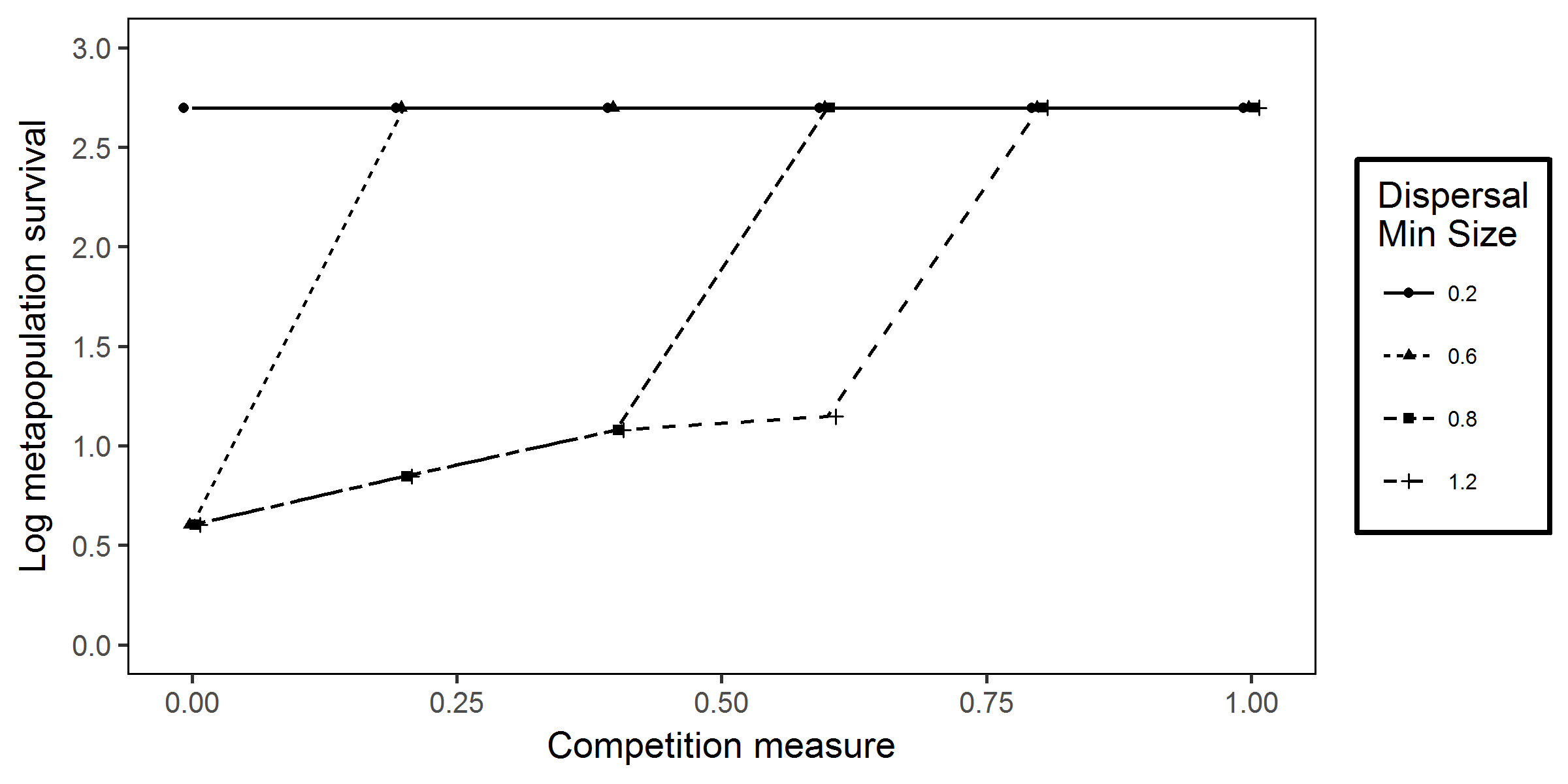
Dispersal Model Graphs

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# No environmental variation

