

P&G Data Science Case – Product Strategy Insights

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Introduction

Project Objective

Explore product strategy through data on energy, sustainability, COVID, and stocks.

Goal

Recommend strategies aligned with consumer behavior and ESG goals.

Hypotheses

Test COVID impact on stock price, ESG consumer impact, ESG data gaps.



Hypothesis 1: COVID vs Stock Price

Claim

No correlation between COVID cases and P&G stock price.

Significance

Market confidence during a public health crisis impacts investor behavior.

Context

COVID caused global uncertainty affecting stock markets worldwide.



Hypothesis 1: Methodology

Data Sources

COVID-19 weekly new cases (U.S.) and P&G stock prices (2017–2025).

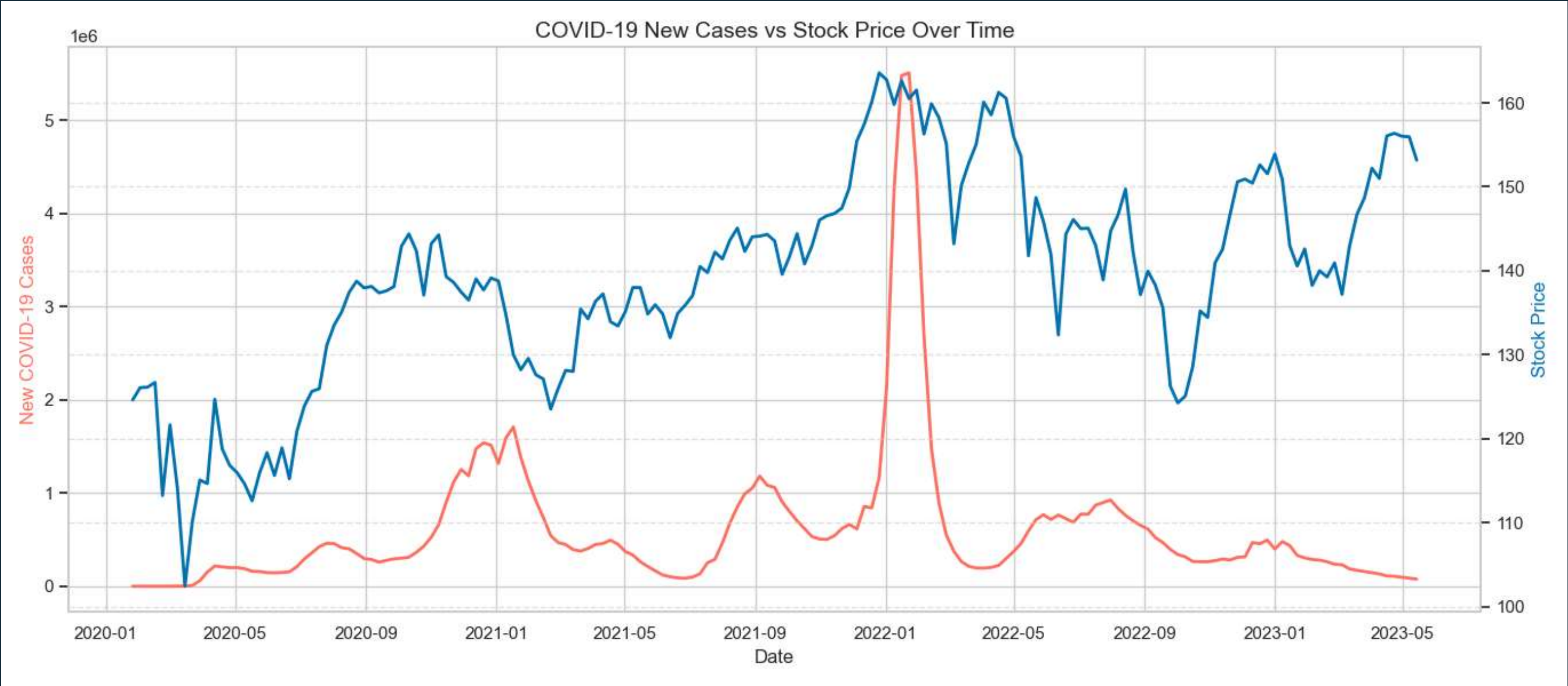
Preprocessing

Aligned data by Sundays and filtered to COVID date range.

