The Effect of Democracy, Development, Religion and Science on Animal Welfare

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ANIMALS R US

There is NO Excuse for Animal Abuse: Safeguard Animal Welfare Across the World

By: Sydney Richardson
“The greatness of a nation and its moral progress can be judged by the way its animals are treated.”

-Ghandi
Road Map for Understanding the Topic

- **Choose Countries**
  - United States
  - Spain
  - New Zealand
  - India
  - Sweden

- **Research Laws Governing Animal Welfare**

- **Animal Welfare 🐦 Animal Rights**

- **Determine Correlation Coefficient (r)**

<table>
<thead>
<tr>
<th>r value</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>Perfect negative</td>
</tr>
<tr>
<td>-0.7</td>
<td>Strong negative</td>
</tr>
<tr>
<td>-0.5</td>
<td>Moderate negative</td>
</tr>
<tr>
<td>-0.3</td>
<td>Weak negative</td>
</tr>
<tr>
<td>0</td>
<td>No linear</td>
</tr>
<tr>
<td>0.3</td>
<td>Weak positive</td>
</tr>
<tr>
<td>0.5</td>
<td>Moderate positive</td>
</tr>
<tr>
<td>0.7</td>
<td>Strong positive</td>
</tr>
<tr>
<td>1</td>
<td>Perfect positive</td>
</tr>
</tbody>
</table>
# The Animal Protection Index (API)

Ranking of 5 Countries in 5 Categories with Overall API grade.

<table>
<thead>
<tr>
<th>Country</th>
<th>Recognizing Animal Protection</th>
<th>Governance Structures and Systems</th>
<th>Animal Welfare Standards</th>
<th>Providing Humane Education</th>
<th>Promoting Communication and Awareness</th>
<th>Overall Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>91.70</td>
<td>95</td>
<td>85</td>
<td>65</td>
<td>95</td>
<td>95 (A)</td>
</tr>
<tr>
<td>Sweden</td>
<td>89.40</td>
<td>85</td>
<td>78.30</td>
<td>65</td>
<td>75</td>
<td>85 (B)</td>
</tr>
<tr>
<td>Spain</td>
<td>73.90</td>
<td>85</td>
<td>71.70</td>
<td>65</td>
<td>75</td>
<td>75 (C)</td>
</tr>
<tr>
<td>India</td>
<td>76.10</td>
<td>85</td>
<td>65</td>
<td>65</td>
<td>85</td>
<td>75 (C)</td>
</tr>
<tr>
<td>USA</td>
<td>70.60</td>
<td>85</td>
<td>71.70</td>
<td>65</td>
<td>85</td>
<td>65 (D)</td>
</tr>
</tbody>
</table>
Research Method: Measuring the Variables

- Animal Protection Index (API) as the Dependent Variable

- Independent Variables:
  - Democracy
    - Freedom House (0=least free, 100=most free)
  - Development
    - GDP/Capita - CIA World Factbook (Per Capita GDP as a Percentage of Global Per Capita GDP)
    - HDI - Human Development Index (0= least developed, 1.0=most developed)
  - Religion
    - Non Religion
    - Hinduism
    - Christianity
    - Post Materialism
  - Science
    - Citable Documents (Cited Documents as a Percentage of total documents published by the Country)
    - H-Index – Hirsh Index (SCImago Journal)

- Comparison using Pearson Analysis to determine the Coefficient of Correlation
Hypotheses

- **Democracy**
  - More Free $\rightarrow$ Higher API Score

- **Development**
  - More Developed $\rightarrow$ Higher API Score

- **Religion**
  - Predominantly Non-Religious $\rightarrow$ Higher API Score
  - High % of Post-Materialism $\rightarrow$ Higher API Score
  - Predominantly Hindu Countries $\rightarrow$ Higher API Score
  - Predominantly Christian Countries $\rightarrow$ Lower API Score