## Metapopulation survival

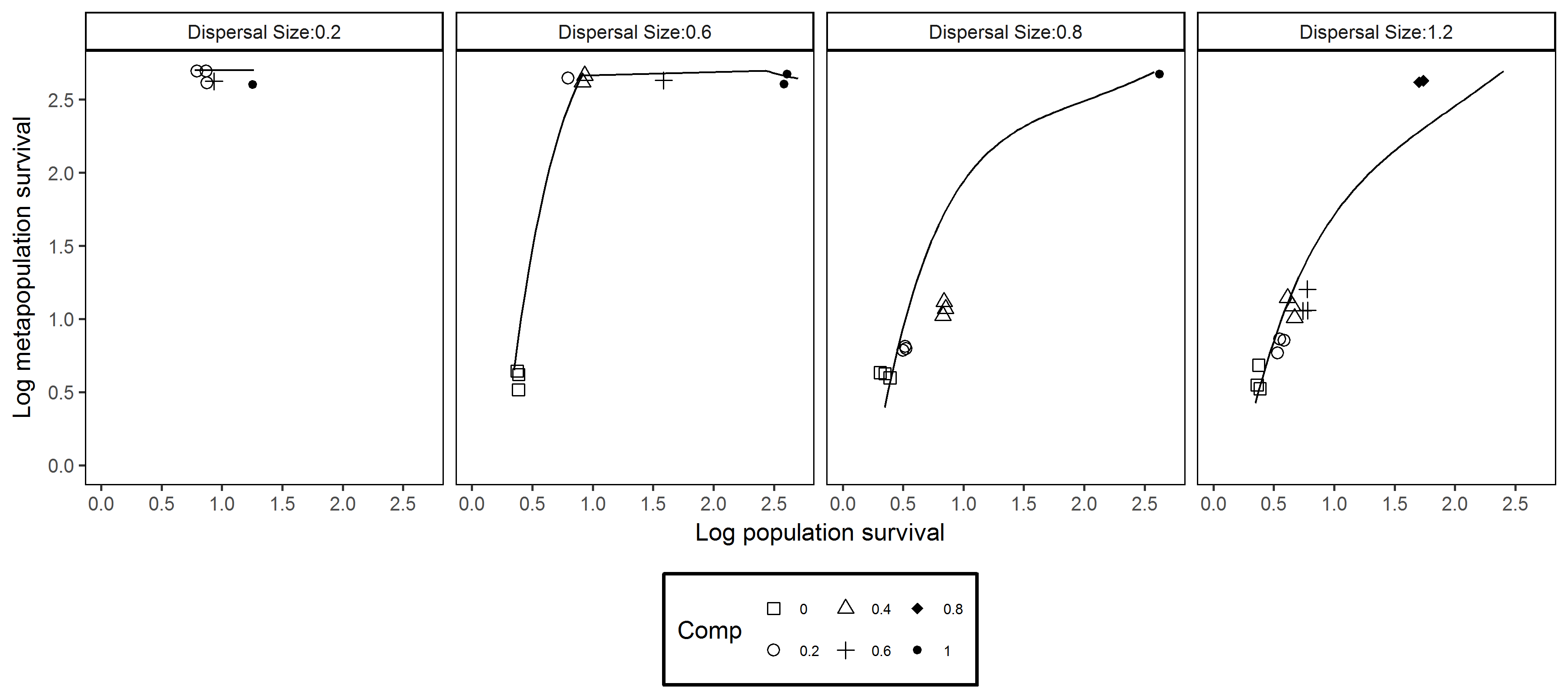


1. \_Figure [MetSurv]:Metapopulation survival against competition type by minimum dispersal size. Competition type ranges from 0 to 1, with 0 being full scramble competition and 1 is full contest competition. Individual size varies from 0 to 1. Environmental variance is 0.

## Metapopulation survival against population survival

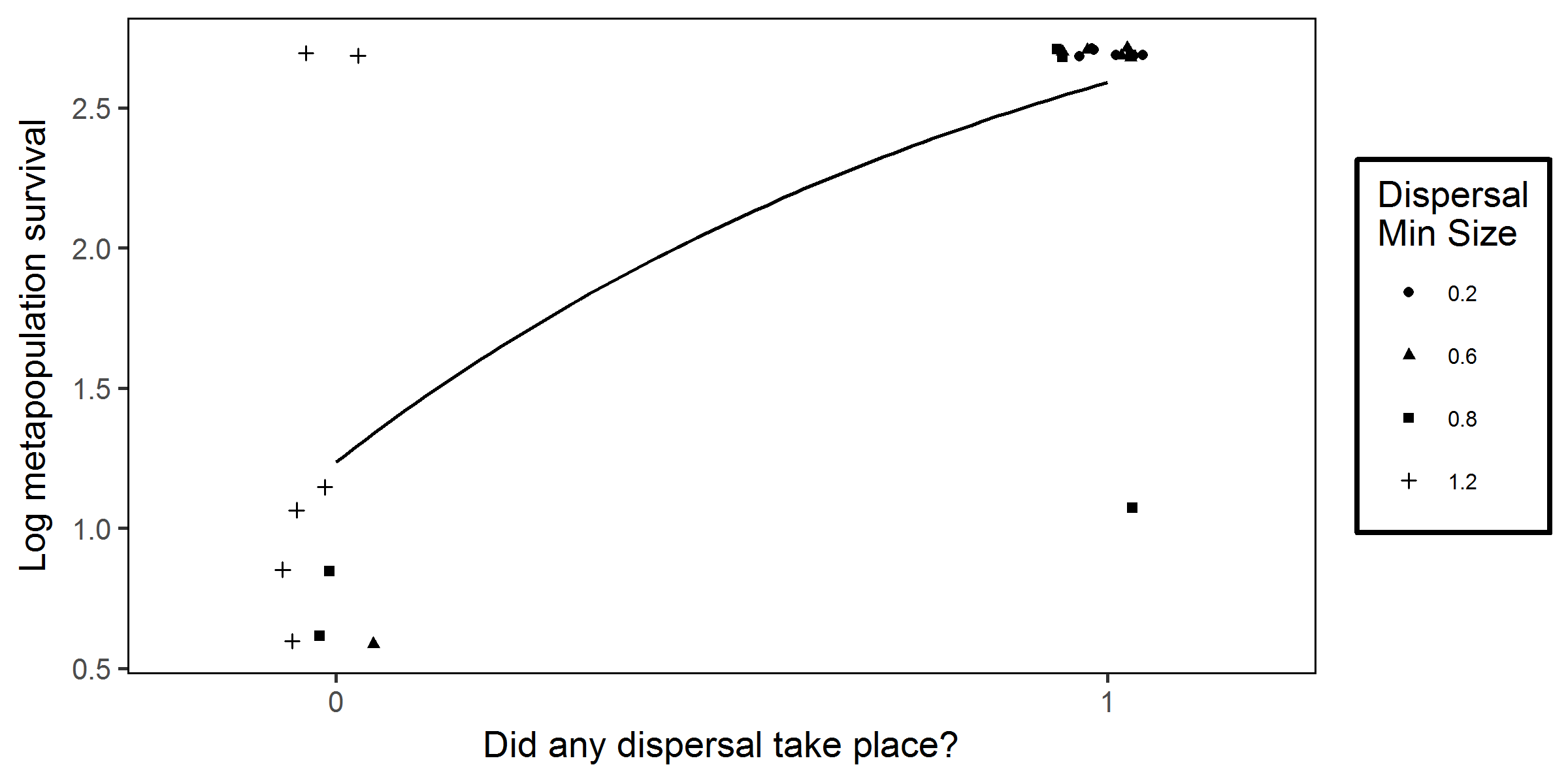
Warning: Removed 34 rows containing missing values (geom\_point).