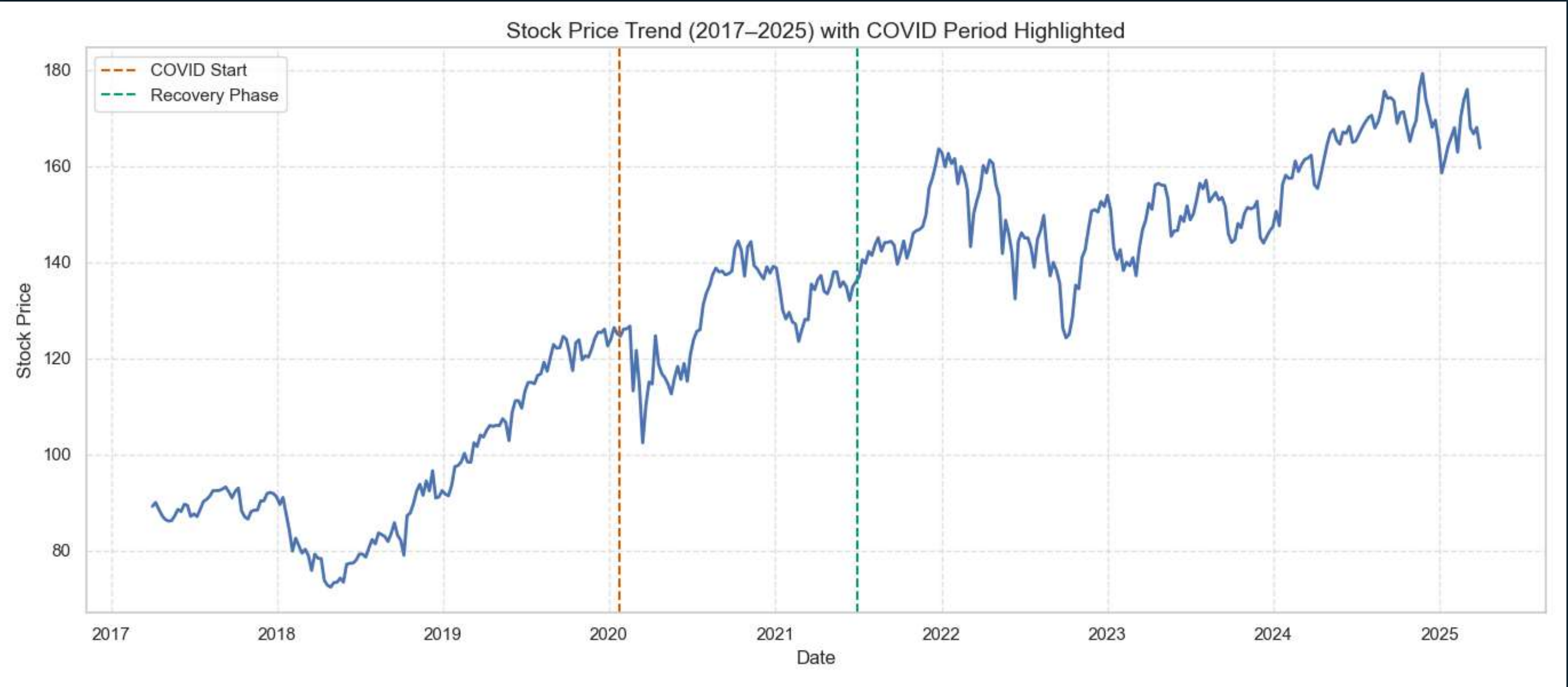
Analysis

Applied Pearson and Spearman correlation tests for relations.

