# Creating a new crowdfunding channel for social sciences and humanities research: exploring the user needs

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# CREATING A NEW CROWDFUNDING CHANNEL FOR SOCIAL SCIENCES AND HUMANITIES RESEARCH: EXPLORING THE USER NEEDS

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## ABSTRACT

Over the years, the funding of scientific projects has been the responsibility of traditional research funding institutions, such as government programmes or mainstream trusts. However, there are areas and topics of research which, for a variety of reasons, remain underfunded by traditional programmes. Crowdfunding has provided an alternative means of providing financial support to researchers and projects which ordinarily are not of interest to government funding agencies and other major funders of research. This paper explores the user needs of a nascent crowdfunding channel for Social Sciences and Humanities (SSH) research in Europe. The goal of the research was to understand and formalise a set of users' needs that could help in setting up this nascent crowdfunding solution. The users are the SSH researchers who seek financial support on scientific projects and the funders who are motivated to invest in a project. We utilised a mixed method of research design to collect both qualitative and quantitative data about the users and their needs. This included codesigning work and a Europe-wide questionnaire. The outcome of this work was formalised in a set of practical recommendations for the new crowdfunding channel, which might have a broader application for the design of crowdfunding solutions. This research is part of a large European research project, focused on building a discovery platform for SSH, called GoTriple, of which the new crowdfunding channel is one of the services.

## 1. INTRODUCTION

Crowdfunding is an innovative practice where large numbers of people fund projects by giving small sums, using internet-based platforms. Crowdfunding is an increasingly important practice in our digital society which allows the funding of initiatives and projects with the mobilisation of a crowd of financial supporters. According to Calic (2018), crowdfunding is a process of

sourcing small contributions from many individuals to support a proposed idea through an online platform. Crowdfunding can be applied and used in many areas which includes supporting product development (Belleflamme et al., 2013), the creation of artistic projects (Dalla and Dekker, 2021), or taking stakes in a start-up (Belleflamme et al., 2014). Recently, the potential of using crowdfunding for scientific research has also been highlighted in the literature, as a novel avenue of funding research (Mollick, 2014; Dahlhausen et al, 2016, Sauermann et al, 2019, Vachelard et al, 2016, Wheat et al 2013). This paper will focus on this last type of crowdfunding in particular.

Traditionally, it is the responsibility of government agencies to fund research projects (Deng et al, 2022) or other mainstream funders such as large trusts (e.g., Wellcome Trust in the UK for medical research). However, the difficulties in accessing government-funded projects in many countries have made crowdfunding a potential alternative to fund, generally small, research projects (Laurell et al, 2019, Moritz and Block 2016). Moreover, there may be areas of research where research funding is limited or has been generally declining over recent years, for example, because of an increased shift of attention toward hard sciences. One known example of this decline in funding is that of the broad field of Humanities. In this regard, crowdfunding could alleviate some of the reliance on traditional funding (Molllick, 2014) and perhaps offer an alternative to fund research which is less likely to receive support from traditional sources. Moreover, according to Perlstein (2013), the crowdfunding of science could bring a more democratic decision process to research by allowing the public to be part of the research they believe in. Crowdfunding can provide an alternative means of financing scientific projects which ordinarily would be unlikely to succeed via traditional funding such as government funding agencies. Crowdfunding can be a viable alternative to fund research areas which may be neglected or underfunded by public research funding programmes but could be of interest to the public.

With the ubiquity of social media, crowdfunding platforms have provided an alternative way for scientific research projects to receive the attention of people who want to support a project of their choice. The crowdfunding of science can take place on generalist crowdfunding platforms such as Kickstarter, although several crowdfunding platforms dedicated specifically to science and research have emerged, such as Experiment.com. The platforms or channels as key artefacts of the crowdfunding process play an important role. The crowdfunding platform is indeed an intermediary that brings funders (which in crowdfunding of science generally make donations), and researchers (which are seeking funding) together. The organisations or researchers that run a crowdfunding campaign for seeking funding, need to capture the attention of many backers and convince them that the project they are campaigning for is worthy of their donation or investment. Platforms therefore create the enabling environment to attract the crowd which will bring a small amount of capital to each to finance a project of their choice. Platforms can also support trust insofar as the funders can be made aware of how the money will be spent and what they can expect from their support.

There has been much research devoted to investigating general crowdfunding, some of which will be reviewed in the next section of the paper. One important consideration is that in the crowdfunding landscape, three main types of actors can be identified: the funders (the crowd of people giving money), the proposers of a project, (researchers in the case of science, inventors, etc.), and the crowdfunding organisations (the intermediary platform). Much focus in the literature has been on studying the motivations of funders and why they decide to give money to a specific project or endeavour, sometimes without receiving anything in return. Similarly, a significant amount of research has been devoted to understanding how to set up a

specific campaign, i.e., the point of view of those proposing a project, like the researchers in the case of scientific crowdfunding. However, there is comparably much less research focused on crowdfunding organisations, i.e. on their actions concerning the creation of a new crowdfunding platform or channel, and on the definition of the user needs or requirements the crowdfunding organisation need to obtain to deliver a crowdfunding platform. User needs is a concept from the field of human-centred design which designates in simple terms what the users would need the system or the service which is being designed to do, to allow them to achieve their intended goals (e.g. Cooper et al, 2007). Normally user needs are gathered based on empirical research conducted with users. For example, one goal of the researchers of crowdfunding as users would be to have powerful tools to promote their project, and for funders' needs may be a way to monitor the progress of the project. Therefore, the needs are a definition of what the platform should offer to allow the users to achieve this. Indeed, there is very limited research on the challenges that creating a new intermediary approach (i.e. creating a new crowdfunding platform or channel) may entail and what knowledge is important to acquire to create a new crowdfunding initiative. This will be the specific focus of this paper.

