PPOC21-06 L2586

Full project proposal 2021

Product and Process development Cellular Products

.

1 **Reference number:** PPOC 21-06; L-number: 2586

PPO-Cellular Products

☒ Anemia ☐ Bleeding & Hemostasis ☐ Cancer
☐ Immune Deficiency & Ageing ☐ Vascular Diseases & Inflammation

2 **Date:** 11 January 2021

3 **Applicants:** René Bekkers, Eva-Maria Merz, in collaboration with Blood Bank Communication

Division: Research

Department: Donor Medicine Research

E-mail (lead applicant): e.merz@sanquin.nl

Phone: 0612143879

4 **Project title: Learning to Donate (LEARN-DO)**

5 **PhD project?** ☒ Y ☐ N **Duration of project:** 48 months

6 **Expected start of project:** October 2021

7 **Contribution of the project to primary activities of Sanquin related to medical needs/solutions (1/4 page):**

This project is relevant for *donor recruitment,* enabling improved donor selection and retention. Due to increased longevity and migration, population profiles and consequently patient needs for blood products are changing. New donors, preferably with specific characteristics (e.g., male, ethnic minority background) have to be recruited to safeguard a sufficient and healthy blood and plasma supply. To develop targeted recruitment strategies, knowledge about factors that characterize *potential future* donors is key. Research from our department so far has been concerned with current, active or lapsed blood donors. No studies have been conducted with non-donors, while more knowledge about this group of potential future whole blood and apheresis donors is crucial to develop effective and targeted recruitment. Information about how potential donors 'learn' to donate, and which interventions are effective in recruiting them is scarce. Social relationships may play a major role in raising awareness and recruiting future blood donors. Until now, Sanquin does not structurally and systematically evaluate recruitment (and retention) efforts, while such evaluation is important to further development and improvement. Theory- and evidence-based recruitment strategies will yield more efficiency in donor management and more loyal donors, which in turn leads to lower costs and a more stable donor base.

8 **Background / significance (1/4 page):**

Social relations (e.g., with family members, teachers or friends) are critical to the onset and maintenance of different types of prosocial behaviour, e.g., charity giving or volunteer work [1,2]. Solicitations by others, observation of prosocial behaviour in others, information about need, and norms about prosocial behaviour all travel through social relations and may result in social spill over effects. Parents have a particularly strong influence on the prosociality of their children. Parental role-modeling and conversations about giving behaviour are strongly

related to adolescents' giving and volunteering [1-4]. Evidence about whether and how social relations shape blood donation behavior, however, is scarce. While previous research shows that one of the most effective recruitment strategies for blood donors is the donor-recruits-donor strategy [5], we do not know which specific relationships are producing this effect: romantic relations, parent-child relations, friends and/or colleagues? In addition, the specific mechanisms behind, e.g., learning, raising awareness, transmission, remain elusive. Knowledge about such relational mechanisms increases possibilities for targeting recruitment to specific groups. The findings on parental influence suggest an easily overlooked way for policymakers to nurture giving: start earlier, during childhood and adolescence, by guiding parents, teachers and/or other influential institutions in their role-modeling of, and conversations about giving.

9 **Research objectives (1/2 page):**

1. **Examine learning and inter/intragenerational transmission in blood donor behavior**
2. **Develop and test educational material about donation for children and adolescents**
3. **Interventions for blood donor recruitment by using social information (i.e., information about donor status and donation behaviour of others)**

1. Adolescents learn to give through role-modeling, e.g., from parents, peers and teachers, and talking about giving. This finding applies to both giving money to charity as well as giving time as volunteers [1-4]. We examine whether such learning mechanisms and intra/intergenerational transmission also apply to blood donation. The majority of current Sanquin donors (approximately 45%) is recruited by other donors [5] but it is unknown *who* these other donors are. We develop an algorithm to classify relationships between existing donors in the donor registry (eProgesa). We use survey data from donors and non-donors and potentially registry data from Statistics Netherlands to validate relationships between recruiting donors and newly recruited donors, and the underlying mechanisms.

2. Similar to evidence about adolescents (objective 1), there has been evidence that talking to and educating children about giving increases the probability that children give themselves. Sanquin has already developed information and education material about blood, donation, transfusion and the need for blood (products). In this project, we aim to further develop this education and information material for children and adolescents (i.e., with a serious game and by organizing an exhibit) and test its effects on knowledge and donation desirability. We intend to co-develop and evaluate this material in collaboration with the Science Museums for children (NEMO and/or Boerhaave).