- **Science**
  - Higher H-Index $\rightarrow$ Higher API Score
  - More Cited Documents $\rightarrow$ Higher API Score
Positive Correlation of API v. Democracy

The Animal Protection Index

Correlation Coefficient (r) = 0.65

API vs Democracy

Democracy (%) vs The Animal Protection Index
Correlation of API v. Development: None for HDI; None for GDP/Capita

**API vs Human Development Index (HDI)**

- **Correlation Coefficient** \((r) = 0.24\)

**API vs GDP/Capita**

- **Correlation Coefficient** \((r) = 0.17\)
Correlation of API vs Religion: Weak Positive for Post-Materialism; Strong Positive for Non-Religious.

**API vs Post-Materialist**
- Correlation Coefficient ($r$) = 0.36
- Countries: New Zealand, Sweden, United States, India, Spain

**API vs Non-Religious**
- Correlation Coefficient ($r$) = 0.71
- Countries: New Zealand, Sweden, Spain, India, United States
Correlation of API v. Religion: None for Hinduism; None for Christianity

**API vs Hinduism**
- Correlation Coefficient $(r) = -0.18$

**API vs Christianity**
- Correlation Coefficient $(r) = -0.07$
Correlation of API vs Science: None for Citable Documents; Strong Negative with H-Index

API vs Citable Documents

API vs H-Index

Correlation Coefficient (r) = -0.07

Correlation Coefficient (r) = -0.74
Reviewing the Results with Respect to API

- **Strong Positive Correlations**
  - % Non-Religious

- **Positive Correlation**
  - Democracy

- **Weak Positive Correlation**
  - Post-Materialism

- **Strong Negative Correlation**
  - H-Index

- **No Correlation**
  - HDI
  - Per Capita GDP
  - Hinduism
  - Christianity
  - Citable Documents
# Reviewing the Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis Category</th>
<th>Hypothesis</th>
<th>Hypothesis Correct?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democracy</td>
<td>More Free $\rightarrow$ Higher API Score</td>
<td>YES</td>
</tr>
<tr>
<td>Development</td>
<td>More Developed $\rightarrow$ Higher API Score</td>
<td>NO</td>
</tr>
<tr>
<td>Religion</td>
<td>High % of Post-Materialism $\rightarrow$ Higher API Score Predominantly Hindu Countries $\rightarrow$ Higher API Score Predominantly Christian Countries $\rightarrow$ Lower API Score Predominantly Non-Religious $\rightarrow$ Higher API Score</td>
<td>NO with respect to Post-Materialism, Hinduism, or Christianity YES with respect to Non-Religious</td>
</tr>
<tr>
<td>Science</td>
<td>Higher H-Index $\rightarrow$ Higher API Score More Cited Documents $\rightarrow$ Higher API Score</td>
<td>NO</td>
</tr>
</tbody>
</table>
Discussion

- Democracy (Positive) and Non-Religion (Strong Positive) have a significant relationship with the API
  - *Freedom to create independent organizations and demand action*
  - *Not tethered to certain ideologies*

- The larger the H-Index (Strong Negative), the lower the score on the API
  - *Science hinders Animal Welfare Advancement*
  - *More Rock stars of science means more science utilizing animals*
So what?

- The way we treat animals reflects on the way we treat other human beings
- Humans are part of the Kingdom Animalia and share many basic characteristics with other animals

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Rats</th>
<th>Pigs</th>
<th>Domestic Dogs</th>
<th>Boy (man)</th>
<th>Gorilla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
</tr>
<tr>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
</tr>
<tr>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
</tr>
<tr>
<td>Rodentia</td>
<td>Rattus</td>
<td>Sus</td>
<td>Canis</td>
<td>Homo</td>
<td>Gorilla</td>
</tr>
<tr>
<td>Artiodactyla</td>
<td>Sus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carnivora</td>
<td>C. lupus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primates</td>
<td>H. sapiens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primates</td>
<td>G. gorilla</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Acknowledgments

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QUESTIONS?
Bibliography:


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