

MASTER'S THESIS

Keeping participants engaged in citizen science projects

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Keeping participants engaged in citizen science projects

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Abstract

Citizen science projects heavily rely on motivated individuals to bring projects to a success. However, it remains a challenge to motivate and keep participants engaged. This research investigates why participants stay engaged to a project for longer periods.

In the literature, recent quantitative studies have created certain participant profiles which mainly focus on time spent and activities completed. In this qualitative research, where participants within the citizen science project 'Historical Database Suriname & Curaçao' are interviewed.

The research found that a deeply rooted motivation, such as altruism, is the driving force behind why participants stay engaged in citizen science projects. Furthermore, autonomy and an engaged leadership team helps to sustain the engagement.

Practitioners should help participants who are dealing with emotionally difficult tasks to support them. Mechanisms should be put in place to allow for even more flexible tasks improving autonomy even more. Future research should focus on project leadership engagement and to what extent this influences the participants' engagement and whether the findings of this research can be generalized to other contexts.

Key concepts

Citizen science, crowdsourcing, intrinsic motivation, extrinsic motivation, sustained engagement, project awareness, qualitative research

Summary

Certain research requires a vast amount of data which, aside from the financial aspect, is extremely time and energy consuming. Crowd sourcing, involving the crowd to fulfil tasks, can be applied to scientific research to fill this gap. However, research projects depending on the crowd face challenges since participants' engagement drop over time which could lead to projects not reaching their goals within time.

Quantitative studies have focused on identifying engagement patterns based on activity data, but critically fails to explain why participants demonstrate which pattern of engagement. Initial motivation is what draws participants to projects whereas engagement is what makes them stay. Therefore, the current research aims to answer the question 'Why do participants stay engaged in citizen science projects?'

Through qualitative research, a case study was conducted using the citizen science project 'Historical Database Suriname & Curaçao'. Within the project participants contribute through transcribing old (written) documents from slave registers, among other sources, into a digital format. This data is meant for future research on slave history and to publish the database online so families can freely investigate their family trees.

Participants who had contributed to the project were invited to take part in the interviews. Spread across five research students, a total of 20 interviews were conducted. These interviews followed a semi-structured approach, using an interview guide which was based off an interview guide of Phillips, Ballard, Lewenstein, and Bonney (2019). The interviews were transcribed and coded using the Grounded Theory method which involves categorizing codes during an iterative process to reach for explanations.

This research found that participants stay engaged through deeply rooted motivations, such as altruism. Although the tasks may lack excitement, the stories behind the tasks or the knowledge participants acquire keep them interested in the topic. Furthermore, participants value the autonomy to contribute on their pace, whenever and whatever they want. The project leadership also has a crucial role in keeping participants engaged through interactions on the forums, feedback and sharing project progression.

Project leadership should consider the emotional impact of tasks imposed on the participants and try to better inform participants with disclaimers and perhaps training. Participants contribute when they want and how much they want. To meet and go beyond these expectations, is to split the larger tasks into smaller ones making it even more flexible.

Future research should investigate the relationship between project leadership engagement and participant engagement, as well as identifying barriers which might prevent participants using the potential of the forum to build social connections. Additionally, research should investigate whether the results can be generalized to other contexts.

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1. Introduction

1.1. Background

Research is a time-consuming and expensive process (Gardiner et al., 2012). To respond to particular research questions, representative data is required. However, for certain research it is nearly impossible for researchers to gather a significant amount of data by themselves. Incorporating crowd sourcing into research projects' data-collection phases is one way to overcome this challenge. In addition to data collection, the crowd can be heavily involved in classification, data analysis (Bonney et al., 2009) and transcription (Eveleigh, Jennett, Blandford, Brohan, & Cox, 2014) in projects.

1.2. Exploration

Crowd sourcing is defined as an online activity where one party – the crowd sourcer – proposes a certain task that needs to be fulfilled to a group of individuals – the crowd. These tasks are to be taken on a voluntary basis. A sense of satisfaction is felt by the individual who completes the task. The crowd sourcer can then use the crowd's contributions for its intended purpose (Estellés-Arolas & González-Ladrón-de-Guevara, 2012). When applying crowd sourcing in scientific research, the literature coins the term 'crowd science' and is in essence a form of scientific research in which participants in a project contribute to a research project under guidance of an expert or scientist on the matter (Franzoni & Sauermann, 2014).

In research, crowd science and citizen science are used interchangeably due to fact that there's a large overlap between the two. The main characteristic of both citizen science and crowd science projects is that they rely entirely on voluntary contributions and are in pursuit of a specific goal (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Meysman et al., 2022; Nov, Arazy, & Anderson, 2011; Van Brussel & Huyse, 2019). The nature of these goals can be either scientific, e.g. knowledge production or non-scientific such as raising awareness and influencing policy (Franzoni, Poetz, & Sauermann, 2021).

The success of projects heavily depends on the contributions made by participants, making engagement a crucial factor in recruiting and retaining participants over time. As such, engagement in projects can be defined as "emotional, behavioral, cognitive, and social experiences that initiate and sustain lifelong learning and that are largely influenced by motivational factors" (Phillips et al., 2019, p. 684).

1.3. Problem Statement

Citizen science projects heavily depend upon voluntary contributions; it would not be possible to reach a project's goal without them (Eveleigh et al., 2014). However, it remains a challenge to keep participants engaged and motivated throughout the different phases of a project (Parrick & Chapman, 2020). The number of projects is growing daily while the pool of volunteers is finite. Furthermore, a small percentage of participants contribute the most, while the majority contributes the least (Franzoni & Sauermann, 2014). It takes a lot of effort to effectively build and sustain a crowd (Parrick & Chapman, 2020; Scheliga, Friesike, Puschmann, & Fecher, 2018).

Participants are heterogeneous in nature (Aitamurto, Landemore, & Saldivar Galli, 2017) but researchers have identified a way of categorizing participants in different engagement profiles ranging from hardworking to moderate based on quantitative data such as the number and the quality of the contributions, time spent on the project, among other criteria (Ponciano & Brasileiro, 2014). As a result of identifying these engagement profiles, project leaders can adapt and personalize their engagement strategies per type of volunteer profile to make their contributions sustain over time. In addition, recruitment strategies can take into account the 'desired engagement profile' (Ponciano & Brasileiro, 2014, p. 11) to attract new volunteers which fit with the project.

Qualitative data, such as the motivational factors behind a participant's motivation in a project, including both intrinsic and extrinsic factors, are as relevant as quantitative data because the former aims to explain what's behind the numbers (Rutten, Minkman, & van der Sanden, 2017).

Motivation is the part of engagement that is responsible for that initial drive or attraction towards a project. Engagement is what makes participants stick to the projects for a longer period (Appleton, Christenson, Kim, & Reschly, 2006). Hence, engagement and motivation are crucial in bringing citizen science projects to a good end (Scheliga et al., 2018). Motivation seems to be a driver for future engagement, and engagement a driver for motivation, resulting in a cyclic process. Vice versa, decreased motivation can lead to reduced engagement (Martin, Ginns, & Papworth, 2017). However, it remains unclear why motivation leads to engagement and even more, what makes the motivation and engagement sustainable.

In this research, participants in a citizen science project will be interviewed to learn why they initially were motivated, what keeps them motivated on a day-to-day basis and more importantly, what keeps them engaged over time and their experiences within the project. Scientists and citizen science practitioners could benefit from this research on understanding engagement and the reasons behind it, by improving project-participant matching or adjusting projects.

1.4. Assignment

To maintain participants' engagement and motivation throughout the entire duration of a project, the aim of this research is to develop a better understanding of what motivates and engages them in citizen science projects.

The main research question can help us get closer to achieving this goal:

Why do participants stay engaged in citizen science projects?

Three sub questions are proposed in addition to the main research question:

- What draws participants to citizen science projects?
- How do participants in citizen science projects demonstrate engagement?
- How does engagement evolve over time?

The literature review will be structured around these sub questions in the following chapter. The results of the literature review may provide a tentative response to the sub questions and provide direction for the empirical research to address the main research question.

1.5. Motivation and relevance

Citizen science and research on the topic has gained increased interest over the last decade (Bonney et al., 2009). This paper contributes to further build upon the knowledge on engagement patterns and motivation in citizen science projects (Bruckermann et al., 2022) by obtaining responses from participants during interviews regarding their motives for participating in projects, how they express engagement and how it evolves over time. This research meets the call for more qualitative research on motivation factors in crowd sourcing projects and might help establish generalizability of previous research (Aitamurto et al., 2017; Malinen, 2015). These contributions might aid researchers who are looking for explanations behind motivation, engagement and more importantly, what keeps participants engaged to citizen science projects.

Increased understanding in motivation and engagement could be of great importance to project leaders, project initiators and platform developers in the field of citizen science and crowd science, to adapt projects in such way they attract and sustain engaged and motivated participants to achieve the projects' goals (Aitamurto et al., 2017).

1.6. Approach

Chapter two discusses the Theoretical Framework and formulates a preliminary answer to the research question(s) in the current study. Chapter three describes the methods used in this research project. In chapter four the results are presented, to end with chapter five in which the discussion, conclusions and recommendations will be addressed.

2. Theoretical framework

2.1. Research approach

The supervisor provided compulsory literature as a starting point since this study is a part of a larger research project that examines participant profiles in a citizen science project. Three supplementary techniques were used to gather more relevant scientific literature. The first technique was 'Building Blocks', in which search terms were defined from key words, such as citizen science or engagement, and consequently finding synonyms for those words to broaden the search query. The second technique, 'backward snowballing', involved scanning the references made by the scientific literature. Due to the nature of this technique, 'older' scientific literature is found. Therefore, a third technique is used to make sure recent literature is involved in the literature search as well. 'Forward snowballing' involves taking a scientific paper and checking which other papers have cited that article, thus always resulting in search results which are more recent than that paper.

