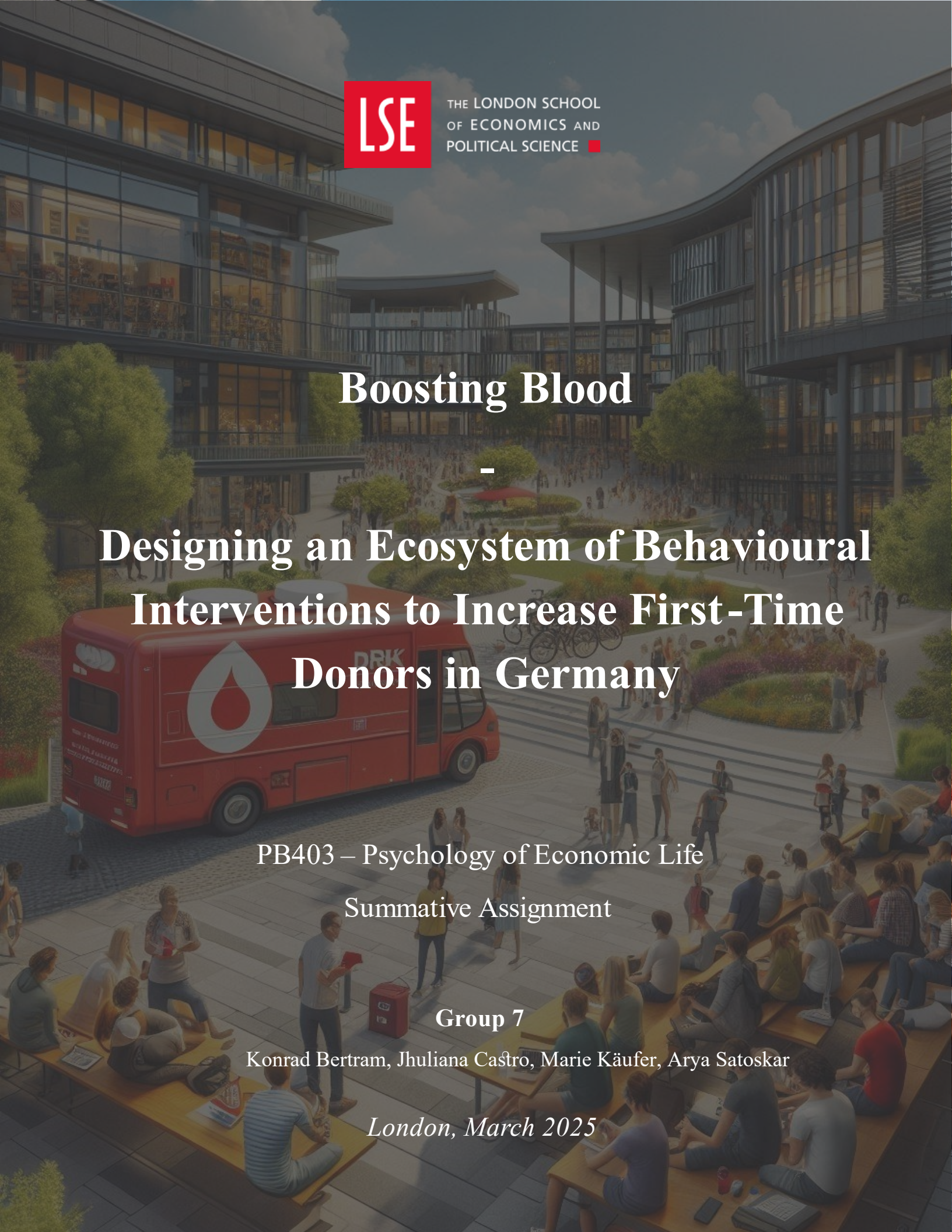

Boosting Blood

-

Designing an Ecosystem of Behavioural Interventions to Increase First-Time Donors in Germany

PB403 – Psychology of Economic Life

Summative Assignment

Group 7

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List of abbreviations:

AT: *Activity Theory*

FMCG: *Fast-moving-consumer-goods*

FPP: *First-Person Perspective*

GRC: *German Red cross*

HEI: *Higher education institutions*

IT: *Installation Theory*

SEBE: *Subjective Evidence-Based Ethnography*

1. Problem: Blood – A global crisis

The availability of blood for transfusions is a fundamental pillar of modern medicine, yet shortages remain a critical global health challenge. From life-saving emergency surgeries to cancer treatments and childbirth complications, hospitals worldwide face chronic shortages of blood donations that leave patients in critical danger (Saillant et al., 2022). The consequences of these shortages are dire - delayed surgeries, untreated injuries, and preventable deaths. With millions relying on transfusions each year, increasing blood donation rates is not just a medical necessity but a global health priority (World Health Organization (WHO), 2023). However, more than 60 countries reported blood donation levels of below 0.1%, significantly lower than the level required for a stable supply, which is at least 1% of a country's population donating regularly (Jacobs et al., 2024).

