

MOTIVATING CITIZEN SCIENCE PROJECTS

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> BACKGROUND

Why is someone motivated to do Citizen Science? Why is someone motivated to do anything? The self-determination theory (for a review [1]) offers answers: People are motivated to do activities that provide them with experiences of competence, autonomy, and relatedness. Hence, it is proposed: Citizen Scientists are motivated to do projects that allow for such experiences and are intrinsically motivated to take part in these.

> METHOD

Participants of a workshop reflected on their experiences with participatory projects such as Citizen Science projects and others for that they volunteered their spare time [2]. They were asked to identify an outstandingly good project and another one that they didn't enjoy. A good project was described by someone who told about their cumbersome but very enjoyable work for the German "Mückenatlas" (mosquito atlas). She was very proud to be part of the project and rated it as very good. An example of a bad experience was described by someone who took part in a survey and was unpleasantly surprised about the monotony and the length of the task.

The projects, good and bad, were rated in terms of different dimensions:

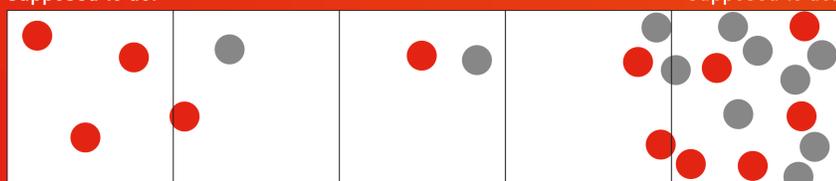
- > Clarity: It was (not) clear what I was supposed to do.
- > Competence: I felt (in-) competent.
- > Relatedness: I felt (not) appreciated.
- > Autonomy: I was given (no) choice.

Good projects were represented by a grey dot, bad projects by a red dot on each of the dimensions. Each dot was given a number on a 5-point-scale from -2 (It was not clear ...) to +2 (It was clear ...). Thereby a mean could be calculated for each type of project and each dimension.

CLARITY

It was not clear what I was supposed to do.

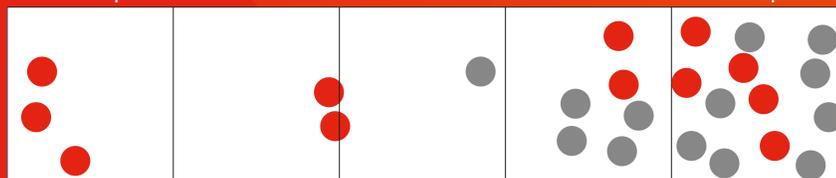
It was clear what I was supposed to do.



COMPETENCE

I felt incompetent.

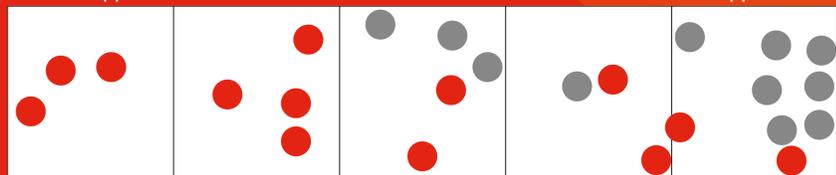
I felt competent.



RELATEDNESS

I felt not appreciated.

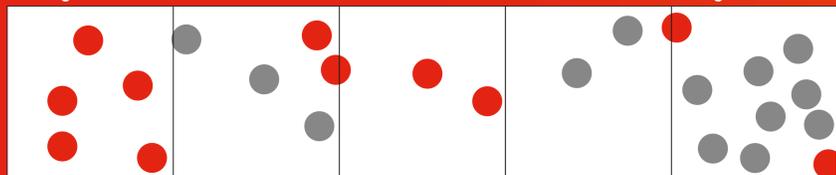
I felt appreciated.



AUTONOMY

I was given no choice.

I was given choice.



> RESULTS

Results indicate that good projects are clear on what they want from the participant (mean = 1.45). But so are bad ones (mean = 0.42). Good projects lead to experiences of competence (mean = 1.54) and relatedness (mean = 1.30). But while every good project took care of these factors, some bad projects did too.

Projects that provide experiences of competence, relatedness, and autonomy were generally rated better by participants. There were no good projects that did not provide experiences of competence (min = 0). There were none that did not provide experiences of relatedness (min = 0).

In good projects the majority of participants felt that they had at least some choices and could act autonomously (median = 2). In bad projects the majority felt little choice (median = -0.5). The largest difference of means between good and bad projects was found on this aspect of autonomy (= 1.88).

Dimension	Project experience	N	Mean	Difference of Means	Median	Min	Max
Clarity	good	11	1.45	1.03	2	-1	2
	bad	12	0.42		1	-2	2
Competence	good	13	1.54	1.21	2	0	2
	bad	12	0.33		1	-2	2
Relatedness	good	10	1.33	1.61	2	0	2
	bad	13	-0.31		-0.5	-2	2
Autonomy	good	13	1.15	1.88	2	-1	2
	bad	11	-0.73		-1	-2	2

> DISCUSSION

The results highlight the importance of different psychological aspects for motivating Citizen Scientist. Projects should make sure that they are clear on what they expect from the participants. But even more importantly: they should aim to allow their Citizen Scientists experiences of competence, relatedness, and autonomy. The most important of the psychological aspects seems to be autonomy. This aspect could easily separate the good from the bad projects.

It may be that allowing for experiences of choice and autonomy needs more consideration when planning or readjusting motivating Citizen Science projects.

> REFERENCES

- [1] Ryan, R. M., & Deci, E. L. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness.
- [2] Hille, K. (2017, September). The good, the bad, and the ugly - Erkenntnisse aus der Partizipationspraxis. Workshop presented at the Forum Citizen Science, Berlin.