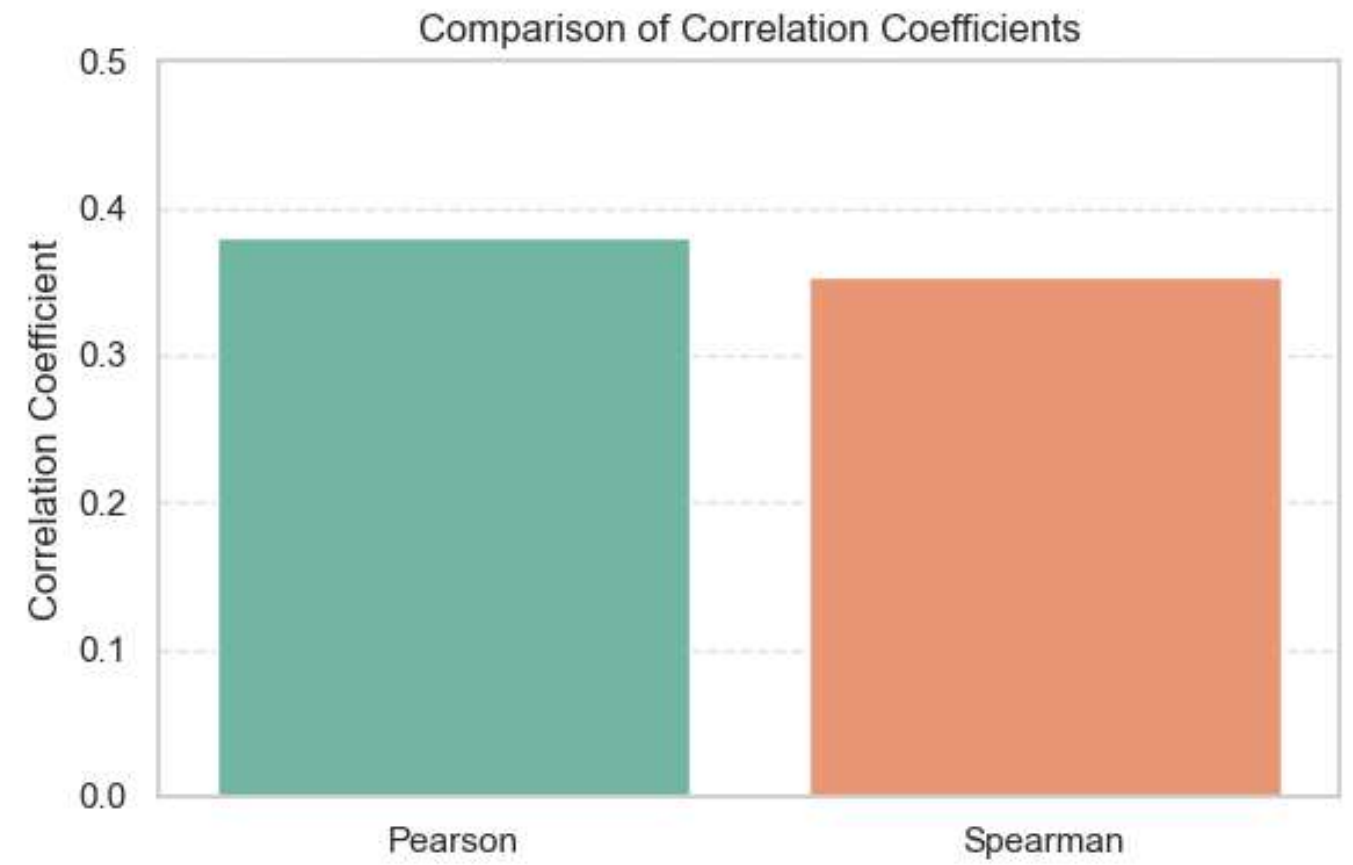