As part of the work conducted for a European H2020 project called TRIPLE, involving 18 partners, from 11 countries, we have been actively involved in the process of setting up a new crowdfunding channel for Social Sciences and Humanities (SSH) research. This channel is part of a suite of innovative services offered within a digital platform for discovery in SSH. Indeed, the goal of the project TRIPLE was to design and release the GoTriple discovery platform (https://www.gotriple.eu/), which allows the discovery of publications, people and projects in 11 European languages. The platform database in itself contains at present more than 9M discoverable documents, aggregated from a variety of sources. We consider the GoTriple crowdfunding service as a channel (rather than as a full-fledged platform) since it is just one component/service of a larger platform that offers other services (e.g., the GoTriple annotation, recommender system and so on), and therefore it is not a fully independent crowdfunding platform. Nonetheless, the key objectives are the same, supporting the contact between funders and researchers, and allowing researchers to promote their project idea with an exclusive focus on SSH research. The motivation for conducting this research and for setting up this new crowdfunding channel for SSH was related to the general lack of funding that certain areas of SSH are facing with the ambition to contribute to reducing this gap. This paper thus reports on some of the research conducted for creating this new crowdfunding channel, and the problems we have been seeking to explore were more practical than theoretical. Our objective was to inform the project partners with granular knowledge of the user needs that could support them in taking decisions for launching a new crowdfunding channel and therefore a new crowdfunding intermediary. To address this and answer the main research problem of "what elements and user needs should be taken into account when creating a new channel for the crowdfunding of research, with a focus on SSH?", we have designed research encompassing two different studies:

1. a codesign study conducted with both potential funders as well as proposers (i.e. researchers) and
2. a Europe-wide questionnaire aimed specifically at funders.

With both activities, our goal was to provide knowledge to address the problem of setting up a new intermediary crowdfunding with a focus on the user's needs. The following pages will present the results of this research and, in the discussion, offer some recommendations with broader applicability to crowdfunding for SSH.

## 2.  REVIEW OF RELATED LITERATURE.

Scientific crowdfunding, as an emergent area of crowdfunding, is currently under-researched. Most of the research focuses on factors that influence crowdfunding contributions, with a limited number of studies attempting to understand user needs and preferences for general, rather than scientific crowdfunding platforms. Therefore, this literature review will focus on previous findings regarding scientific crowdfunding which are relevant to inform the design of a scientific crowdfunding platform, followed by a review of the limited findings on general crowdfunding from a user perspective.

## 2.1 Crowdfunding Stakeholders

Crowdfunding is a global and novel finance option for businesses, ideas, and projects. Valanþienơ and Jegeleviþinjtơ (2014), noted that the stakeholder's approach to crowdfunding as a novel phenomenon is in its ability to satisfy the interests of all its stakeholders. There are three major key actors involved in making the crowdfunding process a successful venture according to Tomczak and Brern (2013), the fundraisers, the investors (individuals who contribute small sums to support a project) and the intermediaries (the organisation that manages the platform). Moritz and Block (2016) described these key actors with the following terms: capital providers, capital-seekers, and intermediaries. Other authors such as Jovanovic (2019) and Petruzzelli et al (2019) identified these key players as the project creator, the campaign to be funded, the supporters (i.e., the crowd) and the crowdfunding platform. In this research, we refer to these key players as (1) the proposers,  (2) the funders and (3) the intermediary. The first two actors and their relations are mediated by the intermediary platform and these form the basic structure of any crowdfunding process.

### 2.1.1 Proposers

We understand that crowdfunding helps to finance new project ideas (Lehner, 2016). The proposer (e.g., the researchers, in the context of crowdfunding of science), is an individual or organisation seeking funds to carry out a project. The researcher, in the case of the crowdfunding of science, will take the project idea to the crowdfunding intermediary organisation which will review the importance of the project and will support the fundraising through their platform. In a study by Belleflamme et al, (2014), they noted that the researcher comes to a crowdfunding platform with the hope to obtain access to additional funds.  Moreover, according to Sauermann et al, (2019, pp. 20), crowdfunding has broadened "access to resources for groups that have been excluded or disadvantaged in traditional funding systems". This encompasses research areas which are underfunded by mainstream funding mechanisms. There are several factors related to the proposers which may influence the success of the project. According to Mollick (2014), the portfolio of the researcher is important as it can serve as a signal for the quality of the project to be funded. To gain funding, the proposer needs to capture the attention of many people by convincing them that the proposed project is worthy of their investment (Wheat et al, 2013). The proposer needs to clearly state the problem they are trying to solve and how they intend to solve it to enable the funders to understand how their funds can make a difference (Mollick, 2014). If a proposer can demonstrate beyond reasonable doubt how they will address the problem with a tangible action plan, potential funders will likely donate to the project. Schäfer,

(2018) emphasised the need for scientists to engage in external communication at a very early stage in the research process.

## 2.1.2 Funders

These are individuals who fund projects by donating or investing small sums of money in a preferred innovative project. This is the crowd that is central to any successful crowdfunding campaign (Mollick, 2014). Byrnes et al (2014), mentioned that "successful crowdfunding relies on broad appeal and engagement with a large audience", meaning that funders are central to the crowdfunding success. A study by Wheat et al (2013) emphasized that the key factor in the fundraising success of a project is not the platform it was launched on, but the funders that a project initiator brings to that site. The funders do not only offer their money they also offer their opinions (Stonko and Henard, 2017). Younkin and Kuppuswamy, (2018) studied some of the characteristics of successful projects and found that the funding goal and duration are factors that can motivate people to invest their money in a project. Some funders can support the creator's ideas and strengthen connections with people in their social networks without any rewards (Bi et al, 2017). As noted by Bi et al (2017), a funder or investor will consider the information provided about a project before deciding whether to invest or not. Wheat et al (2013), further argue that larger amounts can be raised when scientists have larger and more engaged audiences for their research. This suggests that scientists who consistently reach out to audiences over time, obtain funds for their projects. Funders have also been argued to be risk averse, with research indicating they tend to fund less innovative projects (Aleksina et al., 2019). Similarly, given that a project's societal contribution influences the amounts raised for a project (Ryu and Kim, 2018), this suggests that funders may also be motivated to make a positive contribution to society through crowdfunding.

## 2.1.3 Crowdfunding Organisation/Intermediary Platform

The crowdfunding organisation establishes the connection between proposers, who aim to raise capital, and novel funders, who are willing to invest small amounts, through internet-based intermediaries (Valanþienơ & Jegeleviþinjtơ, 2013). Crowdfunding platforms are described by Beugre & Das, (2013), as a tool which allows the collection of funds from funders (financial pledges can be made and collected through the crowdfunding platform). The focus of the intermediary organisation is to provide a platform to match the researcher and funder and also provide funders with information about the projects and functionalities (Belleflamme et al, 2013; Calic, 2018). Other authors (Anglin et al 2018; Zhao and Shneor, 2020) suggest that the project description, in terms of narrative and visual quality, can make funders consider funding a project. There are several reasons why people fund projects and this is linked to the type of crowdfunding models. A study by Hemer, (2011) has categorised crowdfunding platforms into four main types: donation-based, reward-based, lending, and equity base platform. The crowdfunding of research is generally based on donations and funders expect little or no return. Crowdfunding platforms generally provide two key ways to pitch a project: a narrative and a short video (Mollick, 2014). Proposers are usually charged a fee by crowdfunding organisations if the fundraising campaign has been successful. In return, the crowdfunding organisation is expected to provide a secure and easy-to-use service.