3. In case people have no role models for blood donation in their personal environments, social information (i.e., knowing that esteemed persons are blood donors) is a potential nudge that helps recruit new donors. Large-scale field experiments have shown that social information works in charitable giving [6], voting [7,8] and volunteering [9]. These results suggest that a social information intervention may motivate potential blood donors to register. We will implement a large-scale field experiment on social information, inviting participants in the Giving in the Netherlands Panel Survey [10] to become blood donors by linking them to the Sanquin registration page. Thus, we examine whether potential donors are more likely to register as a blood donor when they receive information about positive blood donation experiences of role models.

10 **Expected results / applicability / innovative aspects (1/2 page):**

Results and applicability: Based on the results (objective 1), we will deliver a protocol describing key 'learning' mechanisms, such as role-modelling, intergenerational transmission between parents and children, talking about donations, and awareness of need by education. This protocol forms an evidence-based source for the blood bank to develop targeted recruitment strategies, tailored for specific groups of donors, depending on key determinants and mechanisms of motivation. Educational materials (objective 2) for primary and secondary

school children will be (further) developed, tested and evaluated to 'educate' the future donor generation. More specifically, we will develop material about blood donation and transfusion for primary and secondary school students within an exhibit in the Science museum (NEMO or Boerhaave) and an online serious game to evaluate impact of the material on knowledge about blood donation and donation desirability. The experiment (objective 3) will demonstrate whether and how social information can be used in recruitment efforts to increase donor intention and registration.

Innovative aspects: LEARN-DO can thoroughly change the scientific field and application of blood donor recruitment by using **novel insights** from philanthropy and prosocial behavior, e.g., charity giving and volunteer work. The **theoretical innovation** lies in applying and combining knowledge on behavior transmission mechanisms from psychology (e.g., social learning) and demography (e.g., inter/intragenerational transmission). The **methodological innovation** is that we designed a multi-method project, combining longitudinal surveys with donor registry data and large-scale field experiments. To **maximize societal impact** and **dissemination** we use community service-learning methods, in close collaboration with relevant stakeholders, such as the Dutch Science Museums NEMO and Boerhaave, and by developing a serious game.

11 **Methodology (1/2 page):**

1. **Examine learning and inter/intragenerational transmission in blood donor behaviour**

i) *Donor data:* We develop an algorithm for the Sanquin Donor registry (eProgesa) and map relationships among donors in three steps. First, we examine whether donors live at the same address and hence are in each other's social network. Second, by examining the similarity in age, we classify relationships between donors at the same address as parents and children, partners or peers. Assuming that people who live in the same household share and exchange knowledge, we quantify the occurrence of 'donor pairs' in the donor population by applying network analysis methods. Third, we validate the classifications for Donor InSight (DIS) [12] participants whose data can be linked to eProgesa.

ii) *Survey data:* We will use the Giving in the Netherlands Panel Study (GiNPS) [10], the Longitudinal Aging Study Amsterdam (LASA) [11] and DIS [12] to obtain information about the nature of relationships and information exchange between household members. All surveys provide information about own and network member's blood donor status, donor behavior, and individual communication about blood donation.

iii) *Statistics Netherlands Registries:* We will explore the feasibility of linking the Donor registry (eProgesa) to other registry data, e.g., from Statistics Netherlands (CBS) about households and family situation of current donors.

2. **Develop and test educational material about donation for children and adolescents**

Sanquin currently offers educational materials and guest lessons for pupils about various topics, mainly related to blood as a substance and transfusion. We will further develop these materials about blood *donation* specifically, targeted to younger pupils, and test its potential in increasing knowledge and the desirability for people to be a blood donor in an experimental setting. We will try to organize an exhibit in Science museum NEMO or Boerhaave and develop a serious game about blood donation and transfusion to test whether offering information in this way can increase knowledge and conversations about donation among future donors.