2.2. Implementation

The online Open University library¹ was used for most of the literature study; it allows for the use of Boolean operators and the addition of applying additional criteria to the results. Only peer-reviewed scientific literature, for instance, was one of these criteria since literature that has been reviewed by subject matter experts are likely to be of higher quality. Additionally, no period limit was set since the terms "citizen science" and "crowd science" have tended to appear more frequently since the turn of the century. No language restriction was applied; however, all selected literature was written in English. The forward snowballing approach was used with Google Scholar² because of its straightforward user interface and easily accessible reference list. The appendix Literature logbook contains a complete list of search terms, articles used for backward snowballing and for forward snowballing.

Then, the titles and abstracts for each search result were read, and those that were related to citizen science, crowd science, motivations, and engagement were noted down as these were both relevant and interesting for the current research. Following preliminary filtering, full texts were read, and a spreadsheet was created to record highlights of the article, the topics, issues or challenges it addresses, the article's relevance, what its findings were, the contribution, limitations, and suggestions for further research. After reading entire texts, it was necessary to remove some literature that deemed no longer relevant for this study. Some texts were excluded when there was no freely accessible version available.

¹ The Open University library can be accessed through <https://bibliotheek.ou.nl/> (authentication is required)

² Google Scholar can be accessed through <https://scholar.google.com/>.

2.3. Results and conclusions

2.3.1. What draws participants to citizen science projects?

Being drawn to a citizen science project refers to feeling some kind of desire or spark towards a project. This could be driven by a variety of motivations, such as interest in the topic, the type of project or it could just be that they join because of a (close) relative that is already working on the project (Aristeidou, Scanlon, & Sharples, 2015). Unquestionable, the first condition for people to feel that desire towards a project is being aware such project exist. Therefore, recruitment strategies are developed to target and attract the specific audience that might be required or appropriate for the project, so they might eventually be convinced to start participating in a project (Bonney et al., 2009).

The main reason why people join a project is due to their intrinsic interest in the topic (Aristeidou et al., 2015). Initial motivation can be influenced by various factors, such as the level of expertise someone has. People with less expertise regarding the topic are more likely to join a project because they know someone on the project, such as friends or a family member, while those with more expertise tend to join mainly because of their interest in the topic (Aristeidou et al., 2015). Other reasons why people join a project include wanting to help scientists, contribute to science, learn about science or even joining the community (Parrick & Chapman, 2020).

Initial motivation might however be highly dependent upon the goal(s) of the project. For example, the Curieuzeneuzen project had the goal to measure and map the air quality of the city of Antwerp. Here, intrinsic motivations, such as contributing to science or knowing the state of the air quality and extrinsic motivations, such as influencing policy or making a change to habits could play an important role (Van Brussel & Huyse, 2019). That influence could also be used to steer the outcomes in one way or another to get a personal advantage (Aitamurto et al., 2017), instead of contributing for its intended purpose.

But motivation alone is insufficient to draw individuals to citizen science projects. Although implementing a solid recruitment strategy is crucial, it is still difficult to do so within citizen science projects. Recruitment strategies are needed to build and harness groups of motivated participants (Scheliga et al., 2018). Attracting individuals who have never been involved in citizen science projects before is another challenge. Research suggests that most participants are attracted in joining a community through word-of-mouth (Aristeidou et al., 2015), and in addition project initiators may need to develop robust recruitment strategies to attract the right people. Also, project initiators can partner with specific organizations or schools to help spread awareness around the project (Bonney et al., 2009).

Other recruitment strategies target audiences who are already interested in a specific topic. Such as recruiting people to participate in forensic research by partnering with creators of true crime podcasts (Parrick & Chapman, 2020), or recruiting people for historical research projects by targeting an audience that has roots within the project it needs help with (van Galen, 2019), or utilizing both offline and online media campaigns targeted at environments or environmental issues (Kawabe, Ghilardi-Lopes, Turra, & Wyles, 2022; Van Brussel & Huyse, 2019).

2.3.2. How do participants in citizen science projects demonstrate engagement?

Motivation is the key ingredient that participants might need to start contributing to a project. At the same time, engagement in citizen science projects is demonstrated by being active and making recurring contributions to a project. Contributions can be seen as a broad concept and include both human computation tasks which directly contribute to the project's goals, such as collecting data or annotating, and social engagement activities which indirectly contribute to the project such as community building through being active on the forums (Ponciano & Brasileiro, 2014). The benefit of active contributions to the community is that it makes participants to stay longer on the project (Aristeidou et al., 2015), which in turn might lower attrition rate.

Engagement is expressed through pro-longed activity in the tasks for the project but is also shown in contributions on the forums. The degree in which participants are engaged tend to be measured quantitatively (Lehmann, Lalmas, Yom-Tov, & Dupret, 2012; Ponciano & Brasileiro, 2014). In a comparative research study, Ponciano and Brasileiro (2014) identified engagement profiles as a means to measure and demonstrate participants' engagement. The study analyzed two projects considering factors such as the relative activity duration, daily devoted time, variation in periodicity, and activity ratio to measure engagement levels. While a high activity ratio by itself may be favorable, it does not last over time. Therefore, the relative activity duration becomes more important when it comes to engagement over a longer period of time (Ponciano & Brasileiro, 2014). In addition, Aristeidou, Scanlon, and Sharples (2017) have built upon the engagement profiles to include a lurking ratio, which indicates to what extent participants are active on the platform compared to their active contributions.

Persistent participants might devote certain amount of their time over a longer period of time (Ponciano & Brasileiro, 2014), this desired engagement profile is crucial for a project's success. While it may seem not logical at first, dabblers, or participants who contribute once in a while but are persistent in that behavior might not seem the ideal candidates at first but since a large group of dabblers do have a greater impact, this group is as important for the sustainability of the project (Eveleigh et al., 2014).

Participants demonstrate optimal performance in completely voluntary crowdsourcing projects when they are having high intrinsic motivations and lower extrinsic motivation as these participants do not feel the need to be rewarded and as such can act autonomously in their contributions (Borst, 2010). In addition, Borst (2010) makes the case for giving out small rewards for contributions, as these tend to have a positive impact on participants' performance who have high intrinsic motivation and either low or high extrinsic motivation. These types of participants might be the key to sustain a project over time. In addition to the (monetary) reward, Cappa, Laut, Porfiri, and Giustiniano (2018) suggests that 'online acknowledgement rewards' (p. 27) are two methods of increasing both the quality of the contributions and the overall engagement that is expressed by the participants.

While measuring the activity of participants is one method of identifying engagement, it does not explain why participants show that type of engagement (Lehmann et al., 2012). Qualitative research aims to answer such 'why' questions to reach for an explanation.

2.3.3. How does engagement evolve over time?

User engagement is not a concept that is either black or white, therefore O'Brien and Toms (2008) have presented a model of engagement for users of digital technology. This model can be applied to citizen science projects since these tend to be hosted on an online platform. The authors state that the engagement process starts at a certain moment in time, then moves on to a stage where this is sustained engagement in which the intensity of engagement may vary and ends with disengagement. Because disengagement can be short-term, long-term or even permanent, re-engagement can kick in to 'restart' the cycle of engagement (O'Brien, Roll, Kampen, & Davoudi, 2022). Reasons for becoming initially engaged (e.g., interest in the topic) can greatly differ from reasons to stay engaged (e.g. desire to fulfil the project's goals) (Eveleigh et al., 2014). It might be possible that a user initiates the user engagement process several times during the completion of a task. Even when contributors stop contributing, doesn't mean that they are no longer engaged. This passive form of engagement (Eveleigh et al., 2014) is illustrated by contributors who express engagement just by reading e-mail updates, and in line with the user engagement model of O'Brien and Toms (2008), might re-engage at a later moment in time.

Engagement can change over time, for instance, it might drop for a variety of reasons, such as the non-usage of contributions or repetitive tasks, but sometimes it has nothing to do with the project (Eveleigh et al., 2014). Personal reasons, such as health issues or time constraints, may play a role why participants tend to participate less in projects and may explain why more contributions are made in the winter (Eveleigh et al., 2014).

Starting out, participants might seem like individuals performing several tasks. Over time, however, they grow as a part of the community. When a project kicks off, it might need some guidance of the project leader to engage the participants in the early stages (Aristeidou et al., 2015). Once participants start to feel they are a part of the community, they tend to engage each other as it motivates participants to contribute if they see others doing it and as such making the community self-sustainable. Subsequently, this tends to make participants stay for longer on the project (Aristeidou et al., 2015), which has the potential to overcome attrition (Parrick & Chapman, 2020).

2.4. Goal of the follow-up research

Engagement in citizen science projects is a multi-faceted concept that is not easy to grasp. It depends on the project, on the profile, the motivations and it can vary along those axes. A small group of contributors seem to be responsible for the majority of the contributions, whereas a larger group performs smaller amounts of contributions (Franzoni & Sauermann, 2014). The literature has made substantive effort to identify motivational factors but does not incorporate the sustainability of that motivation in their analysis. Feedback mechanisms, the type of task complexity and even the project's goals tend to play a role in the participant's motivations, are there mechanisms in place which re-enforce motivation? Participants demonstrate their engagement in varying levels through different cycles and even throughout various stages of the project. The current study aims to identify what makes participants boost or slow down their actions what makes them return to the projects for longer periods of time.

Therefore, in this study, these motivation and engagement topics will be analyzed within a citizen science project.

3. Methodology

3.1. Conceptual design

The answer to the research question ‘Why do participants stay engaged in citizen science projects?’ requires qualitative research since it aims at finding an explanation for the phenomenon in this study (Saunders, Thornhill, & Lewis, 2019). As a part of this research, a case study was conducted. In order to explain underlying reasons for sustained engagement and motivation in citizen science projects, a case study is a research method that involves performing an in-depth examination of a specific real-life situation (Saunders et al., 2019). One typical case will be chosen for this study’s examination in order to keep the scope of the research manageable (Saunders et al., 2019).

Semi-structured interviews were conducted with participants in a citizen science project to gain a deeper understanding of their motivations and engagement. Semi-structured interviews allow for a level of flexibility and at the same time in-depth exploration of the topic (Saunders et al., 2019). An interview guide was used to structure the interviews and included probing questions which allowed to delve deeper into the conversation.

3.2. Operational design

3.2.1. The case

The citizen science project – the case – that was focused on in this research is the project ‘Historical Database Suriname and Curaçao’. The aim of the project is to develop a historical database regarding the population of Suriname and Curaçao between 1830 and 1950.