## 2.2 Crowdfunding Models

The attraction to fund a project may be self-determined and this could depend on the crowdfunding type/model. The self-determination theory by Ryan and Deci (2000), states that people can be motivated because they value the activity or because there is strong external coercion. In line with the self-determination theory, the study of Mollick, (2014) has highlighted four main contexts in which individuals fund projects: Rewards, Equity funding, P2P lending, and Donation-base.

### 2.2.1 Reward-Base Model

Reward-based crowdfunding allows individuals to make donations to a project or even to a business endeavour and there is the expectation of receiving back something, (e.g., goods or services) later on (Calic, 2018, Zhao and Shneor, 2020). A study on the dynamics of success and failure among crowdfunded ventures by Mollick, (2014) shows that personal networks and underlying project quality are associated with the success of reward-based crowdfunding projects. Colombo et al, (2015), Hemer, (2011) and Mollick, (2014) have argued that in reward-based crowdfunding, funders act like consumers because the major business model of reward-based crowdfunding is pre-selling.

### 2.2.2 Equity-Based Model

This is a method of raising capital for startups and early-stage companies. This model allows funders to invest in a business idea in exchange for equity in that business. This model is like selling a stake in a business to several investors in return for investment (Moritz and Block, 2016). Equity-based crowdfunding is a solution for removing barriers to equity gaps that reduce the success of new start-ups or prevent them from concentrating on the core activities of their business (Hagedorn and Andreas 2015). Hence equity crowdfunding helps to raise capital from small contributions from a crowd of small investors.

### 2.2.3 P2P Lending Model

This model is also known as social lending or crowd lending as it enables individuals to lend money to each other without going to any financial institutions (Mollick 2014). P2P platforms set the terms and conditions that guide the transactions and connect borrowers to investors. The lender can get a better return on cash savings than they would get from a bank savings account, the borrowers also use this model as an alternative to traditional banks because it offers lower interest rates. This is a type of crowdfunding where funds are offered as a loan. In this model, Mollick (2014) noted that the lender may be more interested in the social good promoted by the venture than any return generated by the loan, including patronage model elements as well.

### 2.2.4 Donation-Based Crowdfunding or Patronage Model

This type of model places the funders in the position of philanthropists. Donation-based crowdfunding, according to Hemer (2011), is a form of fundraising where funders provide funding based on motivations without expecting any form of reward. This is different from traditional base fundraising as it provides a way for potential donors to reach people/groups in need of help without the constraints of physical distance (Tanaka and Voida, 2016). Agrawal et al (2015) noted that donation-based crowdfunding allows greater efficiencies in terms of geographical reach. Scientific research can be considered a type of donation-based

crowdfunding, as there is usually no tangible reward for the funders (Schafer et al, 2018, Mollick, 2014). However, some projects also provide non-monetary rewards such as photographs, lab visits, guest lectures, dinners, etc., and in these cases, scientific crowdfunding may partially overlap with reward-based crowdfunding.

## 2.3 Crowdfunding from a User Perspective

There is extensive research on crowdfunding, on the motivations of funders (Agrawal et al, 2015; Belleflamme, 2014; Mollick, 2014; Grber, 2012), but a limited number of studies have attempted to explore user needs for the creation or design of online crowdfunding platforms, and the existing ones mostly refer to general crowdfunding, rather than scientific crowdfunding. Prom et al (2016) observed that the content and interface elements on crowdfunding platforms should convey necessary information for the users. User research on a crowdfunding website in Indonesia identified user needs such as user profile customisation, receiving information and news through the platform, having a variety of payment methods and funding model types, and user support for creating campaigns and for campaign marketing (Perdana et al, 2017).

In the context of equity crowdfunding, user research found that individuals often lacked information about financial terms and pay attention to the risks presented at the top of a risk warnings page (as opposed to the bottom), suggesting platforms should present major risk warnings first and provide either a list of technical or financial terms to facilitate users' investing (Prom et al, 2016). A study by Lipusch et al (2021) explored the design elements that encourage co-creation (conceptualised as involving feedback and funding) on reward-based crowdfunding platforms. They tested the role of three design principles in influencing co-creation: the provision of multiple sources of information about the project (e.g., external reviews), encouraging funders to express their preferences (e.g., through participatory updates where they can provide feedback), and involving funders in product decisions (e.g., through voting on product features). However, we still have limited user research on crowdfunding around user needs, especially with scientific crowdfunding.

## 3.  DESIGN OF THE STUDY

As mentioned in the introduction, as part of the work conducted for an European H2020 project we have been actively involved in the process of setting up a new crowdfunding channel for SSH research. This channel is part of a suite of innovative services offered within a digital platform for discovery in SSH. The goal of the research presented here was to gather knowledge on the user needs for setting up this new "intermediary crowdfunding", in this way offering knowledge to the project leader for taking relevant decisions about this new channel. A mixed method of research design was used, we collected both qualitative and quantitative data. We believe that this combination ensures that the limitations of one type are balanced by the strengths of the other. This research design was assumed to enable us to gain insights into what matters and in which way it matters to the users-funders when it comes to the crowdfunding of science for SSH. Our research was articulated around two studies: a qualitative and codesign-oriented study (study 1) with a focus on funders and proposers and a quantitative study (study 2) based on a questionnaire only focused on funders.

## 3.1 Study 1

In study 1, we considered two separate end-user groups: 1) the funders (i.e. members of the public, which encompasses everyone, including other researchers putting money toward a crowdfunding project, e.g. proposed by a colleague or an acquaintance) and 2) proposers, namely SSH researchers who could benefit from the crowdfunding channel as a way to secure funding for their project idea. For both user groups, common activities consisted of finding out their awareness of existing crowdfunding platforms and their perceptions of them (if they had experience using them). The concerns of each group were investigated, along with what would contribute to the success of a crowdfunding platform. For funders (citizens) the following practical questions were addressed during Study 1:
- If they would be willing to fund projects via crowdfunding?
- What concerns would they have about this type of funding?
- What factors would lead them to fund projects?
- How would they like to be kept informed about any projects that they contributed to?