Whilst the scope of this project does not fully address the global issue, it aims to improve Germany's ageing donor population and dependence on monetary incentives. It evaluates policy shortcomings and suggests targeted reforms to support sustained, multi-generational donation and a more reliable blood supply.

1.1 Country Case Study

With 83.28 million people, Germany holds the largest population in the EU and plays a key role in European healthcare policy. Yet, with a yearly demand for 5.5 million blood donations, only 3.7 million are collected – a 33% gap - leading to delays in non-emergency surgeries (Vuletić et al., 2023; ZDF, 2024).

Unlike the other 26 EU member states, which often combine financial and non-financial benefits (see *Appendix A*), Germany's system relies primarily on small, centre-level monetary reimbursements and lacks a cohesive national strategy to support long-term donor retention (Vuletić et al., 2023). Whilst this may encourage short-term participation, it has not proven effective in building a stable donor base. Alternative incentives include French donors receiving paid time off and free public transport, whilst frequent Croatian donors benefit from supplementary health insurance.

Moreover, monetary incentives can impact blood safety, which relies on donor transparency. Research suggest that they increase the risk of compromised donations, as paid

donors may prioritise financial gain over honesty. In contrast, altruistic voluntary donors are typically more transparent, reducing contamination risks (Titmuss, 1970). Prioritising non-monetary incentives could boost donor retention whilst enhancing the safety and reliability of the blood supply.

1.2 Generational Gap in Blood Donation in Germany

Germany's donor pool is ageing, with a median donor age of 45.9 years, endangering the maintenance of a sustainable blood supply. (Vuletić et al., 2023). This average donor age in Germany is among the highest in the EU, raising concerns about the long-term sustainability of blood donation. Besides, the country is facing a growing generational divide, as baby boomers, who have formed the backbone of the system for decades, are now ageing out of eligibility to donate (DRK, 2024; WDR, 2024). As this generation increasingly becomes recipients rather than donors, the lack of engagement from Gen X, Millennials, and Gen Z threatens to widen the gap even further. Despite making up the majority of the population, they donate less frequently and less consistently (DRK, 2024), putting long-term supply at risk.

Research suggests that early engagement fosters lifelong donation habits, yet recruitment strategies fail to effectively reach younger demographics (Bloch et al., 2017). Without immediate action to close this generational gap, who will sustain the blood supply?

1.3 Existing behavioural interventions

Recent findings (Greffin et al., 2021) based on a sample of 2,531 participants**,** challenge the reliance on monetary incentives for blood donations. Whilst employing a quasi-experimental approach across Germany, it was found that altruism, social responsibility, charity, and the anticipation of personal need are stronger motivators for long-term donation than financial incentives. The study argues that whilst monetary compensation may sustain short-term participation, it is not sufficient for long-term donor retention. Instead, incentives such as health screenings, donor cards, and paid time off work may prove more effective. Beyond incentives, reducing barriers, such as addressing fears through education and improving convenience, remains crucial to fostering a stable and self-sufficient donor pool.

