Doing Good Online

An Investigation into the Characteristics and Motivations of Digital Volunteers

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Portsmouth Business School

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Outline

1. Crowdsourcing and Citizen Science Projects: Zooniverse
2. Research Background
3. Empirical Results
4. Concluding Remarks
Crowdsourcing and Citizen Science Projects: Zooniverse

www.zooniverse.org
Zooniverse: Galaxy Zoo

Welcome to Galaxy Zoo's view of the Universe. If you're here you should already have seen the Tutorial, but feel free to go and remind yourself. There's no need to agonise for too long over any one image, just make your best guess in each case.

Galaxy Ref: 587739849140338934

Choose the Galaxy Profile by clicking the buttons below:

- Elliptical Galaxy
- Spiral Galaxy
- Irregular Galaxy
- Star Formation
- Headings

Show Grid Overlay on the next Image
Aims & Objectives of Study

- To investigate participation in online volunteering projects

Three primary research questions:

1. Who volunteers for Zooniverse projects?
2. What are their motivations for participating?
3. How do these motivations relate to volunteer participation and retention?
Conceptual Framework

- Functional approach to human behaviour (smith et al., 1956; katz, 1960) assumes volunteers are motivated by a desire to satisfy various combinations of **social and psychological** goals:

- Motivational factors adopted and modified from the Volunteer Functions Inventory or **VFI** (Clary et al., 1996;1998) which identifies six main goals achieved by volunteering:
  - Values
  - Enhancement
  - Social
  - Protective
  - Understanding
  - Career

- Typically, ’other oriented’ motivations offer a better explanation for volunteering engagement and retention than ’self oriented’. 
Method

- Online survey conducted generated a representative sample of \( \sim 2000 \) worldwide Zooniverse users across five projects and reconciled with data on actual participation and retention.

- Use PCA to generate factor scores and use in regression analysis.

- **Participation:** classifications supplied to both 'home' and all Zooniverse projects, time spent contributing and a count of number of projects in which respondent has participated.

- **Retention:** number of sessions, number of unique days classifying, length of time spent 'actively' engaged.
The Long Tail

Top 10% of volunteers provide 80% of the total recorded classifications;
Top 5% provide 70% of total classifications

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>3</td>
</tr>
<tr>
<td>25%</td>
<td>6</td>
</tr>
<tr>
<td>50%</td>
<td>18</td>
</tr>
<tr>
<td>75%</td>
<td>46</td>
</tr>
<tr>
<td>90%</td>
<td>234</td>
</tr>
<tr>
<td>95%</td>
<td>631</td>
</tr>
<tr>
<td>99%</td>
<td>5179</td>
</tr>
</tbody>
</table>
Who volunteers for Zooniverse?

- 56% Male; 44% Female
- 87% White; 13% Non-White
- 67% City; 33% Rural
- Majority from US (39%) and UK (29%) with other major countries including Canada; Australia; France; Germany; Netherlands and Poland
Comparison vs US Population I
Comparison vs US Population II

![Bar chart showing comparison between Zooniverse users and US population by annual income (USD)].

- Zooniverse Users
- US Population
Comparison vs US Population III

![Bar chart showing comparison of educational attainment between Zooniverse users and US population. The chart indicates a higher proportion of users with higher educational attainment compared to the general US population.](image)
What motivates Zooniverse volunteers?

**Protective & Enhancement**

**Protective**: Escape from troubles, Feel less lonely, Feel less guilt

**Enhancement**: Increases self-esteem, Feel better about myself, Feel needed
What motivates Zooniverse volunteers?

**Understanding & Social**

**Understanding**: Learn through direct, hands-on experience of scientific research, gain a new perspective on scientific research, learn about science.

**Social**: Others with whom I am close place a high value on Zooniverse, my friends contribute to Zooniverse projects, people I know share an interest in Zooniverse projects.
What motivates Zooniverse volunteers?

**Career & Values**

**Career**: Helps make new contacts, Explore different career options, Helps to succeed in chosen profession

**Values**: Support a cause I consider to be important, Sciences receive adequate funding, All of society benefits from scientific research
## Modelling Participation

<table>
<thead>
<tr>
<th>Variable</th>
<th>(i) All Class.</th>
<th>(ii) Home Class.</th>
<th>(iii) Time</th>
<th>(iv) No. of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective &amp; Enhancement</td>
<td>0.099 (0.044)</td>
<td>**</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.073 (0.043)</td>
<td>*</td>
<td>0.102 (0.040)</td>
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<tr>
<td></td>
<td></td>
<td>**</td>
<td>**</td>
<td>0.065 (0.018)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.0119 (0.043)</td>
<td>** **</td>
<td>-0.049 (0.018)</td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td>-0.090 (0.042)</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.162 (0.043)</td>
<td>**</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.137 (0.042)</td>
<td>***</td>
<td>0.091 (0.018)</td>
</tr>
<tr>
<td>Career</td>
<td>-0.208 (0.041)</td>
<td>**</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.210 (0.040)</td>
<td>***</td>
<td>-0.031 (0.018)</td>
</tr>
<tr>
<td>Values</td>
<td>0.060 (0.033)</td>
<td>*</td>
<td>0.047 (0.030)</td>
<td>0.039 (0.013) **</td>
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</tbody>
</table>

**Controls for:** Account Duration, Project, Country, Gender, Age, Ethnicity, Marital Status, Income, Education, Constant
# Modelling Retention

<table>
<thead>
<tr>
<th>Variable</th>
<th>(v) Sessions</th>
<th></th>
<th>(vi) Days</th>
<th></th>
<th>(vii) Active Period</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective &amp; Enhancement</td>
<td>0.073 (0.030)</td>
<td>**</td>
<td>0.075 (0.028)</td>
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<td>0.059 (0.044)</td>
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<tr>
<td>Social</td>
<td>-0.079 (0.029)</td>
<td>** *</td>
<td>-0.070 (0.027)</td>
<td>** *</td>
<td>-0.096 (0.045)</td>
<td>**</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.125 (0.028)</td>
<td>** *</td>
<td>0.119 (0.026)</td>
<td>** *</td>
<td>0.106 (0.045)</td>
<td>**</td>
</tr>
<tr>
<td>Career</td>
<td>-0.133 (0.028)</td>
<td>** *</td>
<td>-0.124 (0.026)</td>
<td>** *</td>
<td>-0.157 (0.042)</td>
<td>** *</td>
</tr>
<tr>
<td>Values</td>
<td>0.053 (0.022)</td>
<td>**</td>
<td>0.046 (0.020)</td>
<td>**</td>
<td>0.074 (0.034)</td>
<td>**</td>
</tr>
</tbody>
</table>

**Controls for:** Account Duration, Project, Country, Gender, Age, Ethnicity, Marital Status, Income, Education, Constant
Summary of Findings

- Profile of Zooniverse volunteers surprisingly close to the distribution of the whole US population
  - Comparatively affluent and extremely well-educated
- Dominant motivations appears to be 'Understanding' and 'Values'. Relatively low motivations of 'Social' and 'Career'
- VFI motivation factor scores do a better job of modelling participation and retention than other socio-demographic factors
  - 'Other-oriented' motivations dominate 'self-oriented' motivations
”What is the essence of life? 
To serve others and to do good.”

- Aristotle (384-322 BC)

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