For researchers, the main issues addressed were:
- If they would be keen on using this type of funding platform?
- How the relevance and quality of any project proposal could be ensured?
- How would they like any funds to be managed?
- How should any research results best be communicated with funders?

In Study 1, we collected qualitative data through codesign activities both one-on-one sessions and workshops with multiple participants. Our goal was to work with potential funders as well as with potential proposers, through some hands-on activities to identify and refine an initial set of user needs. A total of 19 participants were selected from various European countries using a purposive sampling technique: 9 participants took part in the workshops and 10 participants took part in one-on-one sessions (See Table 1). Activities took place online using MS Teams and an online codesign board software called Miro.

During the codesign activities, we used some of the templates available in Miro to build the tasks, whilst other tasks were created by ourselves specifically for our purposes. The following tasks were planned and conducted during the codesign sessions:

1. We used sticky dots to allow participants to vote on pre-selected items, for example on the previous use of crowdfunding platforms. This was done to get an overview of their familiarity with the topic.
2. We used sticky notes to support the general sharing of ideas of facts with other participants, for example about the type of project people supported with crowdfunding previously.
3. During the workshops, we used the "bulls-eye template" (see Figure 1), to allow participants to sort items in order of importance. The template allows participants to identify items for the discussion on sticky notes and to place the sticky notes on the circles of the bull's eye depending on their sorting qualities e.g. more or less important. We let participants offer their options (rather than prepare a pre-set of options) as a way to answer specific questions posed to them (e.g. what kind of support proposers would want from a crowdfunding platform?) and to identify their relative importance.
4. The Likert Scale Template was used to assess the preferences of participants. This template allows participants to place sticky dots on a scale to answer a predefined set of questions.

Data from the codesign was analysed by producing affinity maps and graphs showing common traits across participants to identify participants' most relevant preferences and derive user needs insights for the crowdfunding channel. Participants were recruited by asking project partners to help us with

1. Citizens who could be interested in crowdfunding and who ideally had prior experience or knowledge of crowdfunding;
2. SSH researchers with potential interest in using crowdfunding for their research. In addition, we also made use of the TRIPLE project website, via the community page, to advertise upcoming co-design workshops that people might be interested in attending. We also sent notices via the TRIPLE mailing list, and posts were made on Twitter to try and find additional participants.

## 3.2 Study 2

In Study 2, the focus was to collect quantitative data from potential funders to gain a broader view of user needs and to answer some practical questions related to setting up the crowdfunding channel (e.g., questions around the trustworthiness of a new channel, or what would kind of projects would funder be willing to support). The data was collected through an online questionnaire format. A total of 586 respondents took part in Study 2 (see Table 1). To facilitate an Europe-wide response, the questionnaire was prepared in English and then translated into six different languages which include Portuguese, Spanish, Italian, French, German and Polish. The reason for the translation was to allow us to reach a larger audience who do not speak English across European countries. The practical questions we wanted to answer were very similar to those we approached during codesign for funders, specifically:

● What concerns would they have about this type of funding?
● What factors would lead them to fund projects?
● What should happen after the funding of a project and after its conclusion?

The questionnaire was organised in blocks, and composed of 5-point Likert-scale items. A Likert-scale item is a statement accompanied by a scale of answers (e.g., Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree) from which respondents select one answer. These items are meant to measure the perception of the respondent toward the statement. The questionnaire was composed of the following blocks:

• Block 1: A general demographic section (measuring gender, age, work status, relative perception of the household income).
• Block 2: A section measuring the general attitude of respondents toward science.
• Block 3: A section asking about previous experience with crowdfunding. This block included a filter question asking about previous direct use of crowdfunding, with only people having had previous experience filling in the remaining questions of this block.
• Block 4: A general section with a set of Likert statements asking about the perception of the relevance of crowdfunding to science.
• Block 5: A general section (divided into two parts) with a set of Likert statements asking about what kind of projects people would be more interested to fund via the crowdfunding platform.
• Block 6: A final section, with a set of Likert statements asking respondents about what should happen after the project conclusion.

The full questionnaire and the rationale for the specific questioning can be consulted in the appendix of the project report (De Paoli et al, 2021).

We utilised a snowball sampling method in reaching out to the respondents using social media and other digital channels (e.g. mailing lists) to reach respondents. Moreover, we invited our research partners to distribute the link to the questionnaire via their social media accounts in the respective national contexts. The questionnaire data were analysed with descriptive statistics, largely by producing graphs. Later in the presentation of results, we will assume that the positive response is the sum of the positive items of a Likert scale (e.g., the sum of "strongly agree" and "agree" responses), whilst the negative response is the sum of the negative items of the scale (e.g., the sum of "strongly disagree" and "disagree" response).

Table 1. The number of participants for the workshops, one-to-one session, and questionnaire

| User | Workshops | One-to-One | Questionnaire |
|---|---|---|---|
| Funder | 4 | 5 | 586 |
| Proposer | 5 | 5 | – |
| Total number of participants | 9 | 10 | 586 |

### 3.2.1 Ethics Considerations

Ethical approval was obtained from Abertay University Research Ethics Committee before commencing the data collection. For the qualitative research, a copy of the information sheet and consent forms was sent to participants in advance. This was done to give participants the time to read what the research entails, ask questions, and sign the consent form before participating in the research. Sessions for Study 1 were conducted via MS Teams and recorded (with the consent of the participants sought in advance). Participants were welcomed at the start of the meeting and verbally reminded about the session being recorded to ensure their consent (although informed consent had already been given). For the online questionnaire (Study 2), the consent and information sheet appeared at the beginning of the survey. Participants were asked to read and agree with the form before being allowed to answer the survey questions.

## 4. FINDINGS

## 4.1 Study 1

### 4.1.1 Why Do Funders Invest in Crowdfunding Projects?

During the workshops and the one-on-one sessions, participants largely told us that they were already familiar with mainstream crowdfunding platforms e.g., Kickstarter and Patreon. Some of the participants have used at least one of the platforms to make donations to mostly charitable causes, but not for funding scientific research. Participants explained that the reasons they had made donations were based on having empathy with the crowdfunding cause, and this made them feel that donating would have a positive effect on the common good.

