Santiment Data Anomalies as Conditional Market-State Features: A Production-Audited Event Study on Binance-Tradable Crypto Assets

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Abstract

This paper evaluates four Santiment data anomalies as conditional market-state features: Social Dev Score, ETH Whale Dump, Price/Network Activity Divergence, and Project in Trends. The study combines production-audited definitions, production event rows, and Binance hourly USDT prices for mapped tradable assets. Events are compared with same-asset, same-quarter control timestamps over 1h, 4h, 24h, and 72h horizons. The strongest evidence is concentrated in Price/Network Activity Divergence, which shows positive event-minus-control signed returns and materially higher realized volatility. Project in Trends behaves more like an attention and risk-state marker: post-event realized volatility rises while 24h signed returns are negative in this sample. ETH Whale Dump remains an ETH-specific event-risk label, and Social Dev Score has limited statistical evidence after the Binance and sparse-asset filters. These findings should be interpreted as conditional event-state evidence. They are not a transaction-cost-aware trading strategy, out-of-sample validation, or standalone proof of alpha.

1 Executive Overview

The final evaluated sample contains 1,211 unique events across 34 mapped Binance-tradable assets. The source window is 2023-01-01 through 2026-05-28, with effective coverage differing by data anomaly because production history and price coverage differ. The strongest 24h directional result is Price/Network Activity Divergence: event-minus-control forward return is 2.14 percentage points with FDR q=0.018. The strongest volatility result is also Price/Network Activity Divergence: 24h realized volatility is 2.17 percentage points above controls with FDR q=0.002. Project in Trends shows higher 24h realized volatility but negative 24h signed return. ETH Whale Dump and Social Dev Score do not provide strong 24h directional evidence in this run.

The practical read is conservative. These data anomalies are useful as context features for alerts, dashboards, risk-state interpretation, and research workflows. They are not yet transaction-cost-aware portfolio rules. The current Binance-tradable asset map should also be treated as a study filter, not as proof that all events were tradable with sufficient liquidity at the historical event time.

2 What Santiment Data Anomalies Are

Santiment data anomalies are production-generated event labels. They indicate that a metric, behavior, or social/on-chain state has moved into an unusual condition according to detector-specific logic. They