3. **Interventions for blood donor recruitment by using social information (i.e., information about donor status and donation behaviour of others)**

We propose a series of experiments in which we manipulate social information about donor status and donation behaviour of others, subsequently ask participants about their willingness to become blood donors and link them to Sanquin's registration page. We will use social information elements that have been demonstrated to effectively increase other forms of prosocial behaviour such as volunteering, and charitable giving. We focus on two groups of participants: registered survey respondents and students. Survey respondents tend to be

more prosocial persons in general, who are more likely to comply with requests. Students are an attractive group of candidate donors for the blood supply, because they can have a long-lasting donor career and they usually are healthy and fit.

12 **Collaborators:**

Vrije Universiteit Amsterdam, Community Service Learning
Sanquin Blood Bank Communication department (Marloes Metaal, responsible for Sanquin education)
NEMO Science Museum, Boerhaave Science Museum
IXA The knowledge transfer office of the Amsterdam universities and academic medical centers (UvA, HvA, VU and Amsterdam UMC)
Statistics Netherlands (CBS; prof. dr. Bart Bakker, prof. dr. Hans Schmeets)

13 **Detailed research plan (1 page):**

Objective 1. We will use descriptive statistics to get an overview of the whole donor panel, based on data registered in the donor registry (eProgesa), such as age, sex, and donation history. eProgesa contains information about ~ 1.5 million individuals who have ever been registered as a blood or plasma donor since 2005. We develop an algorithm classifying donor-with-donor relationships in three steps. First, we establish whether donors live at the same address. Second, we classify their relationships as partners, parents, children or peers (e.g., student homes) based on similarity in age, number of household members, and external zip code data. Third, we evaluate the classification of relationships with data from DIS, a cohort of originally 33.000 donors, by establishing what kinds of relationships respondents have with other donors. DIS includes information about whether donors know other donors in their network (partner, family members, friends or acquaintances), talk about blood donation with others, and whether they have ever encouraged others to become a donor. Using data from GiNPS[1] and LASA on the donation status (current, former and never blood donors) of respondents and their peers we can map social influences among partners, family members, and friends in donors and non-donors. We will explore the possibilities of linking the eProgesa registry to CBS data, such as the Social Statistics Files (SSB) [13], including information about individuals and households such as nationality, country of birth, year and month of birth, sex, marital status, position in household, partner (no partner, cohabitation, marriage). When linkage to the SSB is feasible, verification of the classification of relationships between donors obtained from the survey data will become possible.

Objective 2. We will (further) develop educational materials for online as well as offline learning through an exhibit about whole blood and plasma donation, the need for blood products, and the importance of blood group matching for transfusions for primary and secondary school pupils. Materials are illustrating that blood donors are community members *Among Us*.[2] We intend to collaborate with the Dutch science museums NEMO or Boerhaave to organize the exhibit. Before and after visiting the exhibit, students complete a brief online assignment through a smartphone app testing their knowledge about blood donation and reporting whether and with whom they have conversations about blood donation. We ask students to fill in a questionnaire *before* they visit the exhibit to test baseline knowledge about blood donation and *after* having visited to test knowledge retention. In addition, we add a serious game to the smartphone app *Donors are Among Us.* In this game the 'imposter' is the blood donor. 'Survival' within the game will depend on (acquired) knowledge about

[1] GiNPS is a Dutch biennial prospective survey about motivations to perform different types of prosocial behaviour among a representative Dutch sample (N ~ 1,000 per wave; 8 waves; age range 18-75). For the 2016 wave, our research group has developed a module about past and potential blood donation [14]. LASA is an on-going cohort study since 1991 on health and social networks of older adults in the Netherlands (N ~ 1,500 per wave; 8 waves; initial age range 55-84 years). For the 2016 wave, we have developed a retrospective module on blood donor life courses [15].

[2] *Among Us* https://www.bluestacks.com/apps/action/among-us-on-pc.html is an online game with the aim to demask the imposter. In our adaptation the imposter would be the blood donor.

blood donation and transfusion, and social interaction with other participants. Immediately after playing the game kids receive a short questionnaire in the app about satisfaction and two weeks later additional questions about background demographics and whether and to whom they have talked about blood donation.