Among others, this project is hosted on the platform ‘Het Volk’³. The platform houses a range of various research projects, in which participants can contribute using several methods. Depending on the type of project, certain input methods are enabled or even custom-built if necessary (Het Volk, 2022). Since the platform is open for the public, everyone can start contributing by registering on the platform.

The National Archives of Suriname and Curaçao provide various scanned documents, such as slave registers and marriage certificates, which are published on the project. Then, participants contribute through transcription of these written documents. In addition, participants can open discussions on the forum⁴ to receive help or to share findings regarding the documents that need transcription.

A challenge that similar projects face is the quality assurance (Scheliga et al., 2018). Therefore, to ensure the quality of the contributions, top transcribers are hand-picked by the project leader and given specific tasks to verify transcriptions of other contributors. There’s no public indication of which contributor has which privileges (personal communication, November 30, 2022).

The project leadership maintains the projects’ social media and sends updates to participants through newsletters⁵. Occasionally, online gatherings take place to discuss recent news or the project’s progress (personal communication, November 30, 2022).

³ <https://hetvolk.org/>

⁴ The forum is hosted on <https://hdsc.ning.com/>, the project is hosted on the platform <https://hetvolk.org/>.

⁵ An archive of the recently sent newsletters can be found on <https://us5.campaign-archive.com/home/?u=157f648f629c603fc5d9cb11f&id=3264f478e4>.

This case is suitable for the current study because it has been ongoing since several years and has an active community supporting the project. This indicates that this study can discover what this community drives. Recurring publications of historical documents make sure the platform stays active and contributions keep coming. It creates a specific dynamic in the project since new input could lead to reactivated motivation or even be a motivational factor to start working on the project. However, it remains a challenge for the project to retain participants and keep them motivated. In addition, the project leader mentioned that, in line with the literature (Benyei et al., 2020; Franzoni & Sauermann, 2014), that the majority of the work is done by a few (personal communication, November 30, 2022), making the project reliant on some individuals rather than a larger group.

3.2.2. Interviewees

In the project, participants are assigned either the role of contributor role or contributor/controller role. The controller role is assigned by the project leader to those participants who have a substantial track record on the project. Participants with the contributor role can transcribe documents and write on the forums, on the other hand, participants who also have the controller role can verify contributions that are done by other participants.

Both contributor participants and contributor/controller participants were eligible for interviews. Participants received an email of the project leader with an invitation to contribute to the interviews. In the end, the project leader submitted the contact information of all those who were interested to the supervisor, who subsequently distributed the contact information of five randomly selected participants for every research student. All participants received this invitation email, it was however expected that more active participants would be willing to participate in the interviews, opposed to those who have not contributed for a while.

To maximize participation rate, the sole requirement to be eligible to participate was previously having contributed to the project. It was irrelevant to be eligible to participate in the interviews whether you have made a lot of contributions or not, among other factors.

3.2.3. Interview guide

Each research student interviewed five participants. The development of an interview guide was essential so that the transcribed interviews could be used and analyzed by all the research students in the group, even though each research student may have their own point of view or approach.

Based on the interview guide of Phillips et al. (2019), each research student developed an interview guide which was then combined into a single interview guide that served purpose for all semi-structured interviews. This interview guide is available in the appendices so future researchers can use the guide as a starting point, just like this interview guide was based off of the guide of Phillips et al. (2019).

3.3. Data analysis

The semi-structured interviews took place through Microsoft Teams, which requires a stable internet connection and access to a microphone. Conducting interviews online has the benefit of having a greater reach, as the participants could be joining from all over the world. The interviews were conducted in Dutch, but the study's analysis was done in English.

The Open University provided a temporary Teams-account to the research students so that the interviews could easily be recorded and transcribed. Since the auto-transcription feature of Microsoft Teams is not bullet-proof, manual adjustments were necessary. Once the transcription has been conducted, the interviews were analyzed through ATLAS.ti version 22, which is software that is used for qualitative research purposes such as analyzing interviews.

In order to analyze the data, the Grounded Theory was used as a basis (Saunders et al., 2019). Utilizing Strauss and Corbin (1998)'s approach for coding, codes, or labels, were assigned to words and sentences in the interview transcription. Mainly 'in vivo' codes were defined, meaning these emerged from the data alongside 'a priori' codes which were created based on the interview questions. During the iterative coding process, categories were created to structure codes and to identify patterns between codes within the same category. These categories are described and supported by quotes from the interviews.

3.4. Methodological issues

3.4.1. Internal validity

Internal validity concerns to what extent the findings can be attributed to the methods used in this study (Saunders et al., 2019). Several threats to internal validity for the current study are described in the following paragraphs to provide transparency and to let the reader determine the validity of the study.

The leader of the project is also a researcher on the topic of citizen science and part of the larger research project this work is a part of. While this shouldn't necessarily be a problem, this could have an influence on decisions made by the project leader regarding communication or decisions made.

All participants in the project were contacted through the newsletter to inform them that research on citizen science was taking place. The newsletter included the question asking whether the participants were interested in participating in interviews as part of the study. However, because the research is investigating motivation and engagement, those with high levels of motivation naturally would be more interested in doing so, which could influence the results. To prevent this self-selection bias, the project leader should have selected a heterogenous group that was willing to be interviewed with various level of motivations. Since some participants might have stopped contributing to the project, the project leader should have utilized methods to involve that group of people too, as this also could have led to interesting and more diverse results.

In the beginning of 2023, before the interviews took place, a new batch of documents needed to be transcribed were published on the platform. As a lot of participants had been waiting for this input, these recent events could have influenced behavior, or the answers given in the interviews which can positively or negatively have an impact on the findings. However, the interview guide was tailored to include specific questions about these events, as these might have had an influence on motivation or engagement.

In research the 'why' question regarding certain engagement behavior has been criticized, as participants might not be that aware of their actions and why specifically they are doing the things they do (Wohn et al., as cited in Malinen, 2015). Due to the nature of this qualitative research, this could limit the results. However, extra caution will be given to the structure and questions of the interview to reach for a best-effort answer to the research question.

3.4.2. External validity

External validity is concerned to what extent the findings can be generalized to a different context (Saunders et al., 2019; Smaling, 2009). It is important however to make the distinction between statistical generalization and analytic generalization. Statistical generalization aims to take the findings for a specific sample and verify if those findings hold for the greater population (e.g., through surveys). However, a case cannot be seen as a sampling unit, and it would be unfeasible to handle cases in this way. In addition, the goal of case studies is not to reach for statistical generalization, but is aimed at analytical generalization, by conducting an in-depth empirical inquiry in order to confirm and further build upon the body of knowledge (Yin, 2017).

This indicates that while the findings of this study may be comparable to those from other humanities research projects, it is unlikely that they will be comparable to studies whose methods and project types are significantly different from those of the current study. However, to maximize transferability of the case findings to other ones, this research aims to develop a ‘thick description’ by providing which choices were made throughout the research, and why, fulfilling the receptive (communicative) generalizability to help the reader determine to what extent the case-to-case transfer is acceptable (Smaling, 2009).

3.4.3. Reliability

In general, reliability is concerned with the reproducibility of the research. Future researchers that follow the same steps should come to similar findings. However, within case studies, it is rather unlikely that these findings will be the same as each case is unique in its kind. Nonetheless, throughout this research paper, each step is described in full transparency as such that future researchers can validate if the steps taken can be considered as reliable (Yin, 2017). In addition, the coding results are made available in the appendices to ensure reliability. This chain of evidence gives the opportunity for researchers to validate each step this research has taken.

3.4.4. Ethical aspects

While it may come in handy that the project leader of the project is also a researcher, that might introduce a bias towards selection criteria for the participants needed to be interviewed.

Every interview with the participants was recorded but anonymously transcribed. To make sure that no personal information was recorded, the interview started after both interviewer and interviewee had presented themselves to avoid having personal information in the recording. Furthermore, since the transcription was done completely anonymous, there will be no possibility to trace back any answers to a given participant as the recording was permanently erased after transcription was complete. This common procedure ensures the privacy of the participants. While the coding is included in the appendices, the transcriptions are only accessible for the supervisor and the other research students so they could use them for their own analysis in future research. All interviewees gave an informed consent in which is clearly stated what the data will be used for. Participants could freely withdraw from taking part in the research.

Since this research was conducted under the supervision of the Open University, and thus falls under the Code of Conduct, brought forward by the Universities of The Netherlands, several points are brought to attention hereafter. First, a statement is made that all work is original and not copied. Second, personal data is used according to the regulations set forward by GDPR, for example interviews are anonymously transcribed and the recordings were deleted. Third, only tools provided by the supervisor were used throughout this research. Going from tools where to store the transcriptions (Surfdrive), as the tools used for analysis (ATLAS.ti).

4. Results

4.1. Motivation

The category *motivation* discusses both the intrinsic and extrinsic motivations why participants join and contribute to projects.

4.1.1. Intrinsic motivation

Intrinsic motivation is the internal drive for engaging in activities or the motivation that comes from within. Giving back to the community, or helping families find their family trees, is one of the more common reasons why participants contribute to projects: *“Look, I love history and stories and all those kinds of things. A slave register like these is of course very special, so the fact that you can investigate it and get a better picture and that you can work on it, and that people can continue searching for their relatives... yes, that’s what I found very special.”* (Interview 12, 17/03/2023).

Since the outcomes of the project will end up in a public register, one participant said that they use the findings to help families in constructing their family trees as one of their hobbies. However, they felt morally obligated to return the favor to the project: *“You can’t just use it for yourself, you must contribute as well. And that’s a boring task, but hey it needs to happen, so in a sense you contribute to it.”* (Interview 14, 11/04/2023).

The handwritten documents seem to ignite a spark with those interested in paleography which adds to the fun experience of puzzling: *“A lot more than images I have something for text. I like text. I like handwriting. I like puzzling”* (Interview 10, 18/03/2023).