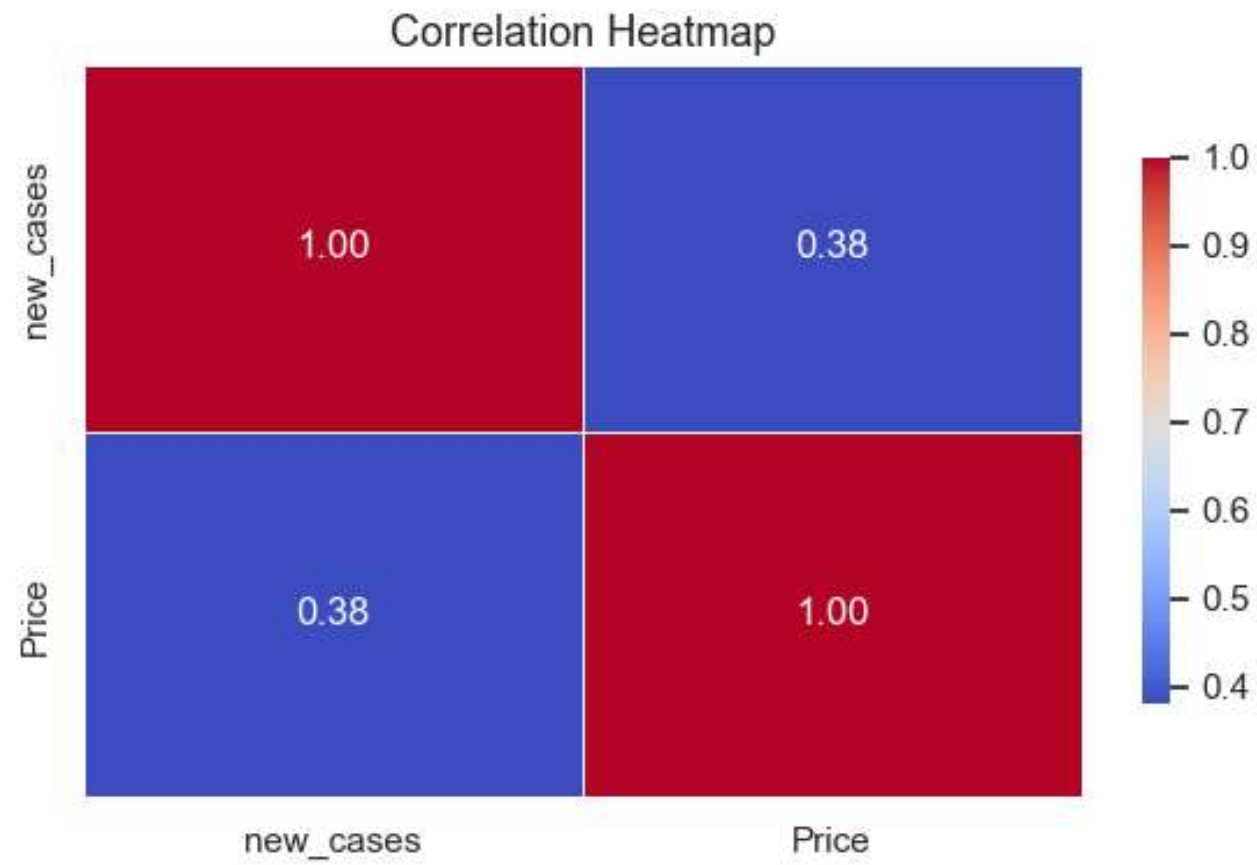
Data Visualization