Objective 3. We develop interventions based on research that successfully reported social information effects on other forms of prosocial behavior in field settings [6-9,16-20]. Because we anticipate that it is difficult to motivate individuals to register as blood donors merely by providing information about the behavior of others [9], we enhance the main treatment effect of social information by adding two previously validated instruments: 1) the use of visual images [19], and 2) emphasizing shared group membership [20]. The enhanced intervention visualizes that blood donors are regular community members, people around us, strangers we do not know, but literally connected to us with lifelines – veins. The main message is: "People around you care – that is why they give blood". First, we pilot the intervention in different modes, i.e., text, picture and brief video formats in an online setting among 1,550 crowdsourced participants[3] with observational measures of information seeking – anticipating that interest in blood donation and intention to register are higher in the social information condition, and further enhanced by the use of visual images (picture, video) of respected group members (donors of the same age and gender). The pilot experiments include manipulation and attention checks as well as measures of mediating variables (e.g., awareness of need). Second, we replicate the most effective mode from the pilot experiment in a refinement experiment testing the enhancements. Third, we take the most effective treatments from the pilot experiments to the field setting. We conduct the experiment among students, who are also given the opportunity to register as a blood donor (observed in eProgesa). Fourth, we replicate the experiment among participants in the GiNPS [10]. The availability of a wealth of socio-demographic and behavioural data in GiNPS allows us to identify segments of the Dutch population in which the intervention is more and less effective.

	Outcomes	**Design**	**Participants**
1) Pilot	Information consumption, donation intention	2 (social information) x 3 (text, picture, video)	n = 1,550 online participants
2) Pilot replication and refinement	Information consumption, donation intention	2 (social information) x 2 (role model) x 2 (shared group membership)	n = 1,300 online participants
3) Field experiment	Information consumption, donation intention, donor registration	2 (social information) x 2 (enhancement)	n = 440 students[4]
4) Survey experiment	Information consumption, donation intention, donor registration	2 (social information) x 2 (enhancement)	n = 1,300 online survey participants[5]

[3] Following guidelines for a 2x3 ANOVA with interactions [21] computations in G*Power show that this number suffices to detect an effect size f = .1 with 95% power.
[4] This number suffices to detect an effect size f = .2 with 95% power in a 2x2 ANOVA.
[5] This number suffices to detect an effect size f = .01 (R^2 increase) with 95% power testing for moderation with 3 predictors (main effect, moderator, and interaction) in a linear multiple regression.

14 **Timetable:**

Milestones	Planned (MM/YY)
EAR approval	03/22
(Online) education material	06/22
App prototype	08/22
Preparation exhibit	10/22
eProgesa analysis of donor households (empirical paper)	12/22
Knowledge intervention (exhibit) at museum (experimental setup)	03/23
Description of donor relationships (empirical paper)	06/23
Analysis exhibit experiment (empirical paper)	10/23
Intervention using social information (experimental setup)	05/24
Analysis student and survey respondents experiment (empirical paper)	02/25
Dissertation	09/25

15 **Possible impediments**

1. Data linkage with CBS may be realized late in the project period. We designed this study such that its success does not depend on cross-validation with CBS data. Yet, our collaborators prof. dr. Bart Bakker and prof. dr. Hans Schmeets from CBS have stated their interest and agreed to fully support this endeavour.
2. Compliance of the museums may be low. We will focus on current relations and collaborations with Boerhaave and NEMO that Sanquin already has and try to increase compliance through personal ties. Marloes Metaal, responsible for education at Sanquin Blood Bank, has agreed to closely collaborate with us on this project. There may be technical problems with the platform for the serious game; however, the project can also succeed without it.
3. Meta research has shown that the reproducibility of published interventions and their effect sizes in replications may be lower than desired [22]. To increase the chance that we use effective interventions we filter out low quality research based on risk factors for low reproducibility [23]. We select only those treatments from interventions that have been reproduced independently with transparency and open materials, preferably with large sample sizes [24].