Warning: Removed 64 rows containing missing values (geom\_smooth).



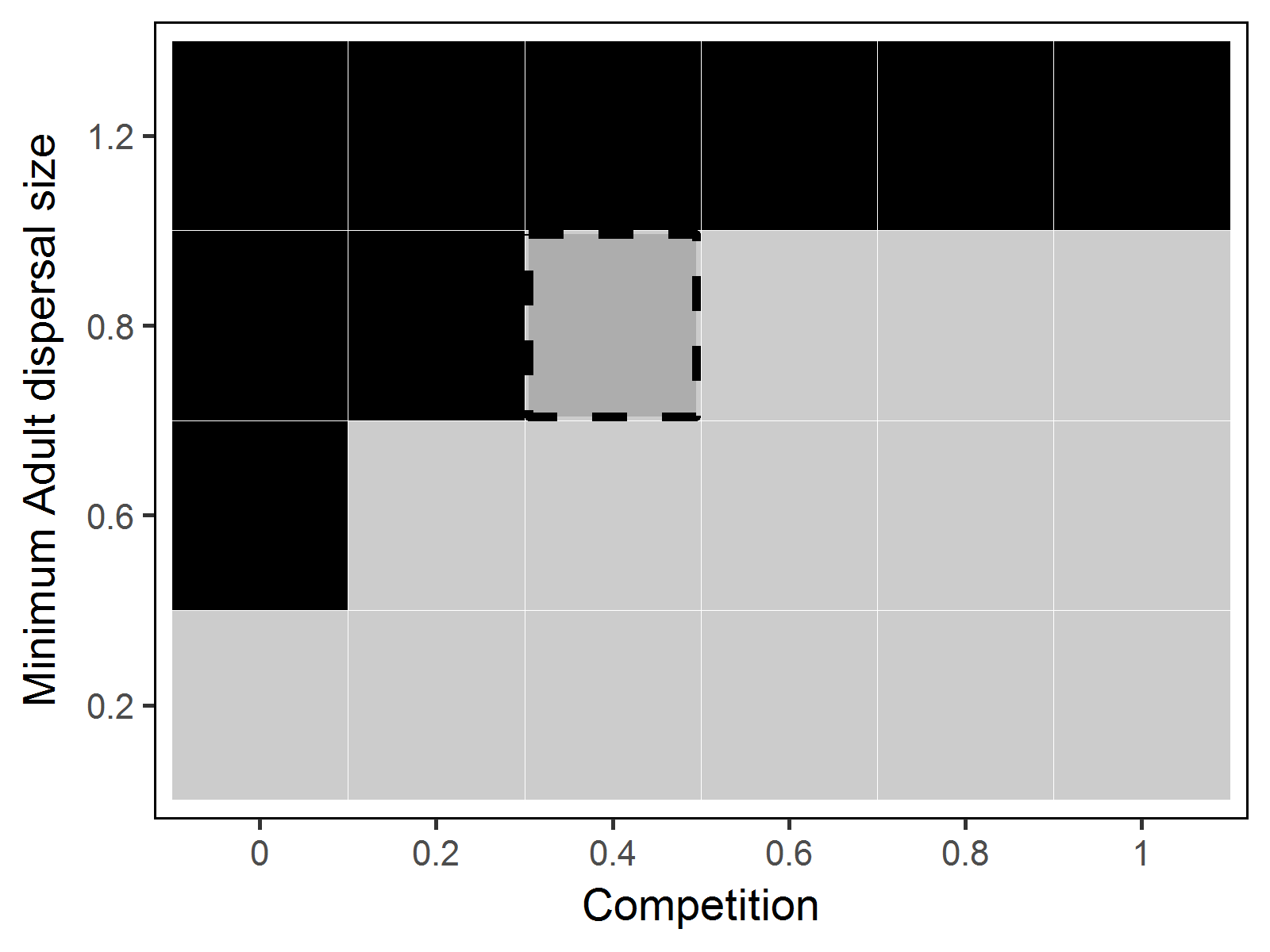
1. *Figure [MetSurvPop]: Population survival against metapopulation survival, by minimum adult dispersal size and competition type. Competition type ranges from 0 to 1, with 0 being full scramble competition and 1 is full contest competition. There is no environmental variation.*