### 4.1.2 What would Guarantee the Quality of a Project?

An investigation into the aspects of what would guarantee the quality of a funded project was a key component of the codesign workshops. On this, participants (funders) mentioned that

proposing researchers should collaborate with researchers from other institutions and ensure that researchers have sufficient expertise in the chosen topics. Receiving recommendations from other researchers about the quality of the projects was seen as an important factor contributing toward ensuring quality. Ensuring high ethics standards and open access were also relevant. The proposal should show the profile of the person responsible for the project with a description of the methodology and expected outcome. A researcher should show transparency about what the funding will be used for/how the money will be spent using accessible language. Researchers should show similar projects concluded, disclosing any conflict of interest, and show a calendar for the follow-up (disseminating results). Participants were asked to rank (using a bull's eye template) how important they considered the following features to know about the research proposal/researchers involved.

The results were (in order of decreasing importance, and aggregated after analysis):
● Research would be Peer reviewed (Very important)
● Affiliation of researchers involved (Very important)
● Proposal is Quality Assured (Very important)
● Previous experience of the researchers involved (Quite important)
● Qualifications of the researchers involved (Quite important)
● Metrics (of the researchers eg previous publications) (Least important)
● Career level of the researchers involved (Least important)



Figure 1. Bull's eye activity with funders: what they want to see in research description and what they think is more or less important

In the workshop that ran with researchers (the proposers) we asked the participants to rate how important the following factors might be in motivating people to fund research projects. In order of importance:

- A focus on the Common Good (Very important)
- Creating empathy in the funders (Very important)
- Create an interest in the topic (Very important)
- Well-presented research proposal (Quite important)
- Proposing projects having local interest (Quite important)
- Projects accompanied by recommendations (by known other scholars) (Quite important)
- Good Visual presentation (Quite important)
- Friendship (funders knowing the proposers) (Least important)
- Video explanation (Least important).

Proposers were asked about how the quality of research proposals could be ensured. To achieve this, researchers suggested that they should collaborate with other researchers. Researchers believe that the institution affiliates should be highly regarded and ensure that the project would be peer-reviewed. Similar to what funders suggested, for researchers the proposal should show the profile of the person responsible and show transparency about how the funding will be used. Researchers prefer to see a platform with a guide on how to put together a good proposal giving a clear description of who the target audience is going to be.

### 4.1.3 How would Funds be Managed?

The participants (both funders and proposers) agreed that the researcher's institution should be allowed to manage the funds or that the funds should be managed via an associated bank account where movements of the money could be traced by funders. Another suggestion was using a virtual 'wallet' created via the platform. They suggested that researchers should provide a quarterly report on how money was spent and allow the research to be peer-reviewed at the end of the project. There was a suggestion that if the target of the funding was not met, an extension of the funding period (once only) should be allowed, or the funders should be asked about accepting a 'lite' version of the project proposal. Researchers acknowledged that most crowdfunding platforms already have specific rules about this type of issue and that these should be made known to funders via the platform.

### 4.1.4 What are the Concerns Over Crowdfunding Research?

Funders used Post-it notes to help them express their concerns. Amongst what they posted, as shown in Figure 2, participants expressed deep concern about the time it may take for the money to be paid to the recipients and what would happen to the money if the target was not reached. There were concerns expressed that this type of funding should not prevent/replace the more structural/traditional funding of research. They also mentioned that the industry should also contribute to the crowdfunding of research.

Figure 2. Funders concerns about the crowdfunding of research

## 4.2 Study 2

To better understand the potential crowdfunding funders and have an increased focus on their needs as users, we then conducted an Europe-wide questionnaire. Questionnaire results differ from the codesign activities, which gave us some qualitative understanding of the user needs. Indeed, with the questionnaire, we sought to gather a more high-level answer to some of the practical questions related to setting up a new crowdfunding channel for SSH research. We collected 586 usable responses from the questionnaire.

### 4.2.1 Demographic Information of the Respondents

Most respondents belonged to either of the following two age brackets: 30-39 (which also is the mode, with n=183) and 40-49 (n=162). Following are respondents aged 50-59 (n=100) and 18-28 (n=90). The remaining were respondents with an age > 60 (n=52). The majority of respondents were employed full-time (n=400), with another set of respondents (n=46) stating they work part-time and n=42 being both students or self-employed. In terms of perceived income, the majority of respondents declared their perceived household income to be upper-middle (which also is the mode at m=296), followed by low-middle income (n=193). A minority (n=32) stated their household has a perceived low income, whilst a few respondents (n=26) stated their household income is high. The remaining respondents preferred not to answer the question. These two demographics (employment and perceived income) suggest that our respondents generally have disposable income and thus could in principle be funders on crowdfunding, via donation.

### 4.2.2 Why Do Funders Donate to Crowdfunding Projects?

Whilst we have asked this question (why do funders invest in crowdfunding projects?) in Study 1, we brought it forward again in Study 2 to see if there was some consistency in the response. From the results shown in Figure 3, we can detect some interesting insights. All the Likert items showed strong positive responses but some stand out more strongly than others. Having an interest in the topic (D1_general_interest), sharing values with the proposers

(D1_sharing_values) and seeing clear information about the project (D1_clear_infornation) drew more than 90% positive response. The social impact of the project (D1_social_impact) and the competence of the proposers (D1_competencies_proposer) were seen as relevant with a positive response above 70%. Whilst the expectations on the return of the project (D1_expectations_on_return), the personal knowledge of the proposer (D1_personal_knowledge_proposer) and the trust toward the crowdfunding platform are nearing 70% of positive response). Word of mouth (D1_word_of_mouth) was seen as least important of the items, albeit the positive response still is at 61.7%.
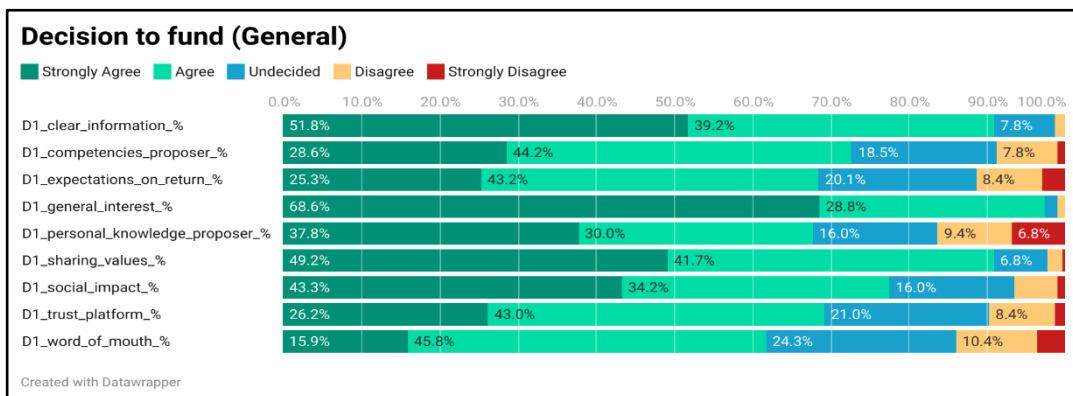