16 **International developments with respect to the relevant research area and the international position of the applicant and his/her research group (1/2 page):**

While a considerable number of excellent studies on blood donor behavior have been conducted during the previous years (e.g., dissertation Piersma 2020 [25]), information about non-donors and their motivation and barriers lacks behind. The proposed project, at the department of **Donor Medicine Research (Donor Studies)**, internationally at the forefront of research about donor behavior and health, will specifically focus on determinants and mechanisms of first-time donations. Donor Studies has (jointly) coordinated several major EU-funded international projects, such as Donor Health Care (DoHeCa), developing an international curriculum on donor health and management, and TRANSfusion and transplantation: PrOtection and SElection of donors (TRANSPOSE). Close collaboration with the **VU Department of Philanthropy** provide additional theoretical and methodological expertise, and hence ensure high academic quality. Close collaboration with the Units Donor Affairs and Communication of Sanquin Blood Bank, enables and ensures implementation of research results into blood banking practice.
Eva-Maria Merz, PhD, leads the research line *Donor Behavior* at Sanquin. In 2015, she was awarded an Aspasia Talent Grant from the Netherlands Organization for Scientific Research (NWO) that enabled her to join the VU Sociology Department as Associate Professor. In 2018, Merz received an ERC starting grant on prosocial behavior and blood donation. Merz is

regularly invited by professional organizations and policymakers (e.g., at Finnish Red Cross) as expert speaker. She is a member of the European Blood Alliance Special Interest Group (EBA SIG) on Donor Studies, an Associate Scientific member of the Biomedical Excellence of Safer Transfusion (BEST) Collaborative, and secretary of the International Society of Blood Transfusion (ISBT) Working Party *Donors and Donations*.

René Bekkers, PhD, is full professor of Philanthropy at the Department of Sociology at the VU. He has published widely on philanthropy, volunteering and blood donation and is an expert on design of surveys and experiments. Since 2014, he is the director of the Center for Philanthropic Studies. He directs the Research Master Societal Resilience, in which students apply big data methods to societal issues. As an associate editor at Nonprofit & Voluntary Sector Quarterly (NVSQ), the leading journal in the field of philanthropic studies, he has reviewed hundreds of lab, online, field and natural experiments. Also, he has developed guidelines for the design of experiments, transparency in reporting, and evaluation standards for reviewers of experiments.

17 **Relevant papers (max 10, published or in press) of the applicant or his/her research group:**

Piersma, T.W., Bekkers, R., De Kort, W.L.A.M., & Merz, E.-M. (2021). Altruism in blood donation: Out of sight out of mind? Closing donation centers influences blood donor lapse. *Health & Place*, 67. https://doi.org/10.1016/j.healthplace.2020.102495

Ramondt, S., Zijlstra, M., Kerkhof, P., & Merz, E.-M. (2020). Barriers to blood donation on social media: an analysis of Facebook and Twitter posts. *Transfusion,* 60, 2294-2306. https://doi.org/10.1111/trf.15998

Masser, B.M., Ferguson, E., Merz, E.-M., & Williams, L.A. (2020). Beyond description – the predictive role of affect, memory, and context on the decision to donate or not donate blood. *Transfusion Medicine and Hemotherapy,* 47, 175-185. https://doi.org/10.1159/000501917

Piersma, T.W., Bekkers, R., De Kort, W.L.A.M., & Merz, E.-M. (2019). Blood donation across the life course: the influence of life events on donor lapse. *Journal of Health and Social Behavior, 60,* 257-272. https://doi.org/10.1177/0022146519849893

Piersma, T.W., & Merz, E.-M. (2019). (Non-)donor demographics, donation willingness, and the donor career. *Transfusion*, *59*, 1894-1896. https://doi.org/10.1111/trf.15268

Huis in 't Veld, E.M.J., De Kort, W., & Merz, E.-M. (2019). Determinants of blood donation willingness in the European Union: a cross-country perspective on perceived transfusion safety, concerns, and incentives. *Transfusion, 59,* 1273-1282. https://doi.org/10.1111/trf.15209

Van Teunenbroek, P.S.C. & Bekkers, R. (2019). Follow the crowd: Social information and crowdfunding donations in a large field experiment. *Journal of Behavioral Public Administration*, 3(1): 1-17. https://doi.org/10.30636/jbpa.31.87

De Wit, A. & Bekkers, R. (2017). Government support and charitable donations: A meta-analysis of the crowding-out hypothesis. *Journal of Public Administration & Theory*, 27(2): 301- 319. DOI: https://doi.org/10.1093/jopart/muw044

Van Teunenbroek, P.S.C., Bekkers, R., & Beersma, B. (2019). Look to others before youleap: Asystematic literature Review of social information effects on charitable giving. *Nonprofit & Voluntary Sector Quarterly*, 49(1): 53-73. https://doi.org/10.1177%2F0899764019869537

Piersma, T.W., Merz, E-M., Bekkers, R., De Kort, W., Hjalgrim, H., Andersen, S. & Ullum, H. (2019). Life events and donor lapse among blood donors in Denmark. *Vox Sanguinis*, 114(8): 795-807. https://doi.org/10.1111/vox.12842

18 **Approval of Medical Ethical Committee:** EAR approval for objectives 2 and 3.