## Metapopulation survival and dispersal



1. *Figure [MetDis]: Comparing metapopulation survival to a binary measure of whether any populations within the metapopulation produced dispersers at any time. 0 means no disperal took place, 1 dispersal did take place. No environmental variation*

## What affects dispersal?

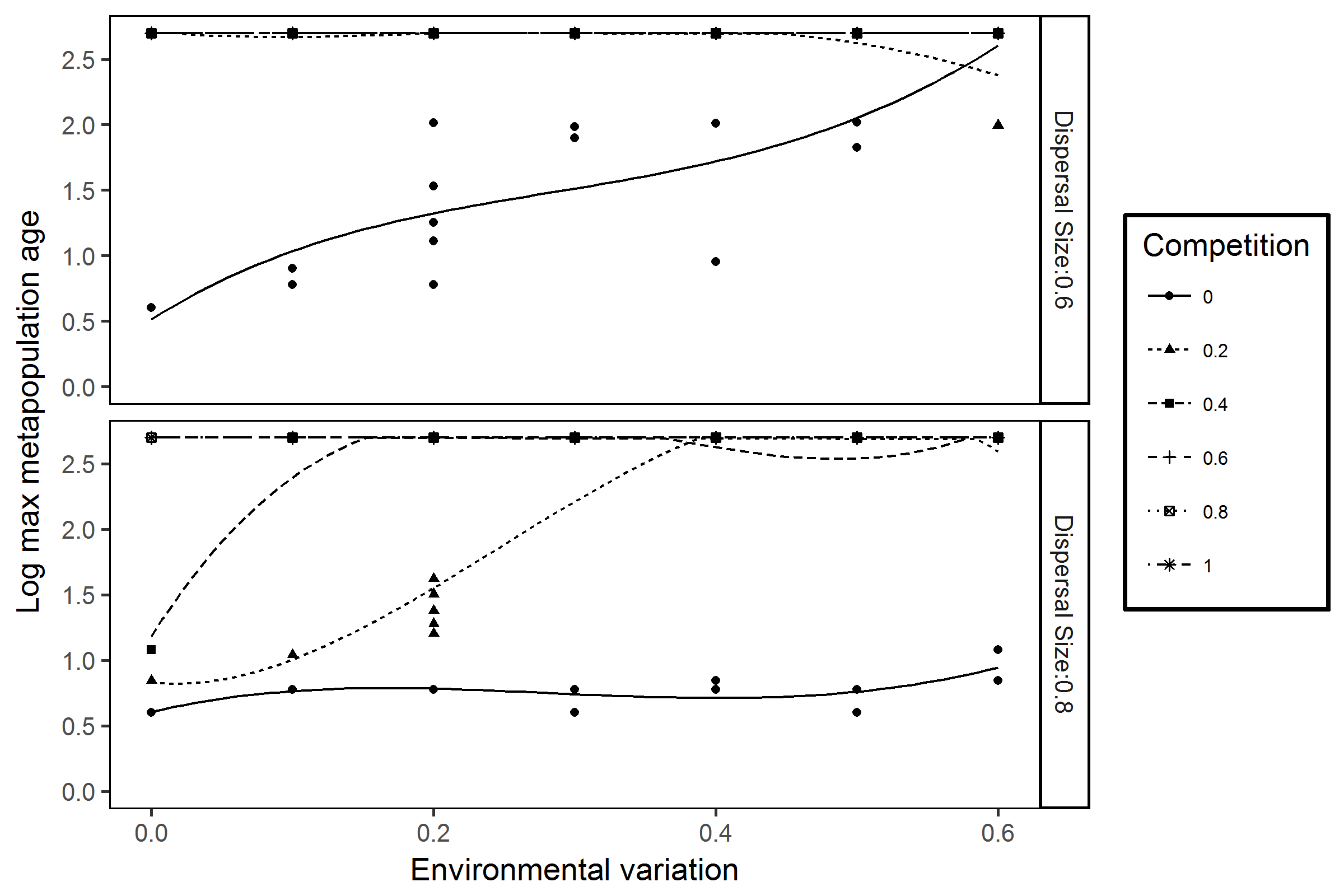


1. *Figure [Disp]: Showing how competition type and minimum adult dispersal size interact to affect whether any dispersal took place. Black squares indicate no dispersal took place, light grey squares indicate dispersal occurred. The square with the black outline is the one combination of competition and minimum dispersal size where dispersal did take place, but the metapopulation did not survive to 500 generations.n Environmental variation is set to zero.*

