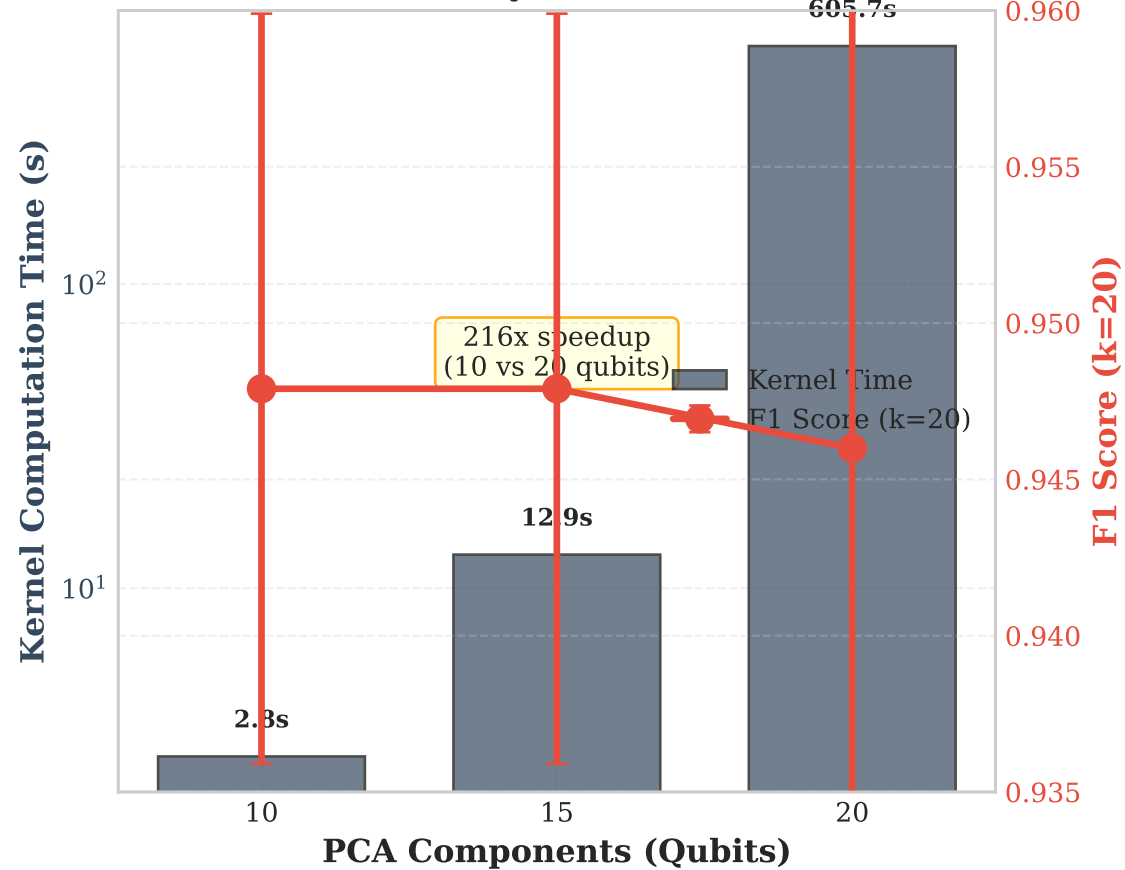**(a) Dimensionality: Cost vs Performance**

(b) Circuit Depth: Cost vs Benefit

(a) axis labels: Kernel Computation Time (s); PCA Components (Qubits); F1 Score (k=20)

Data labels: 2.3s, 12.9s, 605.7s

216x speedup (10 vs 20 qubits)

Kernel Time
F1 Score (k=20)

(b) axis labels: Computation Time (s); F1 Score (k=15); reps=1 (baseline); reps=2

Legend: Time (s); F1 (k=15)

Trade-off Analysis:
+2.4% F1 improvement
+80% computation time