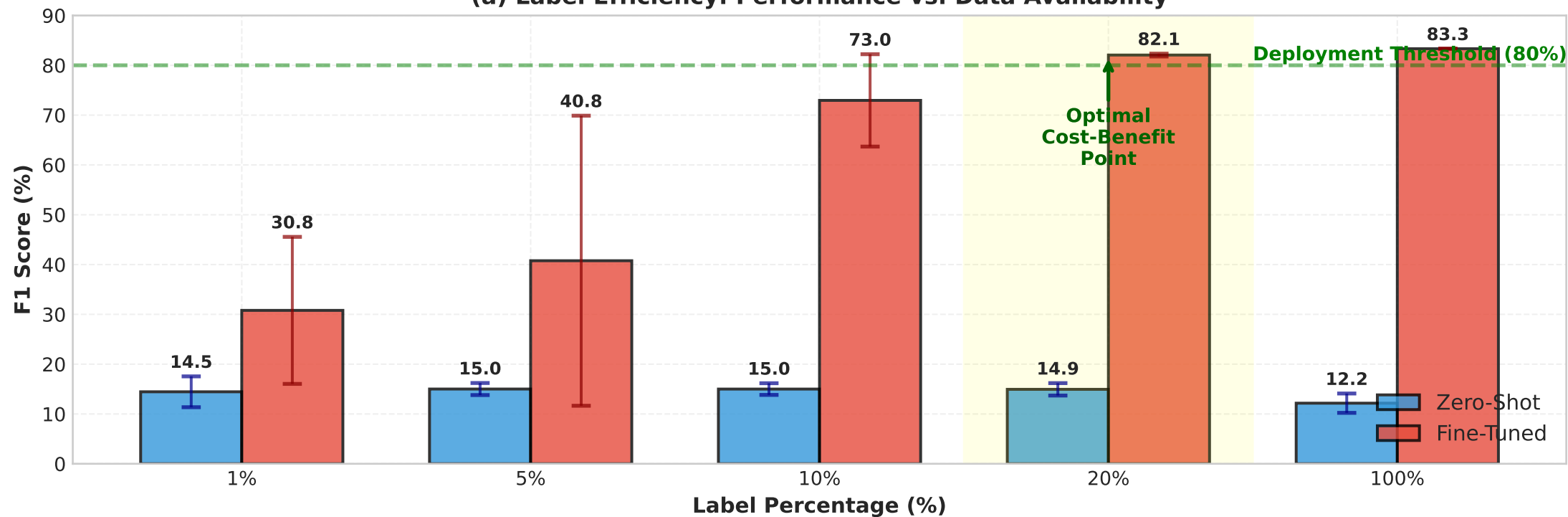
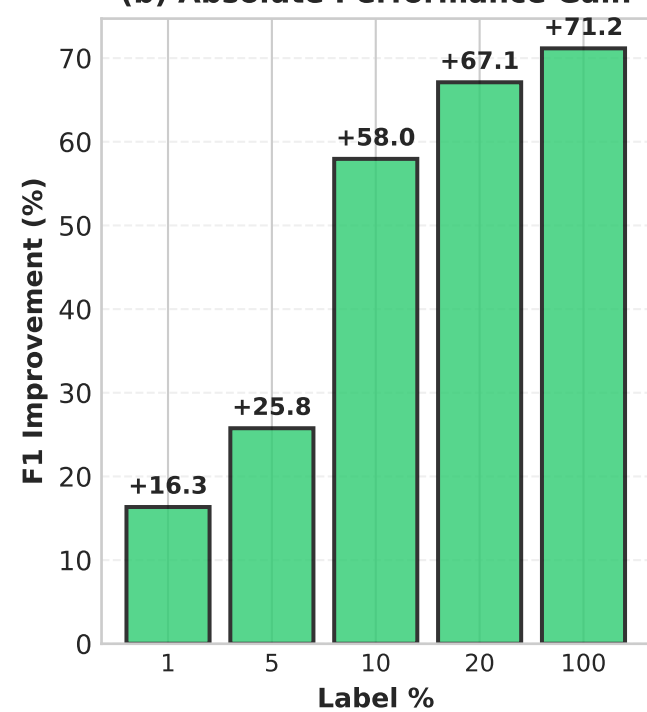