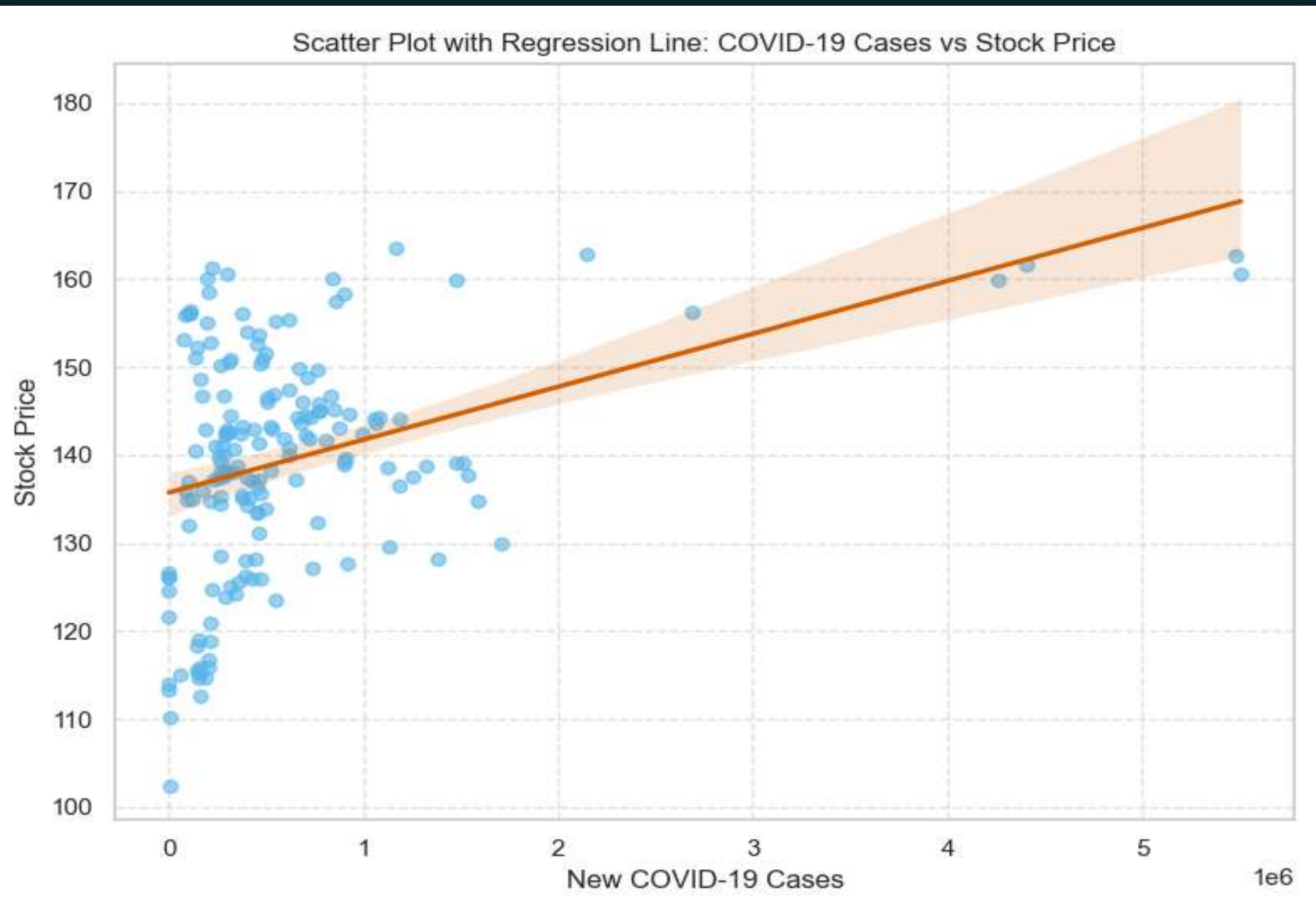
Data Visualization



Correlation results



Data Visualization



ESG Strategy Insights

1

Hypothesis 2

ESG strategy impact on consumers

2

Hypothesis 3

ESG data gaps for targeting



Hypothesis 2: *ESG* & Consumer Impact

Statement

ESG improvements do not reduce consumer satisfaction or demand.

Importance

Supports P&G's goal to lead in sustainability without harming sales.