# With environmental variance

## Metapopulation Survival

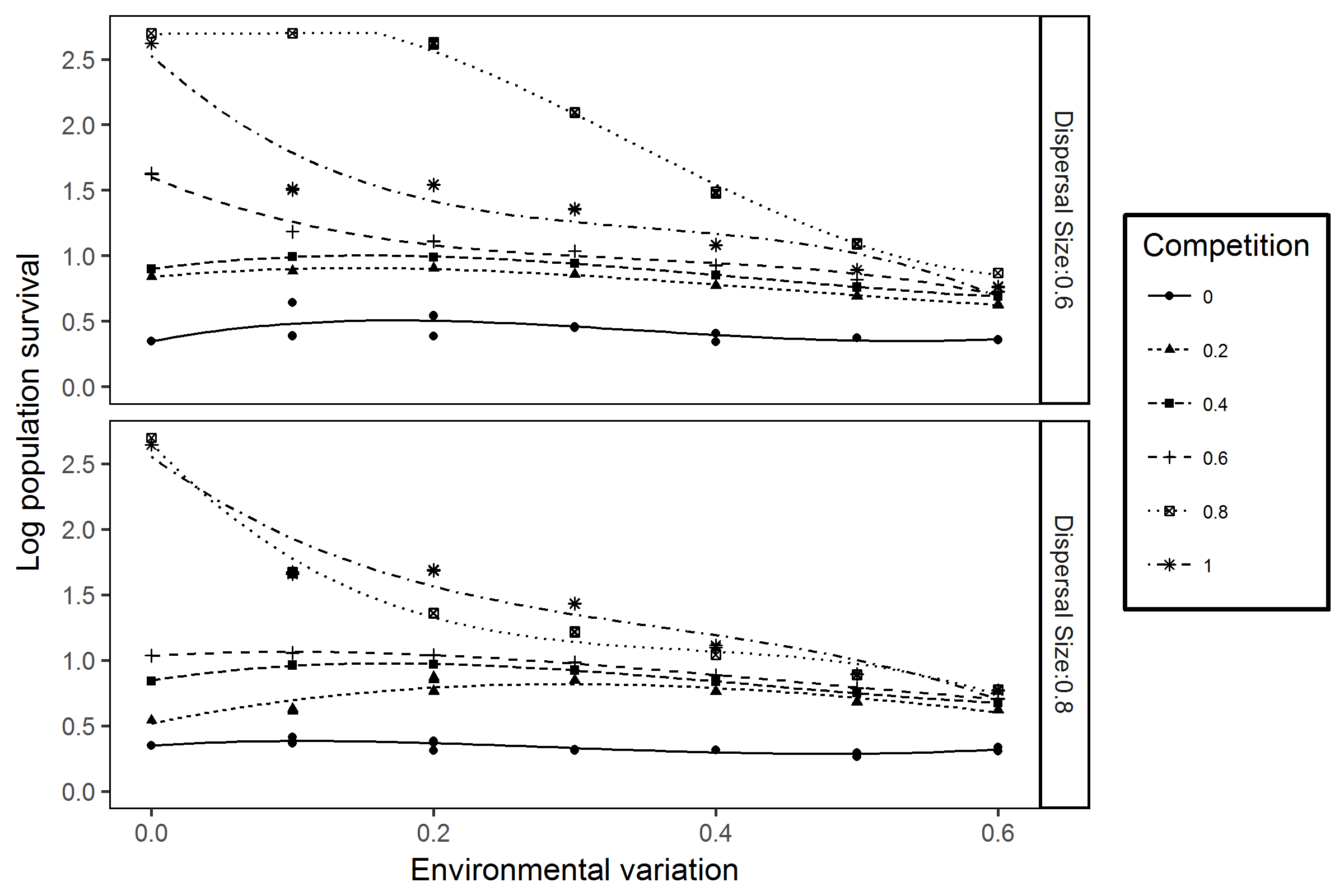
Warning: Removed 89 rows containing missing values (geom\_smooth).



1. *Figure [EnvMetSurv]:Comparing environmental variation to maximum metapopulation age by competition type, looking only at minimum adult disperal size 0.6 and 0.8*