Since the project is inherently linked to the slavery history of The Netherlands, another motivation is to better understand how The Netherlands behaved and contribute the very least back to Suriname as if it is their moral duty: *“I’m giving back to Suriname, where the Dutch people have lacked. [...] I’m giving them some of my spare time or my experience. I can’t do more than that.”* (Interview 8, 03/04/2023).

4.1.2. Extrinsic motivation

Extrinsic motivations are those that give a certain reward or status. One participant had an extrinsic motivation, which was to improve the public perception of the scientific discipline: *“I see this project as a contribution to a qualitative improvement of genealogical publications”* (Interview 14, 11/04/2023).

Another participant mentioned that they stumbled upon a certain name in a document and was asked to write and present an article about it for a specific historical magazine: *“[...] and then I saw that Groningen name and I delved into that [...] then I used the results of both projects [...] to write my article and my research”* (Interview 10, 18/03/2023). Under the assumption that this was not a voluntary written article, this is considered an extrinsic motivation since there’s a reward or pay attached to it.

As shown by the examples above, the vast majority had purely intrinsic motivations while two participants also had extrinsic motivations where the first extrinsic motivation comes from the wish to improve for the general purpose whereas the second motivation stems from a potential reward for the participant itself.

4.2. Participant

The category *participant* deals with how the participant is experiencing their time on the project, which challenges they face and why they stay on a project.

4.2.1. Ease of participation

Ease of participation deals with how low boundary the activity is and easy to get started. Since the project is hosted on a website, this means that participants can contribute from wherever and whenever they want. One participant stated that *“I think I even do it on holidays [...] You have wifi everywhere”* (Interview 3, 19/03/2023). The process to start contributing is straightforward, which makes participating a very low boundary activity: *“You click the project, you log in and right away you see the first page in front of you”* (Interview 12, 17/03/2023).

In addition, participants choose whatever they want to contribute since there’s no one checking what the participants do or not do during their contribution sessions, in other words there’s no pressure to contribute: *“It’s not like that somebody will say oh you only did four documents today. Wouldn’t you do some more?”* (Interview 2, 12/03/2023).

This was stressed by another participant stating explicitly that they wanted it to remain a volunteer activity. When they were asked to sign up to become a controller in the project, they politely declined because being a controller adds a certain pressure to something that up to that moment, was considered completely voluntary: *“if you verify the work of others, they [their work] have the right to be verified as fast as possible. Yes, that adds a certain coercion behind it, and I do not feel like it.”* (Interview 6, 12/04/2023).

4.2.2. Time allocation

The time spending patterns greatly differs from person to person. While some may choose to work a few hours a week: *“I only do it a couple of hours in the week something like that, so it’s not that I work a whole day on it. No.”* (Interview 4, 10/03/2023), others are less consistent: *“I’m very atypical. Some days, by matter of speaking, I spend every hour of the day on it, every day of the week. Hour after hour, and there are times in which I contribute zero hours. Just like I said earlier, it fluctuates.”* (Interview 6, 12/04/2023).

In line with ease of participation, participants’ time spending patterns fluctuate depending on their free time: *“In the beginning I did more or longer, because I indeed really liked it. But at a given moment I thought, if I want to do other things in my life and this project is going to take while, then I’ll keep it to 5 tasks per day.”* (Interview 10, 18/03/2023).

4.2.3. Personal challenges

Personal challenges are certain things or situations that a participant could end up in which could lead them to quit temporarily or permanently contributing to a certain project. Permanent reasons included physical restrictions, such as becoming too old, chronic pains or eye fatigue. When asked what would need to happen for them to stop contributing. They said: *“Pure physical reasons, if I become too old. And become demented”* (Interview 8, 03/04/2023), similar reasons were mentioned by other participants *“except if I’m unable to do it physically... I could also just enter one deed a day [...] then I’m still doing something for them”* (Interview 2, 12/03/2023).

The project deals with The Netherlands' slave history, whilst this is already a sensitive topic in today's age; it's a reason for participants to take a break when they face very sensitive information: *"We're dealing with death certificates. And if I enter 5 certificates where a small child of only 2, 3 days, 3 months, 5 months who passed away [...] Then I've had it for a moment. I close it. Because then I'm going beyond my limit of what I can process emotionally"* (Interview 17, 30/03/2023). The participants did stress that this wouldn't be a reason to quit the project, however one participant said that they recruited a friend who had lost a child themselves and that the person had quit the project for that reason: *"she didn't like that at all, and she got caught in emotions, so she said: 'I quit'. [...] You must like it, or not. I continued."* (Interview 8, 03/04/2023). This finding is particularly interesting since it shows a glimpse of a different opinion or reason for leaving a project than those of all the interviews which were conducted.

4.2.4. Personal spillover effect

Personal spillover effect deals with what effects the project had on the participant's personal life, independent of the project they were contributing to. For example, the handwriting in some deeds is difficult to decode. While this is considered a challenge, a participant saw this as a chance to further refine their personal skills through signing up for a paleography class: *"I'm now following a paleography course because actually I like it too"* (Interview 1, 8/03/2023). Others mentioned that the project made them very involved in the topic: *"If you just transcribe, there's not a lot happening with you, I think, but because everything what happens around it and the information you get and the information, I search myself. Yes, to me it has become a very vivid project. And more than just entering names..."* (Interview 2, 12/03/2023).

4.2.5. Reward

Rewards is not what participants are after, but nevertheless they feel rewarded in their work through small messages from the project leadership: *"Well, I don't receive shoulder pats constantly, but what I said before, the fact that you get a message like 'guys we are doing extremely great, and we now have x percentage done of the deeds' and well, it's fine. I mean I don't need my ego stroked all the time, so it's going good like that, yes."* (Interview 9, 11/04/2023). Another participant summarized this nicely: *"You're being thanked, you are invited to gatherings, they won't count how many deeds you fill in."* (Interview 2, 12/03/2023). This suggests that participants feel rewarded for every action that stems from the leadership team, regardless the size of the gesture.

In contrast to the participant that rejected the offer of becoming a controller, one participant said they would feel honored to ever fulfil that role: *"if I be allowed the honor to participate with that [controlling], then I'd love to join"* (Interview 9, 11/04/2023).

4.2.6. Sustained engagement

Sustained engagement describes why participants stay active on the project. If the participant is really motivated, that will make them engaged: *"The initial motivation to do something which I think is extremely important, that just stays constant."* (Interview 9, 11/04/2023). Others really wanted to help the projects achieve their goal by making the documents digitally available: *"It's the whole package which makes it so interesting, which gives me a certain incentive: we continue until it's completely done."* (Interview 7, 15/03/2023).

The participants highlight the uniqueness of the tasks, meaning each task has a different story behind it which makes it very interesting: *“Because of the stories behind it, actually. So not the fact that I’m doing it [the tasks], because that’s my fun, my joy. But the story behind it for example that a Surinamese woman now can trace back her ancestors.”* (Interview 6, 12/04/2023). Aside from the stories behind the tasks themselves, the project leadership team puts in effort to make the project as vivid as possible by sharing images of places that are common in tasks: *“The fact that they [project leadership] participated, I found that an added value. And that wasn’t my reason [to stay in the project]. But they gave instructions. [...] They regularly send a picture, for example with the death certificates you had a lot of times where people died in the hospital, a military hospital [...] and at a certain moment I received an image of how that place looked now. [...] So that wasn’t the reason to start contributing, but maybe a reason to keep doing it.”* (Interview 10, 18/03/2023).

Seeing progression in the interviews works contagious, as there’s a feeling that the crowd is pushing the project forward: *“I said to my husband, there got to be at least 20 people working on it, because then it [project progression] made jumps forward when I requested a new deed. That’s funny, the feeling that there are more people at work. [...] I just like it when there’s progress.”* (Interview 10, 18/03/2023). While not only the progression of a project is important, the output is as well. One participant said that they really look forward to the project’s results, since that is the reason they contribute in the first place: *“That’s why I request feedback, what are the outcomes of the research results? What added value does this give compared to what we already knew. Actually, that’s the reason where you do it for. Well, why I do it.”* (Interview 1, 8/03/2023).

4.3. Project

The category *project* deals with all the facets directly linked to the project.

4.3.1. Activities

Activities are things participants can do in the project. The main activities in the project are related to transcribing documents, which is what almost all participants do: *“Actually only transcribing deeds. I did not do anything else.”* (Interview 10, 18/03/2023). Another activity that’s closely related to transcribing documents is checking the help lists, which are a collection of common names and street names within the project to speed up the tasks by filling data that’s already known: *“I also look at the help lists, if I don’t know something.”* (Interview 2, 12/03/2023).

Participants who stand out from the rest, for example by having large amounts of contributions are invited to become a controller where the work of other participants is validated to ensure quality contributions: *“I went from controller back to inputting. And I hope yes, I hope to become a controller once again, because I really liked the change.”* (Interview 7, 15/03/2023).

Alongside task-related activities, there are activities with a social component. Such as attending gatherings, usage of the forum, reading project related newsletters. These activities tend to strengthen the connection more than the task-related ones since there’s a place for connecting with other participants: *“You read on the forums that people are deeply hit by the fact that they came across their great-grandmother. [...] It’s so important to know where you came from”* (Interview 9, 11/04/2023).

4.3.2. Project awareness

Project awareness refers to how participants got to know the project or heard about it. Different types of media played an important role in making participants aware of the project. For instance, the project was presented on television, the leadership team was interviewed on the radio and articles appeared in the newspaper. One interviewee explained *“I joined the project when it was in the media that the project would start, on the news. And I believe, together with many others. And it was very funny, because during a gathering [...] there was someone that said: ‘Yes, I joined then, then I decided to join’ and I said ‘Oh, me too yes. That same night”* (Interview 15, 13/04/2023). Some found the current project just by looking around the current platform they were already using in their daily activities, since the project is hosted on a platform where other projects reside: *“I think it is a coincidence, I think. I was ready with the Arbeidseinsatz from the Second World War, and I was looking for new things and I liked the thing from Suriname the most because org [hetvolk.org] has many other things.”* (Interview 3, 19/03/2023).

4.3.3. Project challenges

Project challenges discusses which challenges participants face when contributing to the project. Four challenges have been identified: difficulty to decipher handwriting, insecurity/need for personal feedback, lack of an experienced buddy and lack of (updates about) project outcomes.