Hypothesis 2: Methodology

Data Collected

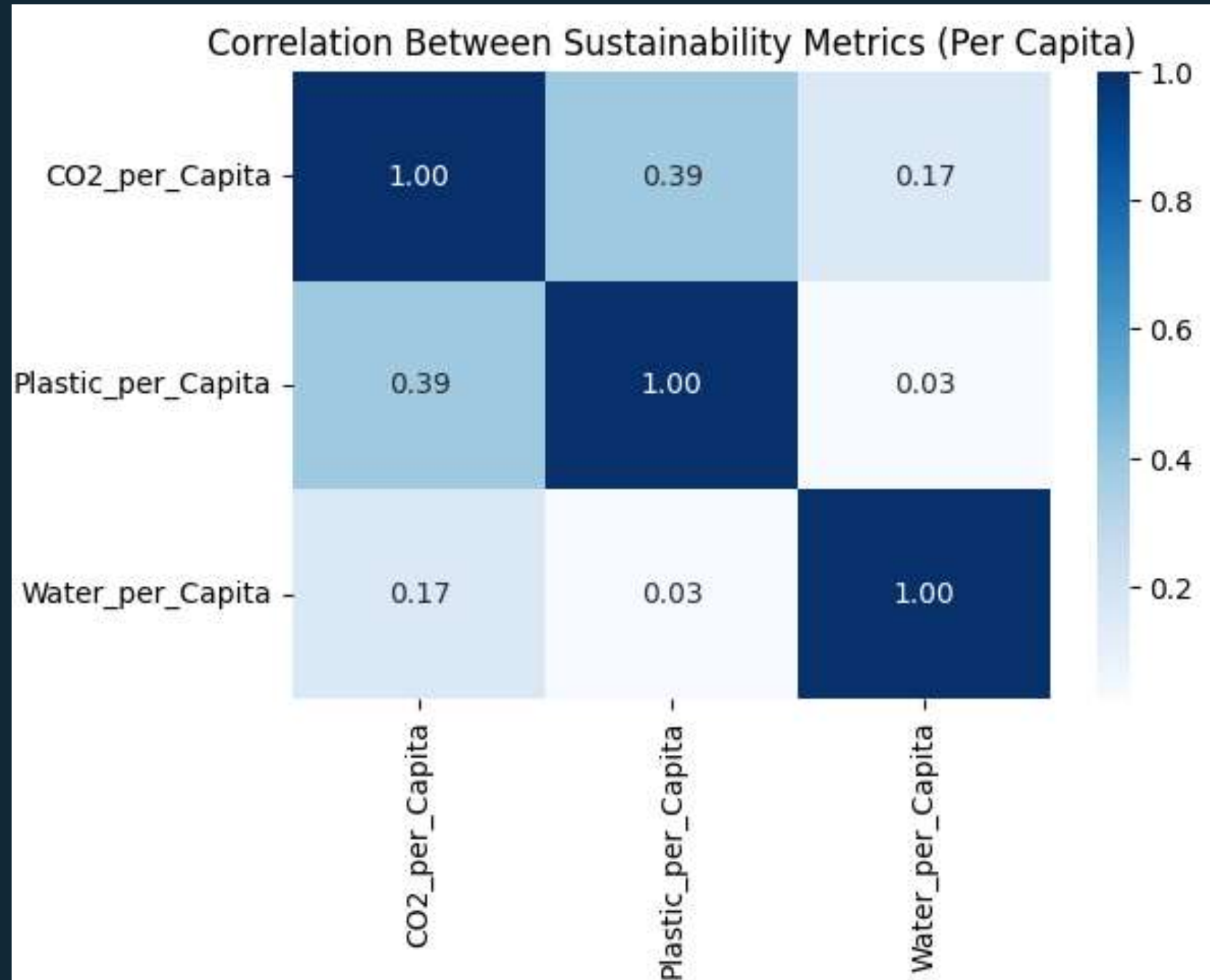
CO₂ emissions, water consumption, plastic waste metrics over years and countries.

Approach

Cleaned and aligned data; compared sustainability trends to consumer metrics.