19 **Number of inclusions in clinical study per year:** NA

20 **To be insured through Sanquin (Y/N):** N

21 **Approval for use of laboratory animals:** NA

22 **Number and kind of animals for each year:** NA

23 **Personnel involved (in full time equivalents):**

Year	Staff	PhD student(s)	Post doc(s)	Technician(s)
Year 1	0,1	1,0		
Year 2	0,1	1,0		
Year 3	0,1	1,0		
Year 4	0,1	1,0		

24 **Korte Nederlandstalige samenvatting voor leken (1/4 page,** is bedoeld voor VWS en evt. wetenschapsjournalist**)**

Bloeddonorschap leren: Donor-werft-donor en andere wervingsstrategieën onderzocht
Hoe effectief is het delen van informatie over het donorgedrag van andere bloeddonors (dat wil zeggen sociale informatie) met potentiële donors in het beïnvloeden van geefgedrag? Sociale informatie informeert mensen over het gedrag van anderen, wat gebruikt kan worden om registraties en donaties te verhogen. In deze studie onderzoeken we (1) hoeveel 'donorparen' (mensen die samenwonen en dus elkaars gedrag beïnvloeden) er in het huidige donorbestand zitten; (2) of informatie via educatiemateriaal in een wetenschapstentoonstelling en een serious game kennis en gesprekken over bloeddonatie bij kinderen kan verhogen; en (3) of het aanbieden van sociale informatie aan studenten en surveyrespondenten registratie als bloeddonor bevordert. Resultaten uit deze studie zullen communicatie met en werving en educatie van toekomstige donors verbeteren.

References:

1. Bekkers, R. (2007). Intergenerational transmission of volunteering. *Acta Sociologica*, 50(2), 99-114. DOI: 10.1177/0001699307077653
2. Ottoni-Wilhelm, M., Zhang, Y., Estell, D.B., & Perdue, NH. (2017). Raising charitable children: the effects of verbal socialization and role-modeling on children's giving. *Journal of Population Economics, 30(1),* 189-224. DOI: 10.1007/s00148-016-0604-1
3. Ottoni-Wilhelm, M., Estell, D.B., & Perdue, N.H. (2014). Role-modeling and conversations about giving in the socialization of adolescent charitable giving and volunteering. *Journal of Adolescence, 37(1),* 53-66. DOI: 10.1016/j.adolescence.2013.10.010
4. Wilhelm, M.O., Brown, E., Rooney, P.M., & Steinberg, R. (2008). The intergenerational transmission of generosity. *Journal of Public Economics, 92(10-11),* 2146-2156. DOI: 10.1016/j.jpubeco.2008.04.004
5. Piersma, T.W., & Klinkenberg, E.F. (2018). The relation between blood donor recruitment and donor diversity and loyalty in the Netherlands. *ISBT Science Series, 13,* 384–393. DOI: 10.1111/voxs.12460
6. Van Teunenbroek, P.S.C., & Bekkers, R. (2019). Follow the crowd: Social information and crowdfunding donations in a large field experiment. *Journal of Behavioral Public Administration,* 3(1), 1-17. DOI: 10.30636/jbpa.31.87
7. Gerber, A.S., & Rogers, T. (2009). Descriptive social norms and motivation to vote: Everybody's voting and so should you. *The Journal of Politics*, *71(1),* 178–191. DOI:10.1017/S0022381608090117
8. Matland, R.E., & Murray, G.A. (2014). Mobilization effects using mail: Social pressure, descriptive norms, and timing. *Political Research Quarterly*, 67(2), 304-319. DOI: 10.1177/1065912913499234
9. John, P., James, O., Moseley, A., Ryan, M., Richardson, L., & Stoker, G. (2019). The impact of peer, politician, and celebrity endorsements on volunteering: A field experiment with English students. *Journal of Nonprofit & Public Sector Marketing*, *31*(3), 328-346. DOI: 10.1080/10495142.2018.1526743
10. Bekkers, R., Boonstoppel, E., De Wit, A., & Van Teunenbroek, C. (2020). *Giving in the Netherlands Panel Survey – User Manual (version 2.14).* Center for Philanthropic Studies, Vrije Universiteit (VU) Amsterdam. https://osf.io/4unf9/ DOI: 10.17605/OSF.IO/4UNF9
11. Huisman, M., Poppelaars, J., Van der Horst, M., Beekman, A.T., Brug, J., Van Tilburg, T.G., & Deeg, D.J. (2011). Cohort profile. The Longitudinal Aging Study Amsterdam. *International Journal of Epidemiology, 40,* 868-876. DOI: 10.1093/ije/dyq219
12. Timmer, T.C., De Groot, R., Habets, K., Merz, E.-M., et al. (2019). Donor InSight: characteristics and representativeness of a Dutch cohort study on blood and plasma donors. *Vox Sanguinis, 114,* 117-128. DOI: 0.1111/vox.12731