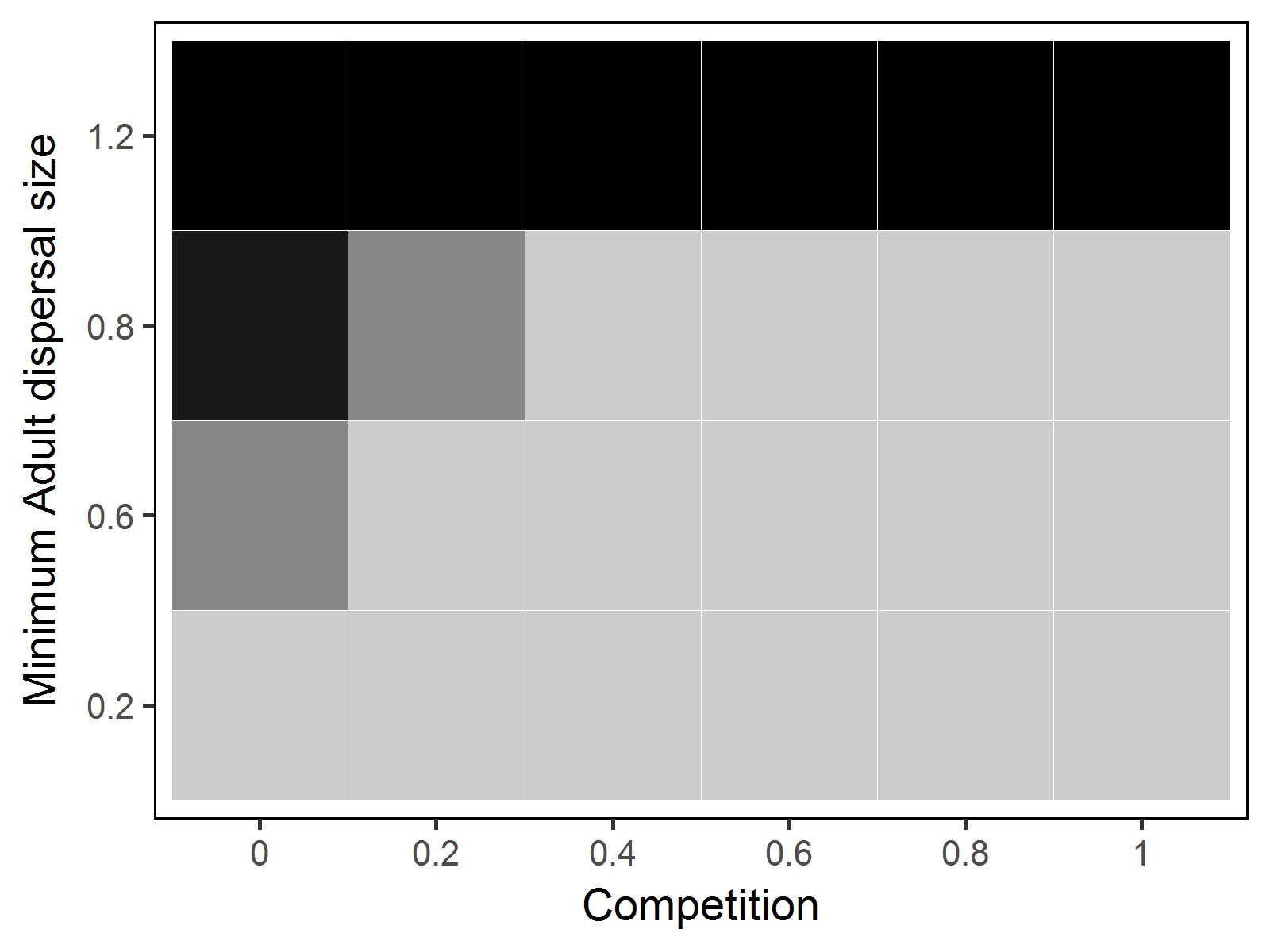
## Population Survival

Warning: Removed 19 rows containing missing values (geom\_smooth).



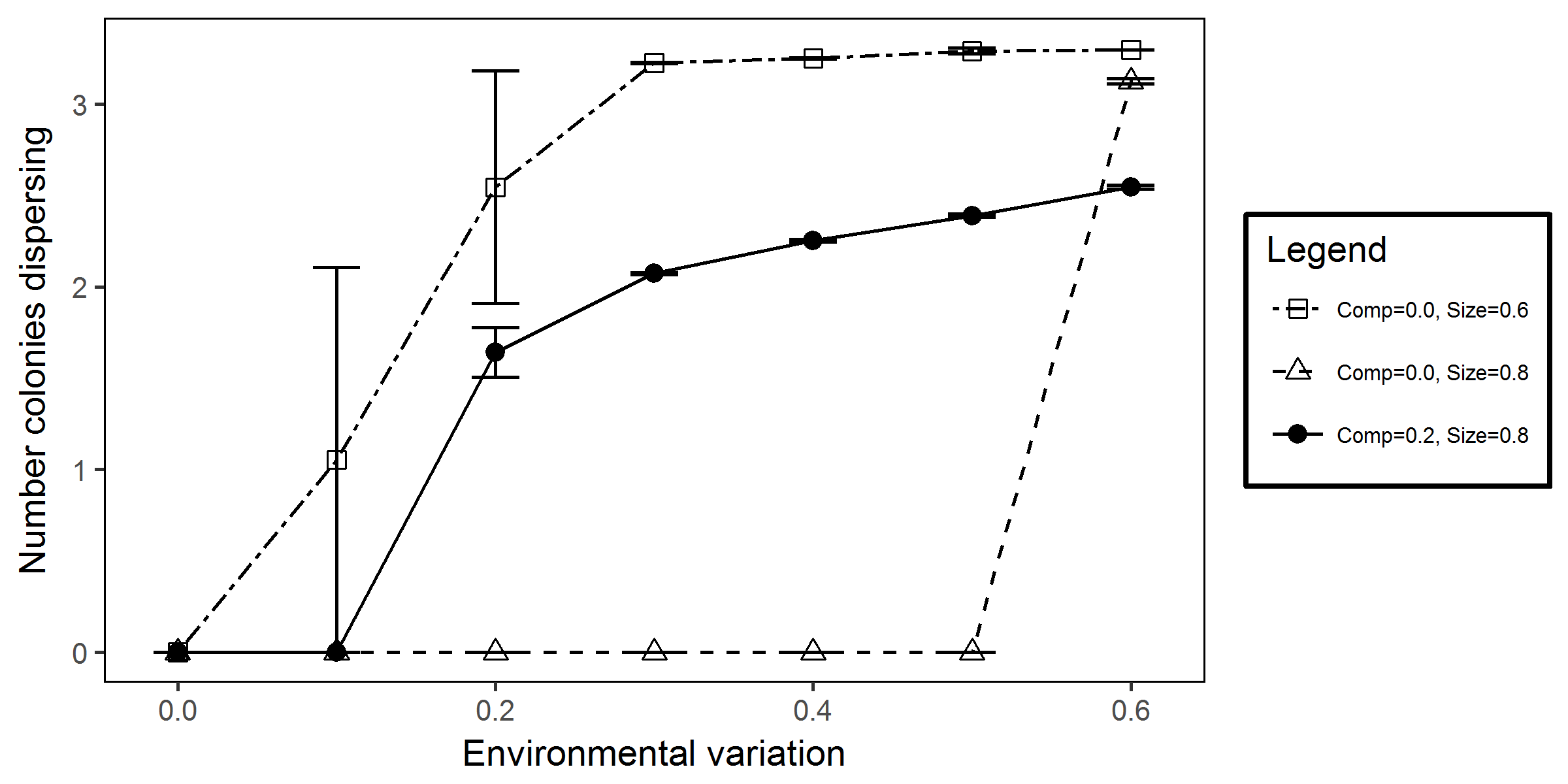
1. *Figure [EnvPopSurv]:Population survival against environmental variance by competition type, looking only at minimum adult dispersal size 0.6 and 0.8.*

