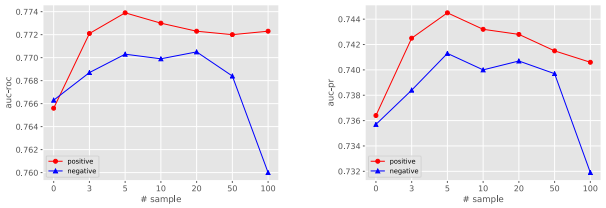
SUPPLEMENTARY

Parameter Sensitivity

To enhance comprehension of the proposed dynamic positive sampling, we conduct an investigation into the sensitivity of the sampling cases. By varying the number of positive and negative samples from 0 to 100, we perform link prediction experiments on the MovieLens dataset to evaluate sensitivity. The experimental results are presented in Figure 5. Our observations indicate that a model with positive sampling can outperform a model with only negative sampling, and optimal performance can be achieved with approximately 5 positive sampling cases. These findings provide further evidence supporting the rationale behind the proposed dynamic positive sampling approach.



(a) AUC-ROC w.r.t. # Sample (b) AUC-PR w.r.t. # Sample

Figure 5: Link prediction performance w.r.t. # Sample. The horizontal axis represents the number of samples and the vertical axis is the respective AUC value. The red line and the blue line stand for the performance of BiANE model with varying positive samples and varying negative samples respectively.