

# How monetary incentives potentially improve the recruitment of participants in citizen science: Results from a survey in Germany

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The success of citizen science projects often relies on the participation of a large number of participants to collect sufficient amount of data that can be processed later by scientists. While it is known that participation in citizen science is voluntary and typically is based on the participants' intrinsic motivations, other aspects such as obstacles and extrinsic motivations, with monetary incentive as an example, have not been studied adequately yet. Furthermore, it is estimated that only a fraction of the population has actively involved in citizen science. Therefore, based on some initial success stories of deploying monetary incentive in citizen science, we believe that this type of incentive could be used to improve the recruitment of potential participants in citizen science projects and sustain the participation of citizen scientists. In the literature, several incentive algorithms have been proposed to fairly and efficiently distribute a project budget to the participants. However, the real monetary expectation of the general public has not been considered thoroughly in the design and simulation of these algorithms.

Consequently, we conduct a survey on the intrinsic motivations and monetary expectations for citizen science among the public in Germany. Through five sample projects that cover various domains of science, 230 adults who mostly have not taken part in citizen science earlier have expressed their intrinsic motivations and desired monetary rewards for their future participation in these projects. On one hand it was found that their future participation is motivated by contribution to science, fun element of the projects, their personal interests and new knowledge. On the other hand, a majority of the respondents would like to receive certain amount of rewards.

The results of this study can be beneficial to various stakeholders. First, algorithm designers can use the respondents' desired amount of rewards to improve their incentive mechanisms. Second, project organizers can effectively communicate their citizen science projects to the public by stressing the project attributes relevant to the public's motivations. Finally, by combining existing theoretical algorithms and the empirical expectations from the general public, the feasibility of deploying monetary incentive in citizen science can be shown.