Thesis: Statistical Analysis and Interpretation Guide

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# Goal of Analysis:

Prove or disprove established hypotheses and enable data driven answer of research questions.

RQ1: Does ESG performance financially “pay-off” in the consumer goods industry?

RQ2: Which factor(s) (if any) have the highest impact on consumer goods companies financial performance?

H1: ESG performers have better financial performance in the long run.

H2: Environmental performance has a high correlation with financial performance

H3: Impact of ESG criteria on financial performance is highly different amongst the sub- industries of the consumer goods industry

# How and What

Set up Model that will help to answer the research questions and shine light on hypothesis.

The companies could be clustered in groups of e.g. Very Low ESG Score - Low – Medium – High – Very High ESG Score.

They should also be clustered by peer groups (e.g. Industry Group / Industry Name / etc.) and analysed within after the initial overall analysis of all companies. 3 different clusters will suffice.

Also e.g. cluster the independent variables and then check them on correlation/causality with my dependent (financial performance) – while maybe focusing on specific high impact dimensions of sustainability.

# Important constant & categorical variables:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Identifier (RIC) | Company Name | | | Business Description | | Date of Incorporation | | | Ticker Symbol | Trading Symbol | | |
| GICS Sector Name | | | GICS Industry Group Name | | | | | GICS Industry Name | | | | GICS Sub-Industry Name | |
| TRBC Industry Group Name | | | | | TRBC Economic Sector Name | | TRBC Business Sector Name | | | |
| Country of Headquarters | | Fiscal Year End Date | | | | | |

# Other Important to be accounted for:

Total Employees (Growth yoy and over 10y period) – also single 1 correlation btw. Revenues and Employee growth to later compare it the degree of correlation btw ESG variables and financials.

# FINANCIAL Variables to be tested with (~11):

Total Revenue + ( Growth Year on Year and over 10 year period)

EBIT + ( Growth Year on Year and over 10 year period)

Market Cap + (( Growth Year on Year and over 10 year period))

Profit Margin + ( Growth Year on Year and over 10 year period)

Cost of Revenue + ( Growth Year on Year and over 10 year period)

Price / Earnings + ( Growth Year on Year and over 10 year period)

ROE + (( Growth Year on Year and over 10 year period)

ROA + ( Growth Year on Year and over 10 year period)

ROIC + (( Growth Year on Year and over 10 year period)

Cash Flow + ( Growth Year on Year and over 10 year period)

EPS (( Growth Year on Year and over 10 year period)

some of the values are already available some have to be quickly computed.

# ESG Variables to be tested with: (~35)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Environment Pillar Score In the last 10 FY | Social Pillar Score In the last 10 FY | | Governance Pillar Score In the last 10 FY | Resource Use Score In the last 10 FY | | Emissions Score In the last 10 FY | Environmental Innovation Score In the last 10 FY |
|  |  | |  |  | |  |  |
| Workforce Score In the last 10 FY | Human Rights Score In the last 10 FY | | Community Score In the last 10 FY | Product Responsibility Score In the last 10 FY | | Management Score In the last 10 FY | Shareholders Score In the last 10 FY |
|  |  | |  |  | |  |  |
| CSR Strategy Score In the last 10 FY | | ESG Controversies Score In the last 10 FY | | | | | | | CO2 Equivalent Emissions Total In the last 10 FY |
| ISO 14000 or EMS In the last 10 FY | | | | | EMS Certified Percent In the last 10 FY | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Take-back and Recycling Initiatives In the last 10 FY | Health & Safety Policy In the last 10 FY | | Supplier ESG training In the last 10 FY | Product Responsibility Monitoring In the last 10 FY | | | Quality Mgt Systems In the last 10 FY | | ISO 9000 In the last 10 FY | Six Sigma and Quality Mgt Systems In the last 10 FY | |
| Take-back and Recycling Initiatives In the last 10 FY | | Health & Safety Policy In the last 10 FY | | | Supplier ESG training In the last 10 FY | | | Product Responsibility Monitoring In the last 10 FY | | | Quality Mgt Systems In the last 10 FY | |
| ISO 9000 In the last 10 FY | | | | | | Six Sigma and Quality Mgt Systems In the last 10 FY | | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Board Gender Diversity, Percent In the last 10 FY | Average Board Tenure In the last 10 FY | CEO Compensation Link to TSR In the last 10 FY | CSR Sustainability Committee In the last 10 FY | CSR Sustainability Reporting In the last 10 FY |

ESG Reporting Scope  
In the last 10 FY

Some variable definitions:

1. Constant
2. Categorical / Attribute Variables
3. Grouping Variable
4. Confouding Variables
5. Control Variables
6. Dependent Variables
7. Lurking Variable
8. Quantitative Variables
9. Binary Variables
10. Mediating Variable
11. Predictor Variable