Since the documents date back from previous centuries and due to circumstances, not all documents are properly readable. In addition, the handwriting of civil servants at the time were hard to read. This is mainly a struggle for participants who lack the ability to decipher handwriting: *“At one point they said, we’ll try to extract as many information as possible for as long it’s possible. Because of ink corrosion, because of moist in the deeds, it can vanish completely. It’s not... it was not all deeds which were written in school handwriting.”* (Interview 9, 11/04/2023).

While control mechanisms are in place to verify the input of the completed tasks, participants are sometimes insecure about the work they fulfil since there’s a lack of personal feedback on contributions: *“I sometimes wonder, did I actually do it right or was it a mess? I can imagine, let’s say, from within the organization it’s not easy, but it’s a question which I have, or had.”* (Interview 14, 11/04/2023).

It can also be daunting for participants who start out to be completely on their own. Participants feel the need to have a ‘buddy’, someone with more experience, who the participant can reach out to for asking questions or general help: *“I would have liked if there was someone in the beginning period to who you can present things to. Just some other volunteer, but maybe with a little more experience.”* (Interview 14, 11/04/2023).

While it was shown that project updates through newsletter was a precursor to sustained engagement, some participants feel the need to receive even more updates but rather focus on the outcomes of the research: *“If the project would give some more information back and thus share some results, I probably would become more curious. And probably I’ll start to think oh yes yes, so indeed that is nice, I can spend some time on it again.”* (Interview 1, 8/03/2023).

4.3.4. Project expectations

Project expectations describes which expectations the participants have about the project. Participants start out with little to no expectations about the project. Rather, they were searching for something fun to do: *“Actually I didn’t have any expectations. I just thought nice and if I don’t like it anymore, then I quit and if I keep enjoying it, then I’ll keep doing it. Well, it’s only gotten more fun.”* (Interview 6, 12/04/2023).

Most of the participants expect to receive project progression updates around what is being done with the data: *“I’m very interested in the projects which have a lasting nature, where people can work with it. [...] To me it’s essential that these results become available for others.”* (Interview 10, 18/03/2023).

In line with the projects’ goals, participants expect that the project will be successfully digitalized and published so that families whose genealogy they are reconstructing can use these sources in their search: *“It’s my expectation that at a given moment, you can say it’s finished. [...] Now it is archived, in The Netherlands as in Suriname and that people – if they want – can get started with it.”* (Interview 9, 11/04/2023). In addition to getting to know more about the background of the people involved in history: *“I would hope that someone can discover something which is extremely interesting.”* (Interview 1, 8/03/2023).

4.3.5. Project leadership

Project leadership discusses how the participants view and/or interact with the leadership team. The guidance provided by the project leadership team helps participants out during the whole period of the project, and during the beginning where help is needed to get acquainted to the project and how it works: *“[they] guide us in this whole trajectory. Manuals were made upfront [...] about street names in Suriname, of first names, last names, plantation names, you name it. [...] We really benefitted from this, especially in the beginning.”* (Interview 7, 15/03/2023).

Participants share deep connection with the project leaders and are grateful for the opportunity to work with them since it’s rather coincidental that both worlds meet: *“Normally you never have [...] to deal with science, but now you really have names and faces of researchers who need you, but that’s two-way, if the project wants to succeed they can’t go without us and we cannot go without them.”* (Interview 7, 15/03/2023). Project leaders share updates about the project progression, show appreciation through emails and by being available for questions and remarks. One participant summarized it as follows: *“They give the feeling that it’s valued enormously what you’re doing”* (Interview 4, 10/03/2023).

4.3.6. Project spillover effect

Project spillover effect deals with potential positive impact for other projects. The way of working of the current project inspires participants to pass on these methods to other projects: *“I take things with me for the project I’m working on in Suriname. That is the Suriname archive. Then I think oh they could do this or that.”* (Interview 10, 18/03/2023).

Other projects which are hosted on the same platform, profit from motivated participants who seek to fill their time with meaningful activities: *“I get stressed when I have too little to do, so I think this is actually a great project to do on a regular basis. I was thinking to myself: if it stops, what then? Meanwhile I saw on the site of Het Volk [the shared platform] that there are other projects were I probably enroll in.”* (Interview 16, 31/03/2023).

4.3.7. Project website and interface

The project website is about the website with general information, about the project user interface and its forums focused on the technical aspect instead of on the content. Even though the general information about the project is hosted on a different website than where the projects' tasks are, the participants are quite happy with the interface and don't have a lot to say about it. *"Well, I think it's fine. That's very much the same as with other projects, that's handy."* (Interview 2, 12/03/2023).

The interface and the user experience of fulfilling tasks does seem an issue for some participants: *"If you run into a problem, then you ask your question on the forum and sometimes the answer comes quickly but sometimes a quarter, half an hour. It's still very fast, but then I already drop out because I won't do something else in the meantime. [...] You can't say for example, I'm saving this [...] and I take the next task. You can only work on one at a time."* (Interview 10, 18/03/2023).

Sometimes the user interface requires certain data points to be filled in, whereas it's simply not applicable to the current task. Participants struggle with this because they want to do their tasks correctly and not fill in data that's not correct: *"We must enter a hash [symbol] if an entry is unknown. So that's less nice if a baby dies or a young child. Yes, those are not married, but you are still required to enter hashes in the spouse field and in the name field enter 'not applicable'"* (Interview 13, 20/03/2023).

5. Discussion, conclusions, recommendations, and reflection

This chapter discusses the results and how they relate to the literature review, a conclusion regarding the research question is made, recommendations for both practice as future research to end with a critical reflection on how this research was conducted.

5.1. Discussion

Media increased attention to the project because of mainly two reasons. First, the project leadership team made various media appearances on TV and radio. Second, recent media coverage on how The Netherlands behaved in Suriname and Curaçao have helped put the topic on the agenda. These two reasons combined have led to people becoming more aware of the project and deciding to join and contribute. However, only a fraction of participants has joined because of their activity in other projects, meaning there's a limited spillover effect despite the project being a part of a larger platform. It seems that recruitment strategies have focused on media presence to reach a broader audience, while neglecting potential participants who are already active in the community since these have a greater chance of intrinsic motivation to participate in the project (Scheliga et al., 2018).

Project forums are a great place for asking questions and receiving help. Some struggle to find their way to the forums as it is considered overwhelming. Forums is one aspect of community building, but also guiding participants who start out. New participants express their need to have someone to rely on during projects. This is another aspect of community building that cannot be ignored, as to retain those new participants.

Initial motivations are rather of exploratory nature, such as interest in the topic, in history, in paleography. However, once participants get to know the project better, their motivation take a shift towards a more meaningful and deeper-rooted motivation. This altruistic motivation seems enough for participants to sustain their engagement over time since their feelings about the topic won't change because it's a part of who they are as a person.

Participants are aligned with project goals, which means that they want to project to succeed. During the project, the leadership team shares updates about the progression and background information about the project. These updates keep the participants engaged but remain hungry for what (scientific) outcomes the project will bring, which shows that participants are willing to devote time and effort and at least expect to be informed what is happening with their work and when the goals of the project will be reached so they feel recognized that the work they did was used for its intended purpose (Eveleigh et al., 2014). This could decrease the motivation and lead to attrition because results aren't shared.

Since participants are involved in projects, there is an emotional aspect of certain tasks that cannot be underestimated. While it was not brought up as a reason to quit, emotional strain caused participants to, at least temporarily, take a break from contributing. Surprisingly, no direct reasons for leaving a project have been identified. Indirect reasons, such as health and time limits have been brought up but are never a precursor to definitively abandon a project. Frequent points of trouble or discontent mentioned by participants was the lack of feedback, causing the participant not to know if they are doing what's expected, and technical challenges such as unable to correctly view and use the controls of the application where tasks need to be completed. Even though none of them indicated this would make them drop out of the project, it should definitely be paid attention to as these might be reasons for participants who actually dropped out but were simply, as a result of the sample method by the project leadership team, not questioned.

5.2. Conclusion

The current study tried to shed light on why participants stay engaged in citizen science projects by identifying their types of motivation, how they display engagement and how the latter unfolds over time.

Participants have a very deep motivation to contribute and see it as their moral duty to contribute to the project, especially due to the recent media coverage regarding how The Netherlands misbehaved in Suriname. Participants state that they are in for the long run, meaning that they want to see the project reach its goals, no matter what.

Another important aspect for participants is that the contributions are entirely decided by them. This means that they want to contribute whenever and whatever they want without outside pressure to contribute more. This autonomy makes participants more aware, and they get to choose how they demonstrate their engagement. Tasks can be quite dull, but the activities don't make participants engaged, rather the stories that stem from it. The story behind the tasks or information around the project feels much more valuable than simply the tasks, this is important as the stories define the engagement.

Project leadership engagement tends to lead to engaged participants, and likely vice versa. The leadership team shows engagement throughout the phases of a project. They start with awareness through media, they write manuals and interact with participants through forums, newsletters, gatherings they organize and give (personal) feedback to participants.

5.3. Recommendations for practice

Depending on the context of the citizen science project, project leadership teams should take into consideration the content and its potential emotional load of the tasks imposed on the participants. Even though it was not found to be a factor for leaving a project, some participants mentioned that the sensitiveness of the content on the project hit an emotional string at times which caused them to pause their contribution sessions. Therefore, participants should be informed and trained by the project leaders to handle these kinds of feelings. In addition, there should be a safe space or a person with whom participants can talk about what they come across when contributing to projects. Alternatively, a disclaimer before sensitive documents are being viewed could be a first step in helping participants prepare for the task.

Engagement can be expressed through short contribution sessions with a certain consistency such as every day or every week. Since these sessions vary on the time available of participants, the tasks needed to be fulfilled should be able to match the available time. Therefore, a complete task shouldn't be necessarily fulfilled within one contribution session by giving the participants the autonomy to complete their tasks on their time. However, this could introduce issues since a task may be in a pending state for a longer time. One mechanism that could be experimented with is by notifying participants who are taking a while before their task is complete, or/and a mechanism which automatically unassigns tasks if there has been inactivity on a certain task. An alternative to blocking a task, could be splitting up a large task into multiple smaller tasks which can be completed by multiple participants.

