(a) Sector-wise Default Rate Analysis Risk Assessment Comparison Across Domains
(b) Non-linear Risk Patterns by Income Low Risk Sectors Traditional (Linear) High Risk Sectors Framework (Non-linear) 7 Traditional Risk Reduction Proposed Framework 7 6 Default Rate (%) **Default Risk (%)**P 5 9 9 23% lower Non-linear default rates jump 3 2 2 230.2014 **Income Bracket** Sector (c) Risk Score Distribution Comparison (d) Early Warning Detection Capability 100 2.00 Traditional Framework 1.75 Low Risk 80 High Risk 4-6 months earlier detection 1.50 Detection Rate (%) 1.25 Density 0.75 0.50 20 Traditional 0.25 Framework 4-6 Month Advantage 0.00 0.2 0.4 0.6 0.8 1.0 3 5 0.0 Risk Score **Months Before Default**