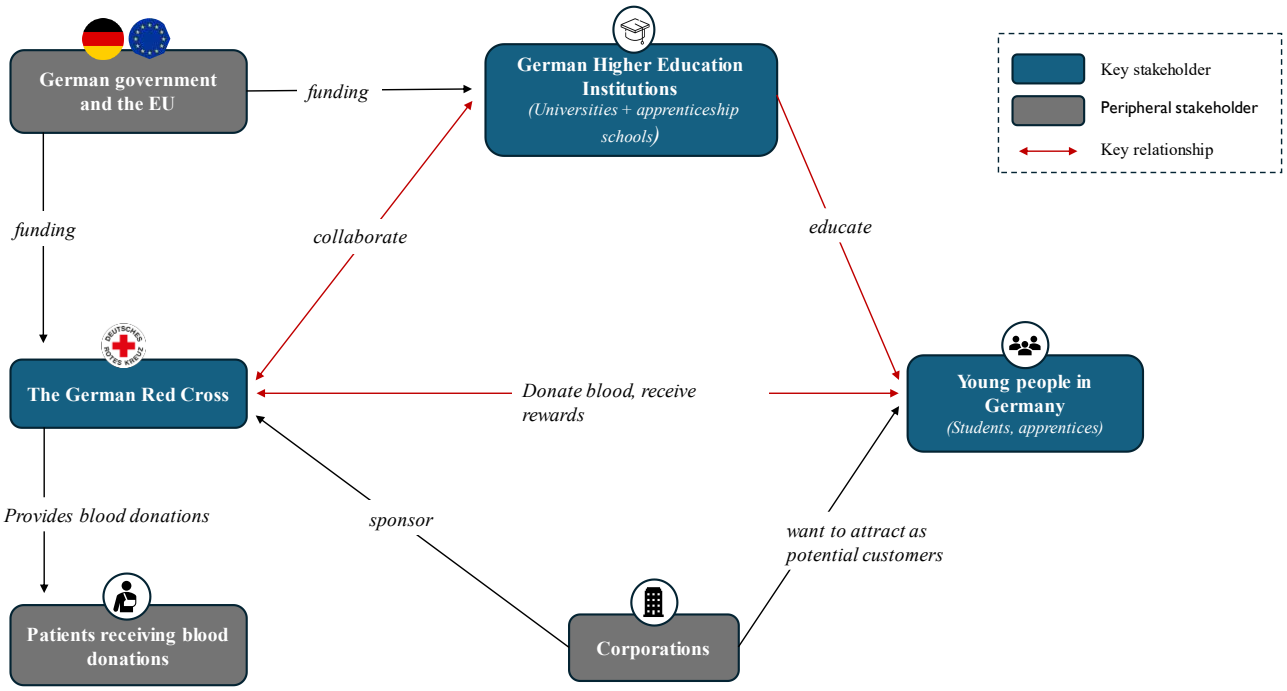
Global research has suggested effective blood donation campaigns incorporate behavioural strategies such as motivation (Lacetera & Macis, 2010), barrier reduction (Bednall & Bove,

2011), behavioural commitment (Godin et al., 2005), social leverage (Cialdini et al., 1990), and technology (Pilgrim & Bohnet-Joschko, 2022). By applying these evidence-based strategies, blood donation organisations can move beyond single-factor approaches. Research shows that no universal standard exists for blood donation incentives. Instead, success relies on context-specific guidelines that accommodate "local cultural and institutional factors" (Graf et al., 2024, p. 1). Instead of relying on isolated interventions, this project aims to integrate multiple strategies that can improve donor experiences, remove barriers, and drive long-term commitment.

2. Stakeholder Mapping

To increase blood donations from younger generations in Germany, we propose an ecosystem of interventions aimed at students in Higher Education Institutions (HEI), involving the German Red Cross, HEI's and students as key stakeholders. Core interventions will include the collection of blood donations on campus, combined with educational interventions. Additional stakeholders include German and EU governments as funding institutions, patients as beneficiaries and sponsoring corporations with an interest to acquire younger customers. Whilst Chapter 4 will provide an in-detail explanation of our interventions, this chapter will focus on analysing the key stakeholders directly involved in the intervention's implementation. A more detailed analysis of the broader stakeholder network can be found in the *Appendix B*, with chapter 6 also discussing stakeholder related limitations.

Figure 1



Stakeholder Map

2.1 The German Red Cross

The German Red Cross (ge: Deutsches Rotes Kreuz) is the German branch of the international Red Cross charity and one of the biggest welfare organisations in Germany. It provides humanitarian aid in crises and emergencies in Germany as well as abroad and is responsible for providing nationwide supply of live-saving blood donations for seriously ill and injured people, collected by five collaborating blood donation services. The organisation provides around 75% of needed blood donations in Germany and therefore constitutes a fundamental part of the German healthcare system (DRK-Blutspendedienste, 2025).

They represent a key stakeholder in this project, as they would be responsible for providing the staff, vans and necessary equipment for the collection of blood donations on campus. The project would support the work of the German Red Cross as it would simultaneously secure an increased number of blood donations for patients in need and reduce the average age of first-time blood donors, thereby ensuring a more sustainable blood supply. Additionally, as the intervention would increase students' awareness of the German Red Cross, the latter could potentially leverage this for recruiting new employees.