Figure 3. Decision to fund project responses

### 4.2.3 What Type of Research are Potential Users More Likely to Support?

We asked a further set of questions to understand the kind of projects respondents would be more or less likely to fund on a new SSH crowdfunding channel. This was to obtain the knowledge for prioritising decisions on the initial projects that could appear on our crowdfunding channel, during an initial bootstrapping phase. The statements did not focus on research topics but on various aspects that could compose a project proposition, including the nature of the proposers, the impact of the project, and aspects of direct interest for potential funders. The results in Figure 4 show a strong positive response on willingness to fund projects that have a social impact (S1_societal_impact), with 85.8% positive responses. Of relevance are projects that are local to the geographical area of the funders (with a positive response at 60.9%, S1_geographical_area) and projects with involvement of civil society partners, such as e.g. NGOs (at 61.8% of positive response, S1_civil_society). An interesting consideration can be made concerning risk: respondents regard more favourably projects which carry low risk (and are less ambitious, S1_low_risk_projects with 41.6% of positive response) than high-risk and more ambitious projects (S1_high_risk_projects with 33.4% of positive response). The question with the lowest positive response (and the highest negative) is the one on whether people would prefer to fund projects proposed by a university in the area where they live (S1_University_my_area) with just above 20% positive responses and 43.3% negative). Projects

conducted with business partners also did not draw a significant positive response (at 31.3%, with 35.3% negative response and 33.4% of unsure respondents).
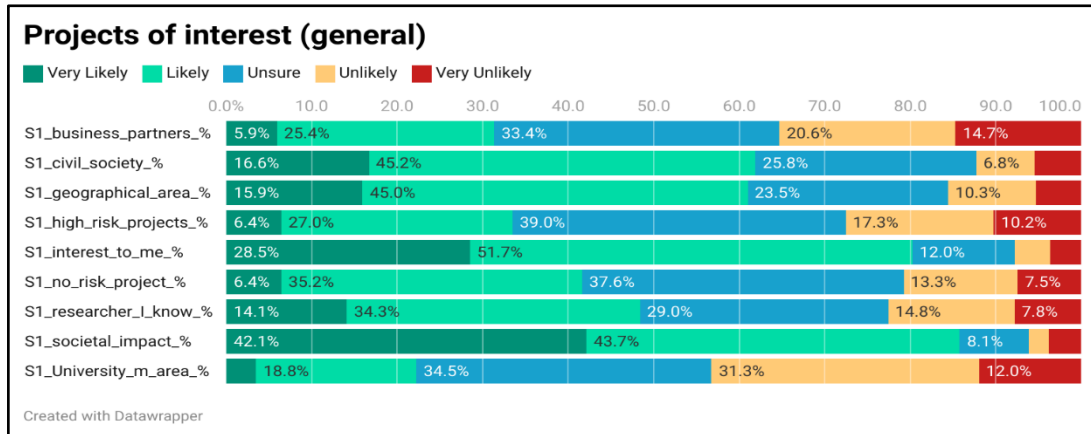


Figure 4. Projects of interest that participants would be more likely to fund
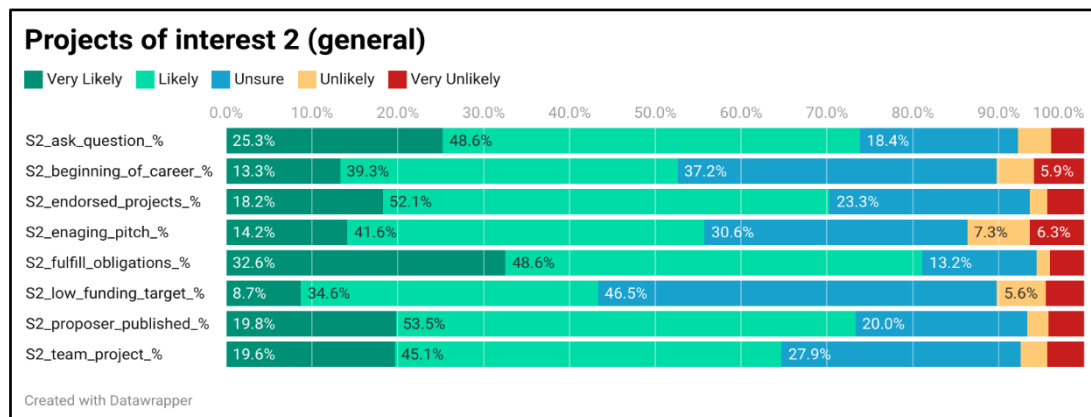


Figure 5. Projects of interest, that participants would be more likely to fund

In a second block of questions about interest toward funding projects (see Figure 5), the statement that received the highest positive response is the one related to the funding of projects where it is clear that proposers will fulfil their obligations (S2_fulfill_obligations), with 81.2% positive response. The statement on likely funding projects where there is the possibility to ask questions to the proposers also received highly positive responses (S2_ask_questions), at 73.9%. High importance is also given to the publications in the area of the project that the proposers have (S2_proposer_published), with 73.3% of positive responses. It is also relevant to note a similar response to the statement on whether people would be more likely to fund a project proposed by a researcher in their early career over an established scholar

(S2_beginning_of_career). This is one of the questions which has received the lowest positive response, at 52.6%.