## What restricts dispersal?



1. *Figure [EnvDisp]: Showing how competition type and minimum adult dispersal size interact to affect whether any dispersal took place with environmental variation. Black squares indicate no dispersal took place, light grey squares indicate dispersal occurred and intermediate greys indicate dispersal took place in some metapopulation. With environmental variation dispersal has gone from zero to some dispersal when size is 0.6 and competition is 0, size is 0.8, comp is zero, and when size is 0.8 and comp is 0.2*

## Dispersal amount and environmental variation



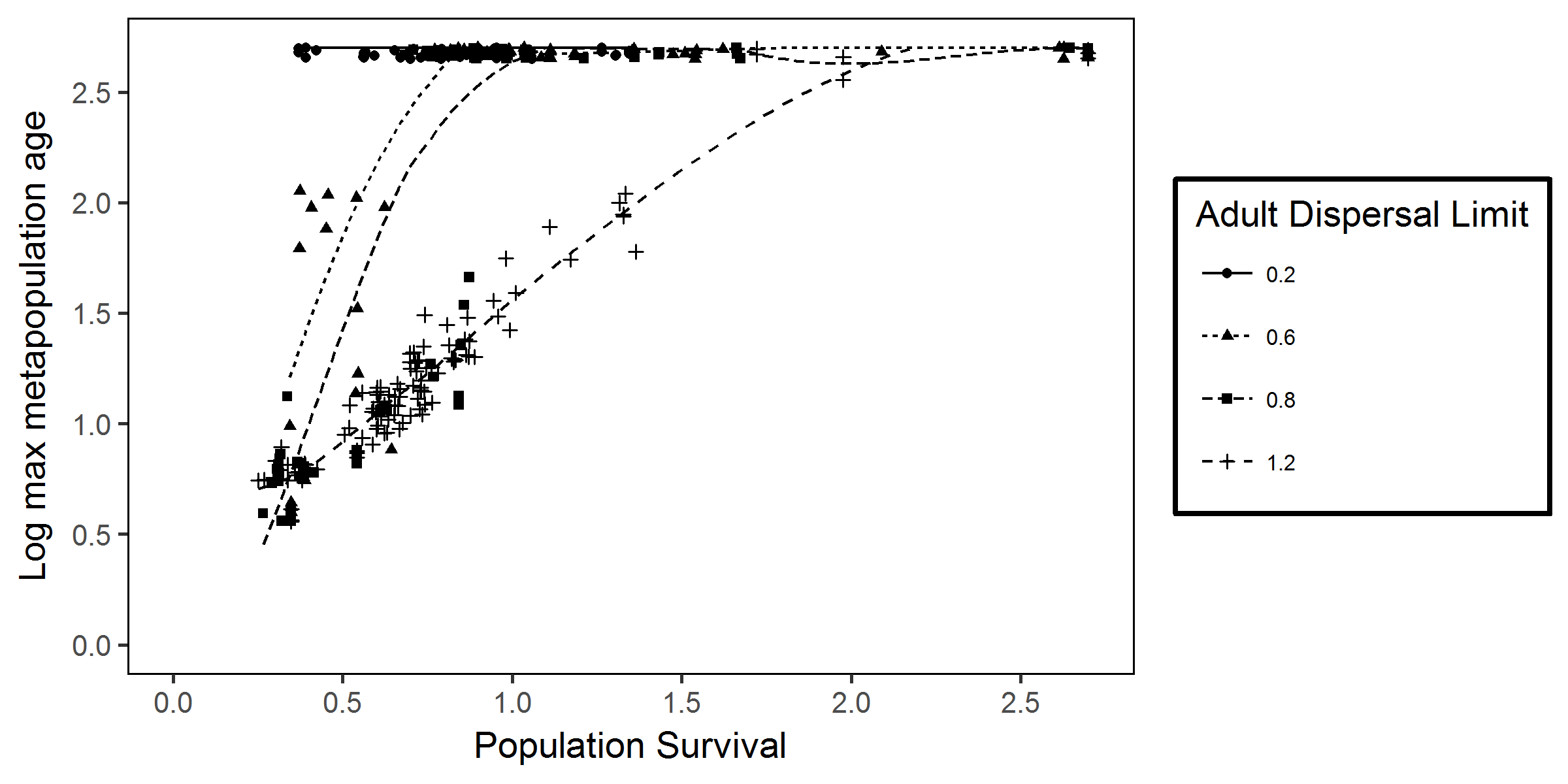
1. *Figure [EnvVarDisp]: Average of log10 number of dispersing colonies per time step against environmental variation.*