2.2 German Higher Education Institutions (HEI)

Besides permission from the local authorities, the participating HEI's permission is needed to collect blood donations on campus. As support for blood donation puts institutions in a favourable light and boosts their social responsibility, the project is in line with the respective HEI's goals. Being education institutions, those locations are also a great setting for educational interventions promoting blood donations and reaching young people. Considering that their participation in blood donation initiatives improves their image, it is likely that the HEI's will be eager to collaborate and provide the rooms and spaces for educational interventions as well as the blood collection process itself.

2.3 Corporations

Several well-known FMCG sector companies with a strong presence on the German market struggle to reach younger consumers. Some examples include Lindt & Sprüngli (Rundschau, 2012), Seeberger (Kausch, 2024) and Werther's Original (Gutoskey, 2022), which can be attributed to their nostalgic branding or premium pricing. These companies have a high interest in acquiring younger generations of consumers to secure a long-term increase in revenue, which is in line with the need to increase blood donations from younger generations to ensure a sustainable blood supply in Germany.

Sponsoring incentives for campus blood donation vans gives them the opportunity to reach younger target groups from 18 to 30, rather than 40+ or even 50+. Additionally, their sponsoring would increase brand awareness among students and strengthen participating companies' corporate social responsibility portfolios.

2.4 Students at German HEI's

As potential blood donors, students represent key stakeholders in our intervention. Considering the generational blood donation gap in Germany (WDR, 2024), it is crucial to teach younger people about the importance of blood donations and encourage them to become donors. This approach would establish a younger cohort of blood donors capable of addressing the gaps that emerge as older generations, particularly Baby Boomers, become unable to contribute. Recognising students as pivotal stakeholders in our blood donation initiative, the following chapter offers a comprehensive analysis of their motivations, employing diverse methodologies.

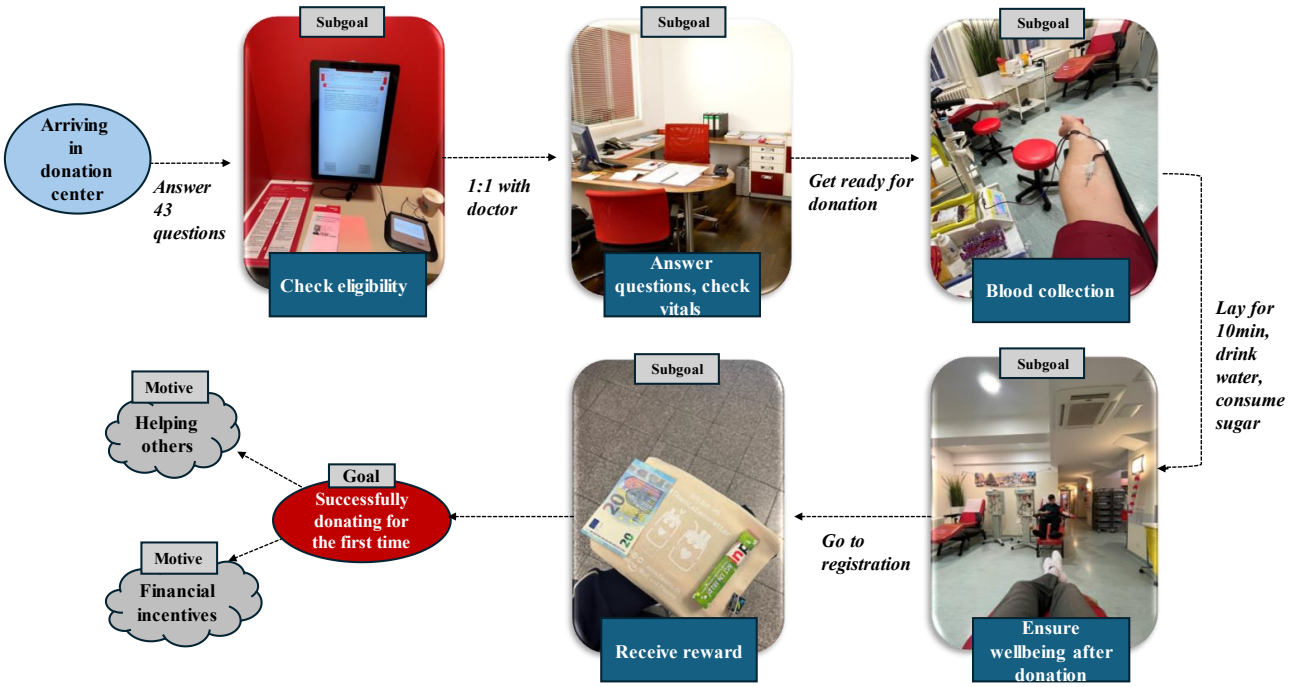
3. Analysis: Understanding Donor Motivations