Feedback mechanisms are shown to motivate participants. First, feedback should be given to tasks fulfilled so participants know they are doing what is expected of them or get suggestions to improve their contributions. No feedback could lead to a certain disconnection in participants from the tasks. Implementing feedback could lead to more motivated participants and by that, improved contributions. In addition, feedback or updates should be given what is done with the projects contributions so participants know what is being done with their time and work which could increase the probability to participate again in future projects.

Recommendations above could be bundled into a manual or a set of guidelines where project initiators can use these to adapt their projects into creating a place where participants are engaged through the leadership team, have the freedom to work whenever and whatever they want. The emotional aspect of task content depending on the project should be taken into consideration.

5.4. Recommendations for future research

Future research should investigate whether and to what role project leadership's engagement plays in the engagement of participants, and vice-versa what impact does the engagement of participants have on the engagement of project leadership.

The forum section on crowd sourcing platform is a place where participants interact and help each other. Despite this common feature, not all participants reach the forums or feel that the forum is not a place where connection can be found. Future research could investigate which boundaries certain participants experience when they do or do not interact with the forums.

Since the interviews were conducted within one project, the results are limited to those of similar type of projects. Future research could investigate whether the results are mere within-project findings or whether conclusions can be generalized to other contexts. In addition, extra focus should be given to getting less motivated participants to be interviewed as well, since an open call for interviewees might have attracted more motivated individuals in the first place.

5.5. Reflection

The literature search was conducted on multiple occasions and was done through various iterations, which can be seen in the literature logbook. While the snowballing techniques helped finding relevant literature, the initial searches with queries came with some hurdles. By having multiple sessions with different queries, this led to duplicate entries. This is where the logbook helped since it kept track of all queries and their results. Duplicate entries weren't troublesome, but in the future one large query might have helped narrowing down the results instead of multiple searches to save time. Structure issues with the relevant literature's findings and content persisted throughout the literature search phase. The key findings, the topic, and recommendations for further research were stored in columns for each piece of literature in an Excel sheet that was somewhat structured. However, in the future, rather than using an Excel sheet for brief notes, creating an annotated bibliography would have been more appropriate given that that format already exists in written text.

The researchers were not involved in the selection of the participants. The project leadership selected participants based on the sole criteria that they would have contributed to the project. This could have influenced the results since it may be possible that more motivated individuals are willing to be interviewed instead of less motivated individuals through self-selection bias.

To make the comparison with crowdsourcing, the 20 participants were distributed over the different interviewers since it would have been unfeasible or too time-consuming to conduct these by only one interviewer. Each researcher was able to conduct their interviews using the interview guide and communication guidelines in which all the researchers agreed upon. Transcripts were made for each interview and shared across the researchers to start coding. The downside of this coding process is that a lot of information gets lost. Information like nonverbal cues, verbal accentuation or tone is context one researcher only has for the interviews they conducted themselves. To resolve any influence of this more 'top of mind' retrieved context in analysis, either all researchers should restrict analysis to the sole transcript or include nonverbal and paralinguistic information in their transcript. The latter would be more time-consuming yet more valuable to all interviewers.

The interviews were conducted in Dutch and the quotes were translated to English which could lead to having less context after translating. While it would be a very time-consuming effort, it could have helped if all the researchers together verified the translated quotes to check if the context and the message of the quote still holds up.

References

- Aitamurto, T., Landemore, H., & Saldivar Galli, J. (2017). Unmasking the crowd: participants' motivation factors, expectations, and profile in a crowdsourced law reform. *Information, Communication & Society*, 20(8), 1239-1260. doi:10.1080/1369118X.2016.1228993
- Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology*, 44(5), 427-445. doi:<https://doi.org/10.1016/j.jsp.2006.04.002>
- Aristeidou, M., Scanlon, E., & Sharples, M. (2015). *Weather-it: evolution of an online community for citizen inquiry*.
- Aristeidou, M., Scanlon, E., & Sharples, M. (2017). Profiles of engagement in online communities of citizen science participation. *Computers in Human Behavior*, 74, 246-256. doi:<https://doi.org/10.1016/j.chb.2017.04.044>
- Benyei, P., Pardo de Santayana, M., Aceituno-Mata, L., Calvet-Mir, L., Carrascosa-García, M., Rivera-Ferre, M., . . . Reyes-García, V. (2020). Participation in Citizen Science: Insights from the CONECT-e Case Study. *Science, Technology, & Human Values*, 46, 016224392094811. doi:10.1177/0162243920948110
- Bonney, R., Cooper, C. B., Dickinson, J., Kelling, S., Phillips, T., Rosenberg, K. V., & Shirk, J. (2009). Citizen Science: A Developing Tool for Expanding Science Knowledge and Scientific Literacy. *BioScience*, 59(11), 977-984. doi:10.1525/bio.2009.59.11.9
- Borst, I. (2010). *Understanding Crowdsourcing: Effects of motivation and rewards on participation and performance in voluntary online activities*. Erasmus Research Institute of Management, Retrieved from <http://hdl.handle.net/1765/21914>
- Bruckermann, T., Greving, H., Stillfried, M., Schumann, A., Brandt, M., & Harms, U. (2022). I'm fine with collecting data: Engagement profiles differ depending on scientific activities in an online community of a citizen science project. *PLOS ONE*, 17(10), e0275785. doi:10.1371/journal.pone.0275785
- Cappa, F., Laut, J., Porfiri, M., & Giustiniano, L. (2018). Bring them aboard: Rewarding participation in technology-mediated citizen science projects. *Computers in Human Behavior*, 89, 246-257. doi:<https://doi.org/10.1016/j.chb.2018.08.017>
- Estellés-Arolas, E., & González-Ladrón-de-Guevara, F. (2012). Towards an integrated crowdsourcing definition. *Journal of Information Science*, 38(2), 189-200. doi:10.1177/0165551512437638
- Eveleigh, A., Jennett, C., Blandford, A., Brohan, P., & Cox, A. (2014). Designing for dabblers and deterring drop-outs in citizen science. *Conference on Human Factors in Computing Systems - Proceedings*. doi:10.1145/2556288.2557262
- Franzoni, C., Poetz, M., & Sauermann, H. (2021). Crowds, citizens, and science: a multi-dimensional framework and agenda for future research. *Industry and Innovation*, 29(2), 251-284. doi:10.1080/13662716.2021.1976627
- Franzoni, C., & Sauermann, H. (2014). Crowd science: The organization of scientific research in open collaborative projects. *Research Policy*, 43(1), 1-20. doi:<https://doi.org/10.1016/j.respol.2013.07.005>
- Gardiner, M., Allee, L., Brown, P., Losey, J., Roy, H., & Smyth, R. (2012). Lessons from lady beetles: Accuracy of monitoring data from US and UK citizenscience programs. *Frontiers in Ecology and the Environment*, 10. doi:10.1890/110185
- Het Volk. (2022). De widgets. Retrieved from <https://hetvolk.org/widgets>
- Kawabe, L. A., Ghilardi-Lopes, N. P., Turra, A., & Wyles, K. J. (2022). Citizen science in marine litter research: A review. *Marine Pollution Bulletin*, 182, 114011. doi:<https://doi.org/10.1016/j.marpolbul.2022.114011>
- Lehmann, J., Lalmas, M., Yom-Tov, E., & Dupret, G. (2012). *Models of User Engagement*, Berlin, Heidelberg.

- Malinen, S. (2015). Understanding user participation in online communities: A systematic literature review of empirical studies. *Computers in Human Behavior*, 46, 228-238.
doi:<https://doi.org/10.1016/j.chb.2015.01.004>
- Martin, A., Ginns, P., & Papworth, B. (2017). Motivation and engagement: Same or different? Does it matter? *Learning and Individual Differences*, 55, 162. doi:10.1016/j.lindif.2017.03.013
- Meysman, F. J., De Craemer, S., Lefebvre, W., Vercauteren, J., Sluydts, V., Dons, E., . . . Huyse, H. (2022). Citizen science reveals the population exposure to air pollution
doi:<https://doi.org/10.31223/osf.io/bryje>
- Nov, O., Arazy, O., & Anderson, D. (2011). *Dusting for science: Motivation and participation of digital citizen science volunteers*.
- O'Brien, H. L., Roll, I., Kampen, A., & Davoudi, N. (2022). Rethinking (Dis)engagement in human-computer interaction. *Computers in Human Behavior*, 128, 107109.
doi:<https://doi.org/10.1016/j.chb.2021.107109>
- O'Brien, H. L., & Toms, E. (2008). What is User Engagement? A Conceptual Framework for Defining User Engagement with Technology. *JASIST*, 59, 938-955. doi:10.1002/asi.20801
- Parrick, R., & Chapman, B. (2020). Working the crowd for forensic research: A review of contributor motivation and recruitment strategies used in crowdsourcing and crowdfunding for scientific research. *Forensic Science International: Synergy*, 2, 173-182.
doi:<https://doi.org/10.1016/j.fsisyn.2020.05.002>
- Phillips, T. B., Ballard, H. L., Lewenstein, B. V., & Bonney, R. (2019). Engagement in science through citizen science: Moving beyond data collection. *Science Education*, 103(3), 665-690.
doi:<https://doi.org/10.1002/sce.21501>
- Ponciano, L., & Brasileiro, F. (2014). Finding Volunteers' Engagement Profiles in Human Computation for Citizen Science Projects. *Human Computation*, 1, 245-264. doi:10.15346/hc.v1i2.12
- Rutten, M., Minkman, E., & van der Sanden, M. (2017). How to get and keep citizens involved in mobile crowd sensing for water management? A review of key success factors and motivational aspects. *WIREs Water*, 4(4), e1218. doi:<https://doi.org/10.1002/wat2.1218>
- Saunders, M., Thornhill, A., & Lewis, P. (2019). *Research Methods for business students*: Pearson Education.
- Scheliga, K., Friesike, S., Puschmann, C., & Fecher, B. (2018). Setting up crowd science projects. *Public Understanding of Science*, 27(5), 515-534. doi:10.1177/0963662516678514
- Smaling, A. (2009). Generaliseerbaarheid in kwalitatief onderzoek. *KWALON*, 42(14).
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*: SAGE Publications.
- Van Brussel, S., & Huyse, H. (2019). Citizen science on speed? Realising the triple objective of scientific rigour, policy influence and deep citizen engagement in a large-scale citizen science project on ambient air quality in Antwerp. *Journal of Environmental Planning and Management*, 62(3), 534-551. doi:10.1080/09640568.2018.1428183
- van Galen, C. W. (2019). Creating an audience: Experiences from the Surinamese slave registers crowdsourcing project. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 52, 178 - 194.
- Yin, R. K. (2017). *Case Study Research and Applications* (6 ed.): Sage.