13. Bakker, B.F.M., Van Rooijen, J., &, Van Toor, L. (2014). The system of social statistical datasets of Statistics Netherlands: An integral approach to the production of register-based social statistics. *Statistical Journal of the IAOS, 30(4),* 411-424. DOI: 10.3233/SJI-140803
14. Piersma, T.G., Merz, E.-M., & Bekkers, R. (2016). *Blood donation and life events. Module on blood donor behaviour for GiN.* Amsterdam: Sanquin Research and Vrije Universiteit, Philanthropic Studies.
15. Merz, E.-M., & Bekkers, R. (2015). *Vragen over SOHO donorschap en geefgedrag voor LASA.* [Module on donation of human substance and charity giving for LASA]. Amsterdam: Sanquin Research and Vrije Universiteit, Philanthropic Studies.
16. Van Teunenbroek, P.S.C., Bekkers, R., & Beersma, B. (2019). Look to others before you leap: A systematic literature review of social information effects on charitable giving. *Nonprofit & Voluntary Sector Quarterly*, *49(1),* 53-73. DOI: https://doi.org/10.1177%2F0899764019869537
17. Kropf, M., & Knack, S. (2003). Viewers like you: Community norms and contributions to public broadcasting. *Political Research Quarterly, 56(2),* 187-197. DOI: https://doi.org/10.1177%2F106591290305600207
18. Kraft-Todd, G., Yoeli, E., Bhanot, S., & Rand, D. (2015). Promoting cooperation in the field. *Current Opinion in Behavioral Sciences*, *3,* 96-101. https://doi.org/10.1016/j.cobeha.2015.02.006
19. Sanders, M., Reinstein, D. & Tupper, A. (2020). Worth 1000 words: The effect of social cues on a fundraising campaign in a government agency. A field experiment. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3728290
20. Highhouse, S., Thornbury, E. E., & Little, I. S. (2007). Social-identity functions of attraction to organizations. *Organizational Behavior and Human Decision Processes*, 103(1), 134-146. https://doi.org/10.1016/j.obhdp.2006.01.001
21. Perugini, M., Gallucci, M., & Costantini, G. (2018). A practical primer to power analysis for simple experimental designs. *International Review of Social Psychology*, 31(1). http://doi.org/10.5334/irsp.181
22. Camerer, C. F., Dreber, A., Holzmeister, F., Ho, T. H., Huber, J., Johannesson, M., ... & Wu, H. (2018). Evaluating the replicability of social science experiments in Nature and Science between 2010 and 2015. *Nature Human Behaviour, 2(9),* 637-644. https://doi.org/10.1038/s41562-018-0399-z
23. Bekkers, R. (2012). Risk factors for fraud and academic misconduct in the social sciences. https://renebekkers.wordpress.com/2012/11/29/risk-factors-for-fraud-and-academic-misconduct-in-the-social-sciences/
24. Protzko, J., et al. (2020). High replicability of newly-discovered social-behavioral findings is achievable. https://psyarxiv.com/n2a9x/
25. Piersma, T.W. (2020). *Donor Careers. A Dynamic Approach to Donating Blood.* Sanquin/VU: Academic Dissertation. https://www.publicatie-online.nl/files/1415/9125/6041/137542-Tjeerd-Piersma_PDF.pdf