# Graphs removed?

## Metapopulation vs population survival by minimum disperal size

Warning: Removed 151 rows containing missing values (geom\_point).

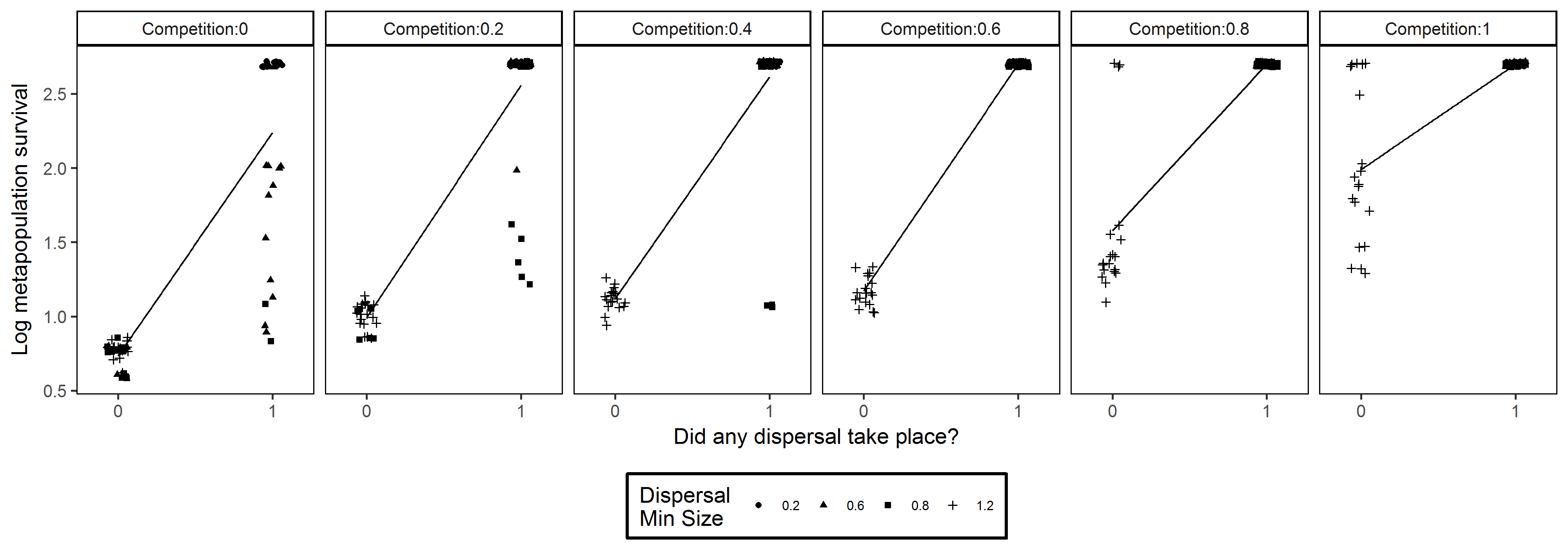
Warning: Removed 67 rows containing missing values (geom\_smooth).



1. *Figure [EnvMetSurvPop]*

## Metapopulation survival and dispersal

Warning in predict.lm(model, newdata = data.frame(x = xseq), se.fit = se, :  
prediction from a rank-deficient fit may be misleading  
  
Warning in predict.lm(model, newdata = data.frame(x = xseq), se.fit = se, :  
prediction from a rank-deficient fit may be misleading  
  
Warning in predict.lm(model, newdata = data.frame(x = xseq), se.fit = se, :  
prediction from a rank-deficient fit may be misleading  
  
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prediction from a rank-deficient fit may be misleading  
  
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prediction from a rank-deficient fit may be misleading  
  
Warning in predict.lm(model, newdata = data.frame(x = xseq), se.fit = se, :  
prediction from a rank-deficient fit may be misleading



1. *Figure [EnvMetDisp]*