Literature logbook

Research Question: *Why do participants stay engaged in citizen science projects?*

Selection criteria:

- Peer-reviewed
- Topics around
 - Crowd science
 - Crowd sourcing
 - Citizen science
 - Motivation (in general, but also specific to CS)
 - Engagement (in general, but also specific to CS)
 - Community
 - Human-computer interaction (commonly used when talking about users interacting with (online) software applications)

Building Blocks Method

	Date	Literature Database or Journal	Search query (Core concepts and Boolean operators)	Number of found articles	Number of relevant articles	Reference to articles (authors, year)
1	18/09/2022	OU	("crowd science") <i>All fields + peer-reviewed, no date limit</i>	164	7	Franzoni et al. (2014) Scheliga et al. (2018) Sauermann et al. (2020) Beck et al. (2022) Franzoni et al. (2021) Lyons et al. (2019) Ikediego et al. (2018)
2	18/09/2022	OU	("crowd science") AND ("citizen science") <i>All fields + peer-reviewed, no date limit</i>	16	7	Sauermann et al. (2020) Franzoni et al. (2014) Scheliga et al. (2018) Beck et al. (2022) Franzoni et al. (2021) Parrick et al. (2020) Bu et al. (2019)
3	18/09/2022	OU	("citizen science") AND ("participant profiles") <i>All fields + peer-reviewed, no date limit</i>	3	1	Benyei et al. (2019)
4	6/10/2022	OU	("citizen science") AND ("engagement profiles") <i>All fields + peer-reviewed, no date limit</i>	162	1+	Aristeidou et al. (2017)
5	6/10/2022	OU	("crowdsourcing" AND "motivation factors") <i>All fields + peer-reviewed, no date limit</i>	14	2	Aitamurto et al. 2017 Zhao et al. (2014)
5	8/10/2022	OU	("research cost") AND ("citizen science") <i>All fields + peer-reviewed, no date limit</i>	4	1	Gardiner et al. (2012)
6	8/10/2022	OU	("curieuzeneuzen") <i>All fields + peer-reviewed, no date limit</i>	6	3	Berghman et al. 2021 Van Brussel et al. (2019) Hooyberghs et al. (2022)
7	15/10/2022	OU	success factors crowd sourcing <i>All fields + peer-reviewed, no date limit</i>	17	1	Rutten et al. (2017)
8	25/01/2023	OU	("recruitment" AND "citizen science" AND "historic") <i>All fields + peer-reviewed, no date limit</i>	7	1	Van Galen (2019)

Backward Snowball Method

	Article	Number of references	Number of relevant articles	Reference to articles (authors, year)
1	Profiles of engagement in online communities of citizen science participation	46	25	Appleton et al. (2006) Aristeidou et al. (2015) Bateman et al. (2010) Bonney et al (2009) Borst (2010) Burke et al. (2009) Cruz-Benito (2015) Curtis (2015) Eveleigh et al. (2014) Lehman (2012) Malinen (2015) Nov et al. (2011a) Nov et al. (2011b) O'Brien et al. (2008) Ponciano et al. (2015) Preece et al.(2004) Raddick et al. (2013) Raddick et al. (2010) Ren et al. (2012) Rotman et al. (2012) Wald et al. (2015) Wiggins et al. (2010)
2	Unmasking the crowd: participants' motivation factors, expectations, and profile in a crowdsourced law reform	59	8	Aitamurto (2015) Brabham (2012) Deci 1985 Estelles-Arolas et al. (2012) Howe (2008) Lakhani (2003) Nov (2007) Nov 2011

3	Validation and optimization of the ATMO-Street air quality model chain by means of a large-scale citizen-science dataset	38	6	Irwin (2018) Meysman et al. 2022 Van Brussel et al. (2019) De Craemer et al. (2020) De Craemer et al. (2020b) Bo et al. 2020
4	Finding Volunteers' Engagement Profiles in Human Computation for Citizen Science Projects	71	3	Kraut et al. (2012) Roberts et al. (2006) Raddick (2010)

Forward Snowball Method

	Article	Database	Number of found articles	Number of relevant articles	Reference to articles (authors, year)
1	Engagement in science through citizen science: Moving beyond data collection.	Google Scholar	146	1	Bruckermann et al. 2022
2	What is user engagement? A conceptual framework for defining user engagement with technology	Wiley	673	8	O'Brien et al. (2022) Cappa et al. (2018) Gu et al. (2021) Daugavietis (2021) Wrigglesworth (2018) Troll et al. (2018) Troll et al. (2016) Nguyen et al. (2016)
3	Profiles of engagement in online communities of citizen science participation	Open Universiteit	54	1	Kawabe et al. (2022)

Interview protocol

The interview guide was created through multiple steps in which all the researchers were involved in. The initial step involved translating the interview protocol from Phillips et al. (2019) into Dutch, as this was the language the interviews were conducted in. Second, each question was thoroughly reviewed and discussed by the researchers whether the question was relevant in the context of our research. Items that were deemed irrelevant or did not fit the purpose of the research were removed from the interview guide so only data was collected which was needed, leading to more focused questions. Third, as it was essential to capture additional information, the researchers added new questions and the necessary follow-up or probing questions if deemed relevant for their research. Finally, the questions were grouped into four themes to provide a structured approach so that every interview would be structured in the same way.

The interview guide and the initiation mail which was sent to every participant is added below. Questions that originates from the interview guide of Phillips et al. (2019) are marked in bold. Some questions do have a slightly different structure due to translation into Dutch.

Geïnterviewde (ANONIEME CODE): _____

Interviewer: _____

Datum: _____ Starttijd: _____ Eindtijd: _____

Voor het gesprek start:

- Controleer of de informed consent is getekend
- Online -> Bevestiging van Dr. M. Prats López gekregen: Ja / Nee

Introductie:

Goedemorgen/middag/avond, ik ben _____. Bedankt dat u de tijd wilde nemen om met mij te praten over het project 'Historische database Suriname Curaçao'. Zoals ik in de e-mail zei, zal ik het gesprek opnemen. U kunt vragen overslaan als u dat wilt, en kunt u het interview op elk moment stoppen. Om uw privacy te beschermen, wordt de uitwerking van het interview geanonimiseerd, en worden uw antwoorden alleen voor ons onderzoek gebruikt.

Hoe heet u? Mag ik (voornaam) zeggen?

We hebben maximaal een uur gepland voor het interview. Heeft u ruimte voor uitloop, indien nodig?

Heeft u nog vragen voordat we beginnen? (nee) Mooi, dan gaan we beginnen en start ik de opname.

.....
Ik wil graag beginnen met enkele algemene vragen:

Project

1. **Wanneer begon u deel te nemen aan het project?**
2. **Hoe bent u te weten gekomen over het project?**

Dan wil ik u nu graag wat vragen gaan stellen over uw ervaringen met het project en uw redenen voor deelname. Vindt u dat goed?

Ervaringen

1. **Waarom begon u deel te nemen aan het project?**
 - a. **Probe:** Ben je altijd al geïnteresseerd geweest in X (bv. geschiedenis in het algemeen, geschiedenis van Suriname/Curaçao in het bijzonder)?
 - b. **Probe:** Waarom zorgde die reden ervoor dat je specifiek bij dit project kwam?
 - c. **Probe:** Wat zijn uw gedachten over het thema van dit project?
 - d. **Probe:** Bent u door een ander project terecht gekomen bij dit project?
 - e. Waren er nog meer redenen? (Indien ja, naar punt a)
2. **Wat waren uw verwachtingen over het project, uw deelname en de activiteiten toen u besloot deel te nemen aan het project?**
 - a. **Probe:** Wat hoopte je eruit te halen?
3. **DEZE VRAAG ALLEEN STELLEN ALS DE DEELNEMER LANGER DAN TWEE MAANDEN OP HET PROJECT ACTIEF IS**

Wat waren uw ervaringen in de beginperiode (eerste twee maanden) van uw deelname?

 - a. **Probe:** Wat haalde u eruit?

- b. **Probe:** Ervaringen waarmee: met het invoeren, het forum, contact met de projectleiding?
- 4. **Wat zorgde ervoor dat u na de eerste periode langer bij het project bleef?**
 - a. Zijn er nog andere redenen?
- 5. Welke ervaringen met het project zorgen ervoor dat u nog steeds betrokken en gemotiveerd blijft om activiteiten voor het project uit te voeren?
 - a. Welke recente gebeurtenissen en/of activiteiten kunt u bedenken die uw ervaring met het project hebben beïnvloed?
 - b. Zijn er dingen die uw deelname of betrokkenheid nog verder zouden kunnen vergroten?
- 6. **Heeft u belemmeringen of uitdagingen ervaren bij uw deelname aan het project? Zo ja, welke?**
 - a. **Probe:** Kunt u een voorbeeld geven van zo'n moment?
 - b. **Probe:** Is er bijvoorbeeld iets dat ertoe kan leiden dat u het project verlaat? Gelieve uit te leggen.
- 7. **Heeft uw betrokkenheid bij het project ertoe geleid dat u deelnam aan gelijkaardige projecten? Beschrijf zo ja, of waarom niet?**
 - a. (**Probe:** doen ze het voor sociale redenen, voor verbinding met de plaats, voor waarden rond de omgeving, etc.).