### 4.2.4 The Seriousness of Projects and Proposers

A further section of the questionnaire focused on understanding some potential attitudes toward crowdfunding, concerning the seriousness of projects and proposers and the public perception of the democratisation of funding (see Figure 6). These included: 1) whether the publication of a project on a crowdfunding website is proof of the seriousness of the project; 2) whether the crowdfunding of science (and SSH in particular) is a means to allow the general population to decide about what should be funded or not; 3) whether the publication of a project on a crowdfunding platform is proof of the seriousness of the proposers and 4) whether the crowdfunding could be a solution to the underfunding of SSH research. We can see from Figure 6 that negative responses or uncertainty dominate the results concerning all the above aspects. For example, respondents do not see the publication of the project on a crowdfunding platform as proof that the proposed project is a serious one (C1_publication_seriousness), with a negative response at 51.7% and a large component of undecided people (30.9%). This might imply that funders will look at other aspects of the project to decide whether it is a serious one (e.g. whether the project is accompanied by recommendations, or whether they can assess the potential social impact of it, as per the previous block of Likert scales). Similarly, the publication of a project on a crowdfunding platform is not seen as proof that the proposer is necessarily a serious researcher (C1_platform_seriousness_proposer), with negative responses at 47.8% and 33.7% undecided. Again funders may be prone to look at other aspects to assess if the proposer(s) is serious, for example, previous publications or the profile of the proposer on the platform. Respondents to the questionnaire did not see crowdfunding as a potential solution to the underfunding of SSH research (with a negative response at 53.1%). Only the item on whether crowdfunding is a means to allow the public to decide about research has seen a relatively positive response at 50.6%, with 27% undecided. This last answer might imply that respondents to a certain extent perceive crowdfunding as a potential tool for creating some democratisation in the funding decision about research.
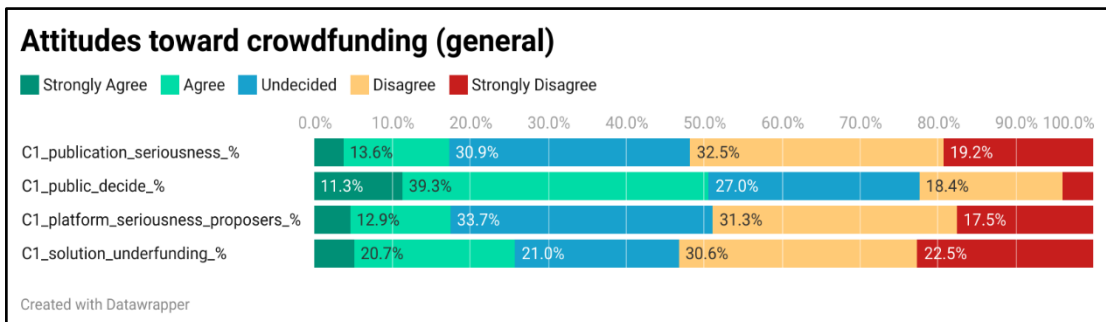


Figure 6. Attitudes toward crowdfunding scientific research (researcher response)

### 4.2.5 What are the Expectations of Users After the Project Conclusion?

In the questionnaire, we also asked respondents to tell us what should happen after the end of the project and after the funding. This is an important component of success for crowdfunding. Results are presented in Figure 7. Respondents provided a strong positive response to the

question about being informed of the project completion (A1_project_completed) with 95.5%
of positive responses. Clarity on the ethical implication (A1_ethical_implications) of the project
also is significant to note with 93.9% of positive responses. Three other statements received
positive responses above 90%, the ones related to the acknowledgments in publications that the
project was crowdfunded (A1_acknowledge_crowdfunded); the possibility to receive
information about the progress of the project (A1_progress_information); the importance of the
data collected by the crowdfunded project to be released as open data, where possible
(A1_data_open). Two statements received if compared to the previous ones, relatively low
positive responses (nonetheless still above 50%). The first one is the statement asking
participants if they would be interested to be involved more in a project (e.g., as citizen
scientists) (A1_involved_more) at 62.1%. The other statement was asking whether respondents
would be interested to discuss the results of the project with the researchers
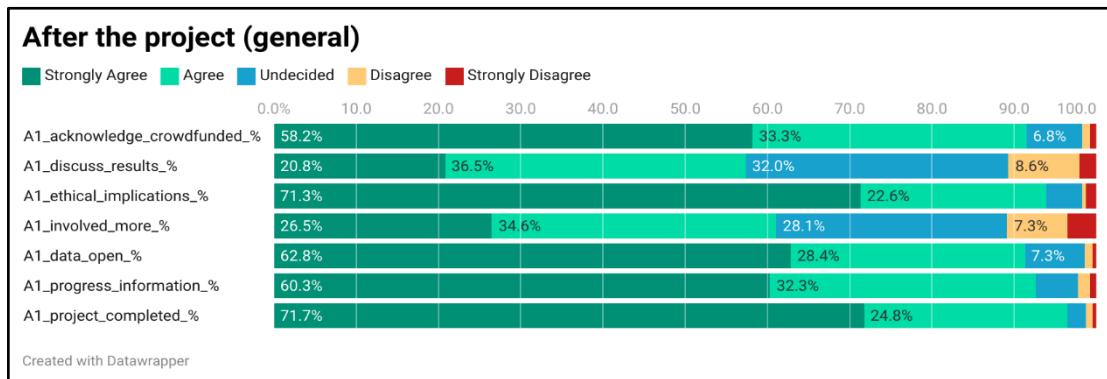(A1_discuss_results). This presents 57.3% of positive responses.



Figure 7. Expectations of users after the project

## 5. DISCUSSION & RECOMMENDATIONS

Most of the existing research on crowdfunding focuses on the motives of users, whether they
are funders of projects (e.g., Valanþienơ and Jegeleviþinjtơ, 2014; Gerber et al. 2012) or
proposers (e.g., Belleflamme et al, 2014). The investigation of motivations is an important
aspect to understand a phenomenon where in effect proposers are asking for help with funding
to a large group of other individuals, sometimes without any material reward in exchange.
Moreover, more research is needed to understand some of the peculiar aspects of the
crowdfunding of science which are tied to the donation-based model, over the other tested
crowdfunding models, where there is usually no tangible reward for the funders (Schafer et al,
2018, Mollick, 2014). Motivations however do not tell us much about the user needs for a novel
crowdfunding solution, i.e. what the intermediary platform needs to offer to allow users to
achieve their needs, whether these are e.g. being able to trust a project to donate or being able
to attract funders. There is limited research which has explored design and user needs for
crowdfunding, some of which have emphasised aspects which appear relevant such as a
presentation on the interface of the risks associated with a project (e.g. Prom et al, 2016),

promoting funders' capacity to influence the projects or the role of additional material accompanying the project, such as recommendations (e.g. Lipusch et al 2021). More work is needed to understand in a granular way what the user needs for crowdfunding, especially for supporting decision-making for those organisations that have the goal to set up a new intermediary solution. This research has offered a contribution in this direction with a focus on creating knowledge that could be used as a new intermediary for SSH research.