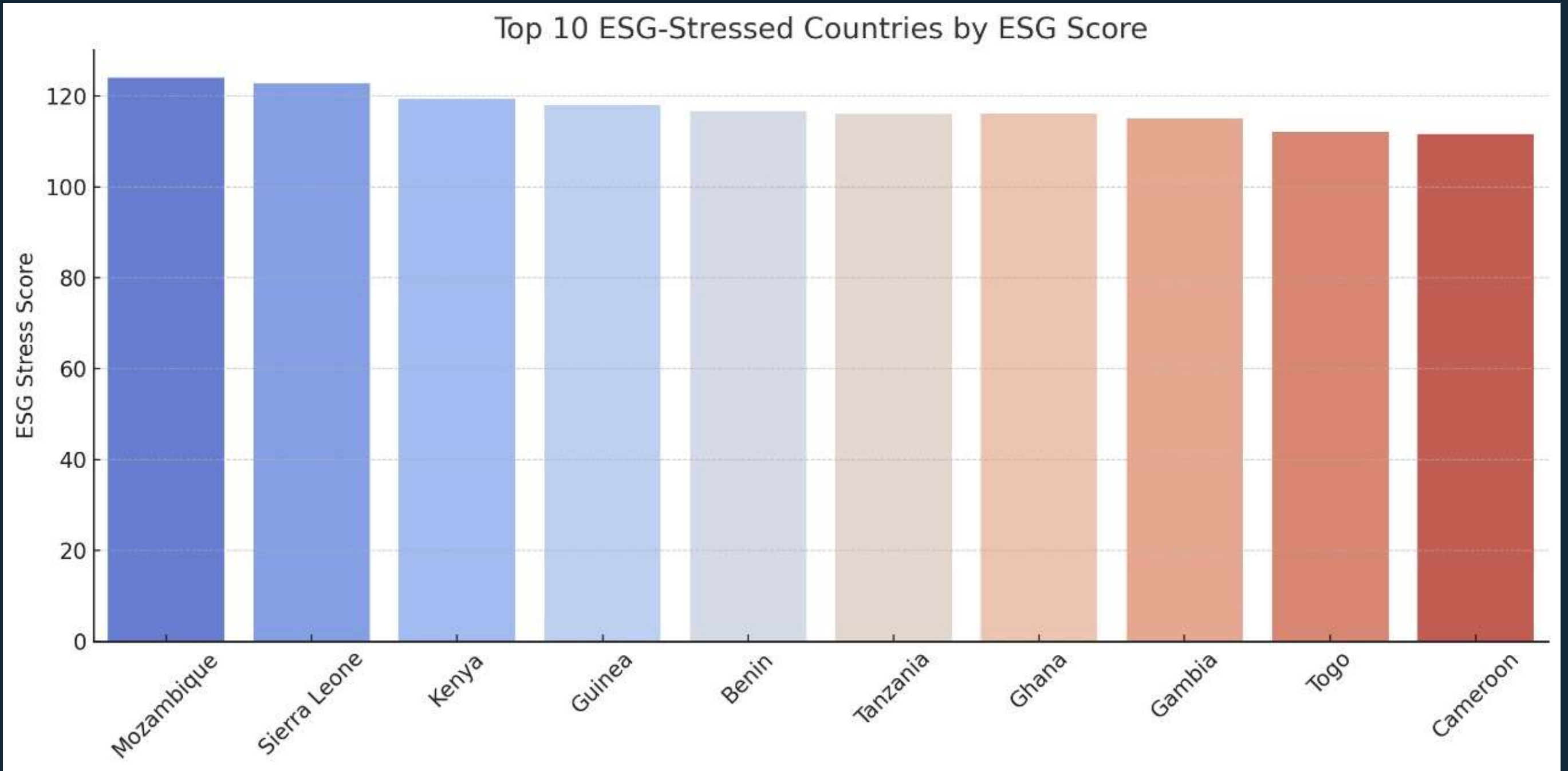
ESG Trends & Metrics



Energy Sensitivity



Bar chart of top ESG-stressed countries



Product strategy mapping table

Country	Stress Type	Recommended Product	Suggested Brands
Mozambique	Plastic	Reusable Diapers / Low-Packaging Products	Charlie Banana, Oral-B Eco, Pampers Pure
Sierra Leone	CO2	Cold-wash Detergents / Low-energy Products	Ariel, Tide
Kenya	Plastic	Reusable Diapers / Low-Packaging Products	Charlie Banana, Oral-B Eco, Pampers Pure
Guinea	Plastic	Reusable Diapers / Low-Packaging Products	Charlie Banana, Oral-B Eco, Pampers Pure
Benin	Water	Dry Shampoo / Low-Water Hygiene / Wipes	Head & Shoulders, Always, Swiffer
Tanzania	Plastic	Reusable Diapers / Low-Packaging Products	Charlie Banana, Oral-B Eco, Pampers Pure
Ghana	Water	Dry Shampoo / Low-Water Hygiene / Wipes	Head & Shoulders, Always, Swiffer
Gambia	CO2	Cold-wash Detergents / Low-energy Products	Ariel, Tide
Togo	Water	Dry Shampoo / Low-Water Hygiene / Wipes	Head & Shoulders, Always, Swiffer
Cameroon	Water	Dry Shampoo / Low-Water Hygiene / Wipes	Head & Shoulders, Always, Swiffer

Hypothesis 2: Conclusion

Findings

ESG improvements show no negative consumer effects; potentially positive.

Conclusion

Supports hypothesis: ESG strategy is neutral or enhances consumer experience.

Hypothesis 3: ESG Data Gaps

Claim

Insufficient data to recommend ESG focus areas by product or region.

Significance

Accurate targeting requires granular, region-specific ESG data.