Dat was de laatste vraag over uw ervaringen en redenen voor deelname aan het project. De volgende vragen gaan over wat u zoal doet in het project, en daarbij zijn we geïnteresseerd in zowel de taken en activiteiten die u nu uitvoert, als de taken en activiteiten die u in de beginperiode van uw deelname aan het project uitvoerde. Sommige vragen zullen daarom twee keer gesteld worden: één keer voor de huidige situatie, en één keer voor hoe het in het begin was. Bij elke vraag zal duidelijk aangegeven worden over welke periode het gaat. Heeft u hier vragen over? Dan gaan we beginnen:

Projectwerk

1. **Beschrijf voor mij hoe een typische dag van deelname aan dit project voor u eruitziet?**
 - a. **Probe:** Hoe ziet een moment eruit waarop u aan het bijdragen bent?
 - b. **Probe:** Zijn er bepaalde patronen of regelmaat in uw bijdrage? (bijvoorbeeld dag/week/maand of seizoensgebonden patronen)
2. Als u terugdenkt aan de beginperiode van uw deelname, de eerste paar maanden. Kunt u zich nog herinneren of u in het begin ook zo werkte, of was het toen anders dan wat u nu doet?
 - a. Hoe is dat zo gekomen?
3. **Kunt u omschrijven welke activiteiten u doet en heeft gedaan in het project?**

Probe: (Als activiteiten onduidelijk is voor participant): Ik bedoel: wat is uw ervaring met activiteiten zoals bijvoorbeeld met het invoeren, met het forum, met de nieuwsberichten, en met bijeenkomsten?

 - a. Als iemand heeft ingevoerd: Heeft u weleens invoer gecontroleerd?
 - i. Duiding: als deelnemer niet weet dat controlemechanisme bestaat, kan je vertellen dat de aktes door twee deelnemers ingevoerd worden en dat deze vervolgens gecontroleerd worden. Hierover kunnen ze meer in het forum vinden of Thunnis (de projectleider) vragen.
 - b. Voor de activiteiten die u noemde:
 - i. Kunt u aangeven hoeveel tijd per week u besteedde aan X? **Probe:** Hoe verdeelt u uw tijd over de verschillende taken?

- ii. Wat vindt u het leukste om te doen?
- 4. **Als u weer terugdenkt aan de beginperiode van uw deelname, de eerste paar maanden. Kunt u zich nog herinneren of u toen dezelfde activiteiten deed, of is dat veranderd dan wat u nu doet?** (aspecten genoemd bij vraag 3 navragen)
 - a. Hoe is dat zo gekomen?

Nu we over projectwerk hebben gesproken, wil ik graag nog een aantal zaken kort even polsen, zoals het gebruik van de gebruikersinterface op zowel de website en het forum en rond feedback op het project.

Interface, feedback en verbondenheid

1. Wat is uw ervaring met de project website?
 - a. **Probe:** Wat vindt u er goed aan en waarom?
 - b. **Probe:** Wat vindt u er minder goed aan en waarom?
2. Wat is uw ervaring met de interface van het invoerscherm van de akten?
 - a. **Probe:** Wat vindt u er goed aan en waarom?
 - b. **Probe:** Wat vindt u er minder goed aan en waarom?
3. Wat vindt u van de feedback die u krijgt?
 - a. **Probe:** Wat vindt u van de erkenning van uw bijdrage?
 - b. **Probe:** Wat doet u momenteel met verbeterpunten voor het project?
4. Hoe zou u uw gebruik van het sociale forum omschrijven?
 - a. **Probe:** Wat vindt u van de verbondenheid met andere deelnemers?

Ten slotte de laatste vragen, zodat ik uw ervaringen met het project volledig kan begrijpen. Kunt u mij vertellen wat dit project voor u heeft betekend sinds u begon?

- a. **Probe:** Wat heeft u al uit het project gehaald of geleerd?
- b. **Eerder zei u dat u verwachtte dat uw ervaring met het project <vul verwachting in>. Voldeed het project aan uw verwachtingen? Probe:** Leg uit. Waarom wel of waarom niet?

Ik heb geen verdere vragen. Heeft u nog vragen?

Heel erg bedankt voor uw tijd; we stellen uw deelname zeer op prijs!

Stoppen van de opname

Codebook

Category	Code	Times applied	Quote
Motivation	Intrinsic motivation	154	<p>“Look, I love history and stories and all those kind of things. A slave register like these is of course very special, so the fact that you can investigate it and get a better picture and that you can work on it, and that people can continue searching for their relatives... yes, that’s what I found very special.” (Interview 12, 17/03/2023).</p> <p>“You can’t just use it for yourself, you must contribute as well. And that’s a boring task, but hey it needs to happen, so in a sense you contribute to it” (Interview 14, 11/04/2023).</p>
	Extrinsic motivation	2	<p>“I see this project as a contribution to a qualitative improvement of genealogical publications” (Interview 14, 11/04/2023).</p> <p>“[...] and then I saw that Groningen name and I delved into that [...] then I used the results of both projects [...] to write my article and my research” (Interview 10, 18/03/2023).</p>
Participant	Ease of participation	40	<p>“I think I even do it on holidays [...] You have wifi everywhere” (Interview 3, 19/03/2023).</p> <p>“You click the project, you log in and right away you see the first page in front of you” (Interview 12, 17/03/2023).</p>
	Time allocation	56	<p>“I only do it a couple of hours in the week something like that, so it’s not that I work a whole day on it. No.” (Interview 4, 10/03/2023).</p> <p>“I’m very atypical. Some days, by matter of speaking, I spend every hour of the day on it, every day of the week. Hour after hour, and there are times in which I contribute zero hours. Just like I said earlier, it fluctuates.” (Interview 6, 12/04/2023).</p>
	Personal challenges	40	<p>“Pure physical reasons, if I become too old. And become demented” (Interview 8, 03/04/2023)</p> <p>“We’re dealing with death certificates. And if I enter 5 certificates were a small child of only 2, 3 days, 3 months, 5 months who passed away [...] Then I’ve had it for a moment. I close it.</p>

			Because then I'm going beyond my limit of what I can process emotionally" (Interview 17, 30/03/2023)
	Personal spillover effect	49	"I'm now following a paleography course because actually I like it too" (Interview 1, 8/03/2023) "If you just transcribe, there's not a lot happening with you, I think, but because everything what happens around it and the information you get and the information I search myself. Yes, to me it has become a very vivid project. And more than just entering names..." (Interview 2, 12/03/2023)
	Reward	28	"Well, I don't receive shoulder pats constantly, but what I said before, the fact that you get a message like 'guys we are doing extremely great and we now have x percentage done of the deeds' and well, it's fine. I mean I don't need my ego stroked all the time, so it's going good like that, yes." (Interview 9, 11/04/2023) "if I be allowed the honor to participate with that [controlling], then I'd love to join" (Interview 9, 11/04/2023)
	Sustained engagement	49	"The initial motivation to do something which I think is extremely important, that just stays constant." (Interview 9, 11/04/2023) "It's the whole package which makes it so interesting, which gives me a certain incentive: we continue until it's completely done." (Interview 7, 15/03/2023)
Project	Activities	157	"Actually, only transcribing deeds. I did not do anything else." (Interview 10, 18/03/2023) "I went from controller back to inputting. And I hope yes, I hope to become a controller once again, because I really liked the change." (Interview 7, 15/03/2023)
	Project awareness	29	"I joined the project when it was in the media that the project would start, on the news. And I believe, together with many others. And it was very funny, because during a gathering [...]"

			<p>there was someone that said: ‘Yes, I joined then, then I decided to join’ and I said ‘Oh, me too yes. That same night’” (Interview 15, 13/04/2023)</p> <p>“I think it is a coincidence, I think. I was ready with the Arbeidseinsatz from the Second World War, and I was looking for new things and I liked the thing from Suriname the most because org [hetvolk.org] has many other things.” (Interview 3, 19/03/2023)</p>
Project challenges	54		<p>“At one point they said, we’ll try to extract as many information as possible for as long it’s possible. Because of ink corrosion, because of moist in the deeds, it can vanish completely. It’s not... it was not all deeds which were written in school handwriting.” (Interview 9, 11/04/2023)</p> <p>“I sometimes wonder, did I actually do it right or was it a mess? I can imagine, let’s say, from within the organization it’s not easy, but it’s a question which I have, or had.” (Interview 14, 11/04/2023)</p>
Project expectations	36		<p>“Actually, I didn’t have any expectations. I just thought nice and if I don’t like it anymore, then I quit and if I keep enjoying it, then I’ll keep doing it. Well, it’s only gotten more fun.” (Interview 6, 12/04/2023)</p> <p>“It’s my expectation that at a given moment, you can say it’s finished. [...] Now it is archived, in The Netherlands as in Suriname and that people – if they want – can get started with it.” (Interview 9, 11/04/2023)</p>
Project leadership	57		<p>“[they] guide us in this whole trajectory. Manuals were made upfront [...] about street names in Suriname, of first names, last names, plantation names, you name it. [...] We really benefitted from this, especially in the beginning.” (Interview 7, 15/03/2023)</p> <p>“Normally you never have [...] to deal with science, but now you really have names and faces of researchers who need you, but that’s two-way, if the project wants to succeed, they can’t go without us, and we cannot go without them.” (Interview 7, 15/03/2023)</p>

	Project spillover effect	18	<p>“I take things with me for the project I’m working on in Suriname. That is the Suriname archive. Then I think oh they could do this or that.” (Interview 10, 18/03/2023)</p> <p>“I get stressed when I have too little to do, so I think this is actually a great project to do on a regular basis. I was thinking to myself: if it stops, what then? Meanwhile I saw on the site of Het Volk [the shared platform] that there are other projects were I probably enroll in.” (Interview 16, 31/03/2023)</p>
	Project website and interface	54	<p>“Well, I think it’s fine. That’s very much the same as with other projects, that’s handy.” (Interview 2, 12/03/2023)</p> <p>“If you run into a problem, then you ask your question on the forum and sometimes the answer comes quickly but sometimes a quarter, half an hour. It’s still very fast, but then I already drop out because I won’t do something else in the meantime. [...] You can’t say for example, I’m saving this [...] and I take the next task. You can only work on one at a time.” (Interview 10, 18/03/2023)</p>