Indeed, the results from Studies 1 and 2 were formalised in a set of recommendations for setting up the GoTriple crowdfunding SSH channel, to achieve the desired impact whilst at the same time satisfying certain user needs as they emerged from the research. Notwithstanding that these recommendations served for the GoTriple work, we believe they can have potentially a broader application for other work on crowdfunding intermediary creation, especially focusing on research and on the areas which are generally underfunded by traditional research funding channels. Therefore, our key findings and recommendations regarding the crowdfunding of SSH research are as follows:

1. The results revealed that funders believe that projects with clear and identifiable societal impact, especially those that focus on the creation or fostering of a common good, should be promoted. This resonates with past literature on crowdfunding more broadly, in which a project's societal contribution was found to be related to the amount of funding received (Ryu and Kim, 2018), however the creation of a common good goes beyond any benefit for society, as even closed innovations could have a positive contribution to society, yet these are not a common good. The creation of a common implies a complete sharing of the results and the fact that these and the benefit for society, should not exclude people in any way. Moreover, the idea of a common good implies solidaristic concerns for what is society. Therefore, a first recommendation would be for a new SSH crowdfunding channel to prioritise projects with clear societal impact toward achieving the creation of a common good. This aspect may be reinforced by other observations, for example, the preference for funders to see projects done in partnership with civil society organisations (e.g., NGOs, 3rd sector) over projects done in collaboration with business partners.

2. It was also clear from the results that, during the bootstrapping phase of the new crowdfunding channel, projects which are team-based rather than individual-based should be prioritised as well as projects which carry low risk over those that have some significant risk. Indeed, our study found a slightly more positive preference of respondents towards low-risk, less ambitious projects, than towards high-risk, ambitious projects. These findings may be consistent with past studies suggesting that funders may be risk-averse and thus tend to fund less innovative projects (Aleksina et al., 2019). However, for those creating a new intermediary solution, the issue is not just about the risk aversion of funders, but more about creating trust toward the new channel, so that a new crowd can be created and attracted to the channel. Whilst often innovation in research comes from taking risks to devise novel knowledge, in the early phase of a new intermediary launch it is important to build a crowd trust toward the intermediary through achieving first "easy wins" and having projects that can achieve what is promised with limited risk for failure. After trust has been established and the crowd has seen that the project can deliver, it may be possible to experiment with more risky research, which could deliver significant novelty. Establishing trust with the crowd in the early phases of a new channel is even more important if we consider that respondents did not see the publication of a project in the channel as proof of the quality of the project.

Therefore, trust in a new SSH crowdfunding channel has to be first achieved in practice with successful projects.

3. The findings also reveal that proper communication channels should accompany the lifetime of the project. These channels will allow proposers to provide updates to funders. This is generally in line with observations made by previous research on science crowdfunding (e.g. Davidson and Tsfati, 2019; Sauerman et al. 2019; Mollick, 2014). The intermediary platforms should provide a feature to update the funders on the stages of the project and when the project is finally launched. This feature will also enable funders to ask proposers vital questions about the projects and report the results of the project and build pathways to increase the perception of seriousness over time.

4. Our results also showed a clear preference for funders that whenever possible, it should be a condition that the researchers should make their data open at the end of the project (once the relevant publications have been completed). This is generally in line with the previous observation about the common good, where also data generated through the project and with the financial support of the crowd should be part of that common good. Likewise, respondents were clear that any ethical implication of the proposed project should be identified in the project description, from the outset. These aspects are in line with current trends in scientific practice where open access and open data are becoming increasingly important, even for mainstream research funders. Similarly, ethical procedures are increasingly important determinants of the quality of science and are often a must-have for any project submission to grantmakers. A new SSH crowdfunding channel should therefore strive to cover these two important aspects, to entice the crowd to achieve trust and success.

5. The need to accompany the project proposal with reference letters from researchers and academics capable of vouching for the quality of the project and the capacity of the proposers and to include an ethical statement was also clear from the results. Although past literature on crowdfunding has not substantially focused on the effects of including ethical statements, our findings suggest that this is an important aspect for funders. A new SSH crowdfunding channel should therefore strive to include both aspects.

The results of this research have provided the project team with important material for initiating the setting up of a new crowdfunding channel for SSH, as part of the GoTriple platform. This channel (https://wemakeit.com/channels/operas) is now managed by OPERAS, the Research Infrastructure supporting open scholarly communication in the social sciences and humanities. GoTriple is one of OPERAS services. However, the recommendation thus formulated can benefit other initiatives around the crowdfunding of science, in particular concerning how to set up project descriptions that would be seen as favourable by the crowd (e.g. covering ethics, open data, the creation of a common good), and with a focus on SSH.

## 6. LIMITATIONS

## 6.1 Study Focus

This study focused on understanding the needs and preferences of users on a research-based crowdfunding platform with a focus on deriving recommendations for setting up a new crowdfunding channel initiative for SSH. As users of other platforms differ in their aim of

investing in a particular project, this study should be repeated on other types of scientific crowdfunding (i.e. beyond SSH) to understand the differences or similarities of users' needs and preferences of those crowdfunding types.

## 6.2 Sampling

Whilst during codesign, it is advisable to work with a small sample to derive results - since the focus is more on insights and inspiration for the design - we still need to acknowledge that findings from small qualitative samples may not be generalisable to a broader population (Vasileiou et al., 2018). Another limitation is that the purposive sampling method used may have introduced a sample bias in the study. The questionnaire, another limitation is the survey distribution method. The project members utilised their social media networks to distribute the questionnaire, and this led to the sample consisting of a good number of researchers as respondents that would exist in the general population. Although we collected a reasonable quantity of data from the public (i.e. from non-researchers), we believe that this may likely have an impact on the results. Therefore, the findings may not be fully representative of the broader population.

## 7.  CONCLUSION AND FUTURE WORK

The goal of this paper was to investigate the user needs for a nascent crowdfunding channel for SSH research and to formulate some general recommendations to achieve this. We did concentrate our research work on the investigation of the needs of proposers and funders. This we utilised a mixed-method approach encompassing codesign and a questionnaire. Several recommendations have been formulated to inform the creation of the channel and these recommendations may have wider applicability for other projects and initiatives.

Future work following our findings should focus on:
- Investigating the sustainability of the GoTriple crowdfunding channel, and assessing the relations between the user needs described above and the channel's sustainability (i.e. whether any of the user needs facilitates or hinders the sustainability of the channel).
- There is also a need to build a community of users through user engagement to support this sustainability. Concentrating on the participants of the projects piloted with the new crowdfunding channel will help us understand what works and what could be improved in the new solution.

## ACKNOWLEDGEMENT

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