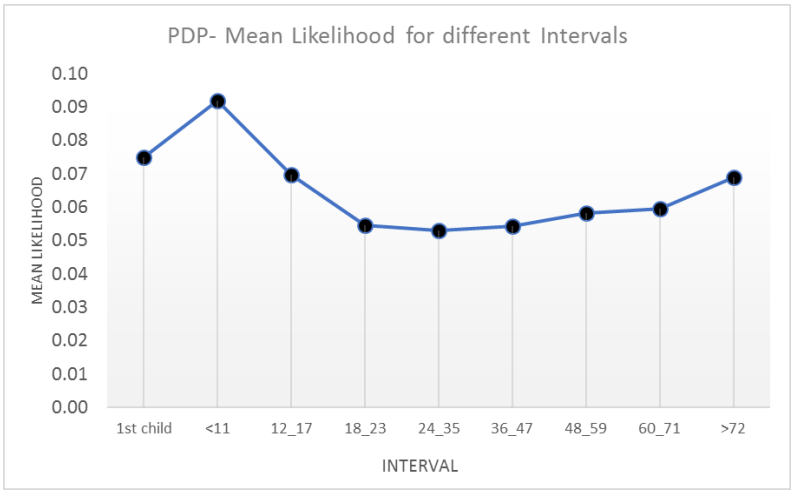
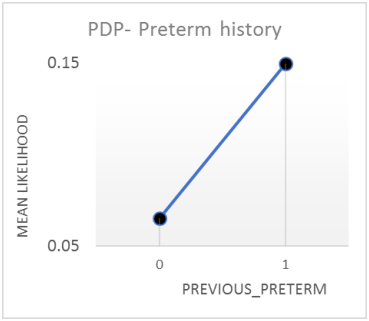
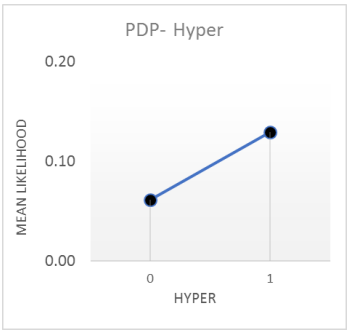
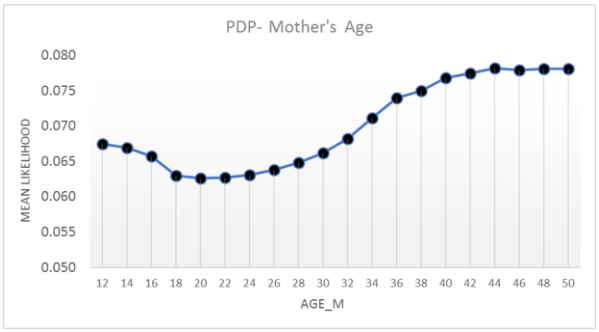
**Partial dependence plots**

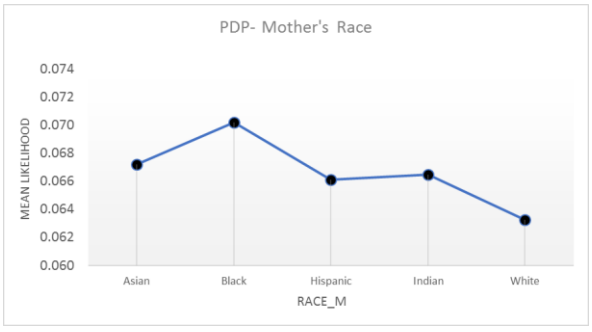
The PDP is a great tool for interpretation because it calculates the `effect size` of each level given other conditions being equal. For example, mothers with a doctorate's degree might have a higher age compared to those with a bachelor's degree at the time of delivery. The PDP controls the effect of age on the response and shows an 'effect size' that is attributable to the degree level. This is done by passing over the same dataset to the predictive model and fixing the *Education* variable at a certain level like a doctorate. The average of these predictions for all of the observations is the marginal effect of the doctorate degree. The same procedure is repeated to obtain the marginal effects of the other levels of *Education.* The important point about the PDP is that it considers the (average) effect of all other variables, which are called confounding variables in the statistical literature, in the calculation of the likelihoods [1].






## References

1. Friedman, J.; Hastie, T.; Tibshirani, R. *The elements of statistical learning*; Springer series in statistics New York, NY, USA:: 2001; Volume 1.