**Figure 5: Label Efficiency Analysis - PASE-Net Achieves 98.6% Performance with Only 20% Labels**

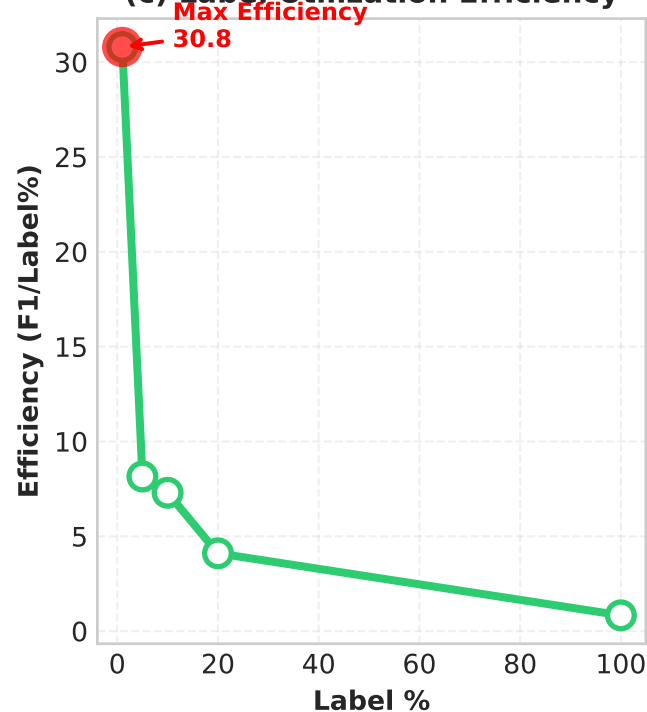
**(a) Label Efficiency: Performance vs. Data Availability**



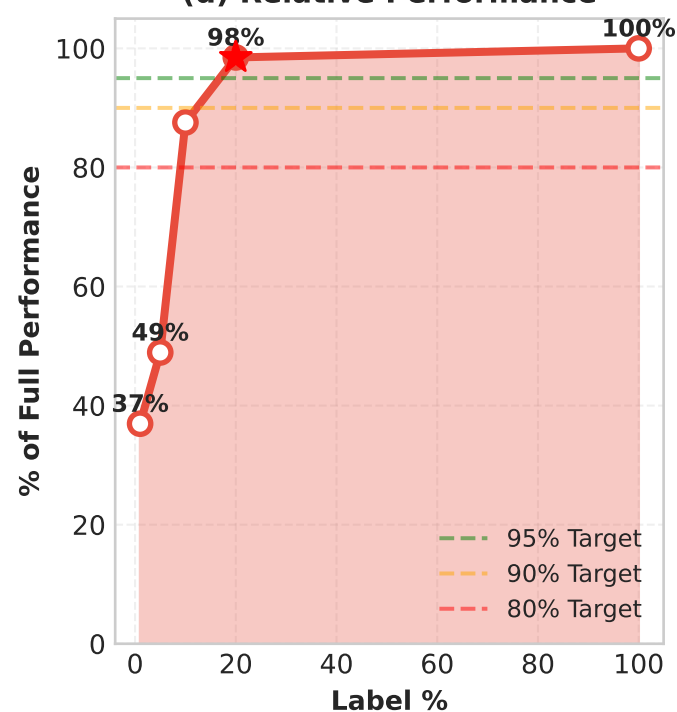
**(b) Absolute Performance Gain**



**(c) Label Utilization Efficiency**



**(d) Relative Performance**



**Key Finding: 20% labeled data achieves 82.1% F1 score, representing optimal cost-benefit trade-off with 80% annotation savings**