Given the alarming decline in blood donations, it is essential to identify the critical pain points where interventions are needed (Vuletić et al., 2023). These pain points represent obstacles in the donation process that can be addressed strategically (Lahlou, 2022). To understand the main challenges faced by first-time blood donors in Germany, we first mimicked the SEBE technique (Lahlou et al., 2015) and used the Activity Theory Version from Lahlou (2024). Furthermore, we designed a survey to explore potential donors' perceptions, motivations for donating blood, and perceived obstacles, and to validate our findings before situating them within existing literature.

3.1 Mimicking SEBE (Subjective Evidence-Based Ethnography)

To understand the steps during the donation process, we mimicked the Subjective Evidence-Based Ethnography (SEBE) method on a smaller scale. One of our group members followed the process of becoming a first-time donor by taking First-Person Perspective (FPP) photos to learn how the activity unfolds in real life in terms of subgoals, goals, and motives (Lahlou et al., 2015). These photos were taken at the 'points of delivery' of actions (Lahlou, 2022). Consent from the people present at the centre was obtained, ensuring ethical research practices (Wiles et al., 2008). Figure 2 illustrates the activity trajectory from the point of view of an average first-time donor in Germany.

Figure 2

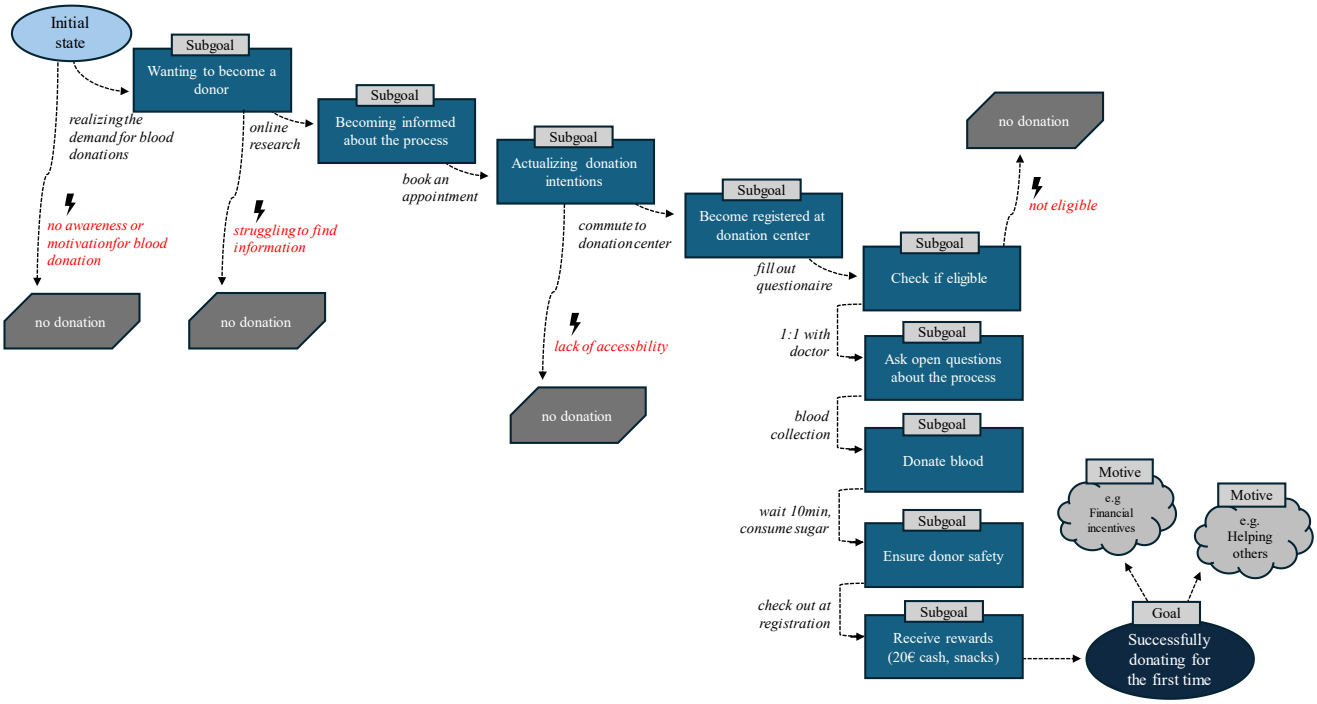


SEBE-based Activity Trajectory for a first-time donor in Germany

3.2 Activity Theory