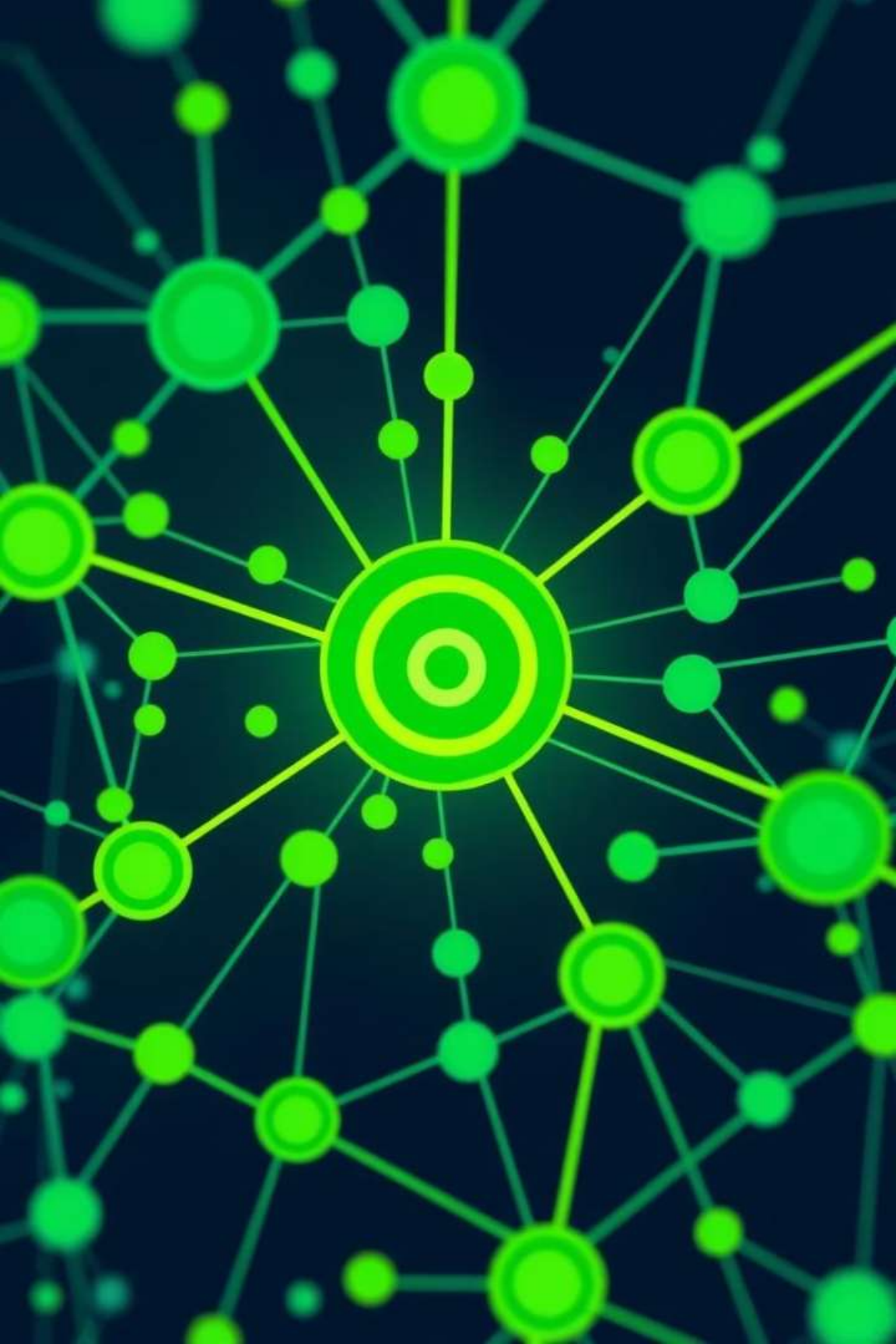
Hypothesis 3: Data Analysis

Analysis

Reviewed ESG data for regional, temporal, and product relevance gaps.

Findings

Most data lacks product-region granularity; highly aggregated overall.



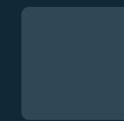
Hypothesis 3

Conclusion: Need for Granular ESG Data



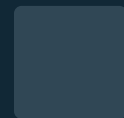
Generalized ESG Data

Lacks precision for strategic targeting and actionable insights.



Hypothesis Confirmed

More granular, product-level, and localized ESG metrics are essential.



Action Recommended

Invest in enhanced ESG data collection for refined strategy formulation.

Final Recommendations for P&G Stakeholders

ESG Integration

Continue without consumer impact, ensuring brand alignment.

Stock Resilience Focus

Emphasize product hygiene and stability during disruptions.

Data Granularity

Enhance ESG metrics to unlock precise 'where to play' insights.

Real-time Feedback

Implement product-specific feedback mechanisms for agility.



THANKS FOR YOUR ATTENTION !