Behavioural designs often fail to drive change because they focus on isolated actions instead of the broader system of actions, goals and motives (Lahlou, 2024). Drawing on (Leontiev, 1972) and Rubinstein (1940), individuals interact with environmental systems in daily life, making it crucial to analyse actions in relation to goals, motivations, and context. Hence, we contextualise our findings from the imitation of SEBE technique, to find the 'pain points' by applying Lahlou's (2024) Activity Theory Framework, tracing the actor's steps at the 'point of delivery' throughout the process (Lahlou, 2022). Figure 3 illustrates where the identified pain points are situated in the blood donation process.

Figure 3



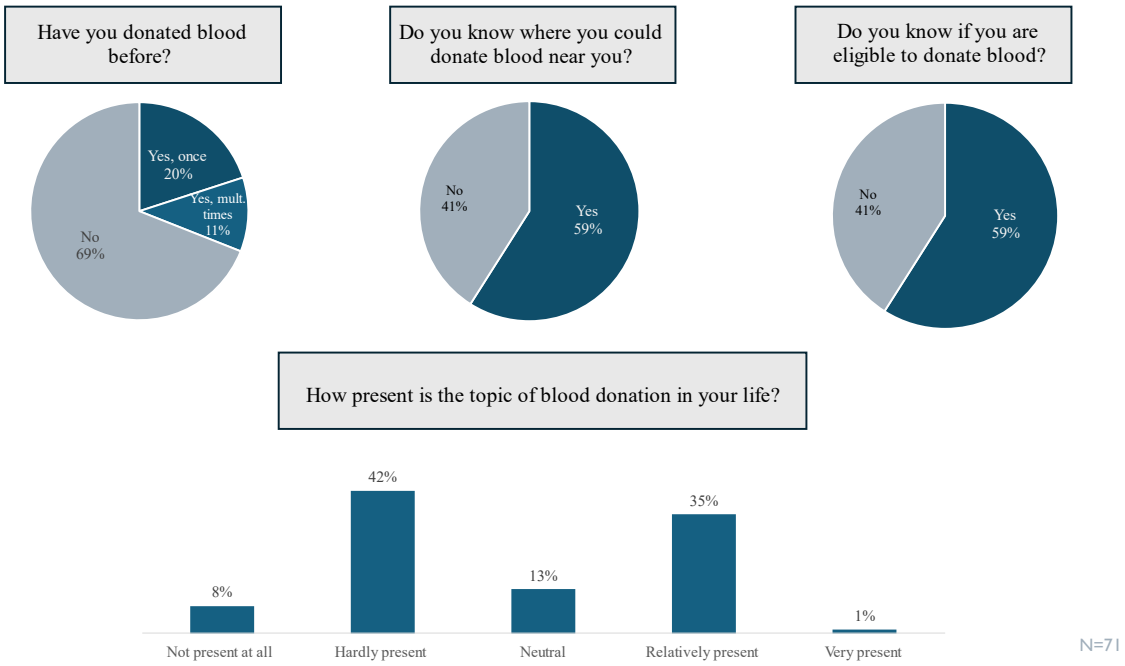
Activity Trajectory with potential pain points for a first-time donor in Germany

3.3 Survey Results

Lastly, a three-part survey was conducted using Qualtrics. It was circulated online among German students and collected data from 71 participants. The results revealed that 69% of participants had never donated blood. Among the reasons for not donating blood, respondents most frequently named a lack of awareness of how and where to donate (29%), followed by a fear of needles (25%), a lack of time (22%) and a fear of possible side effects of blood donation (20%).

For 42%, the subject of blood donation was ‘hardly present’ in their everyday experiences. Furthermore, despite 59% of students knowing where they could donate blood and if they were eligible to donate or not, 69% had still not donated before.

Figure 4

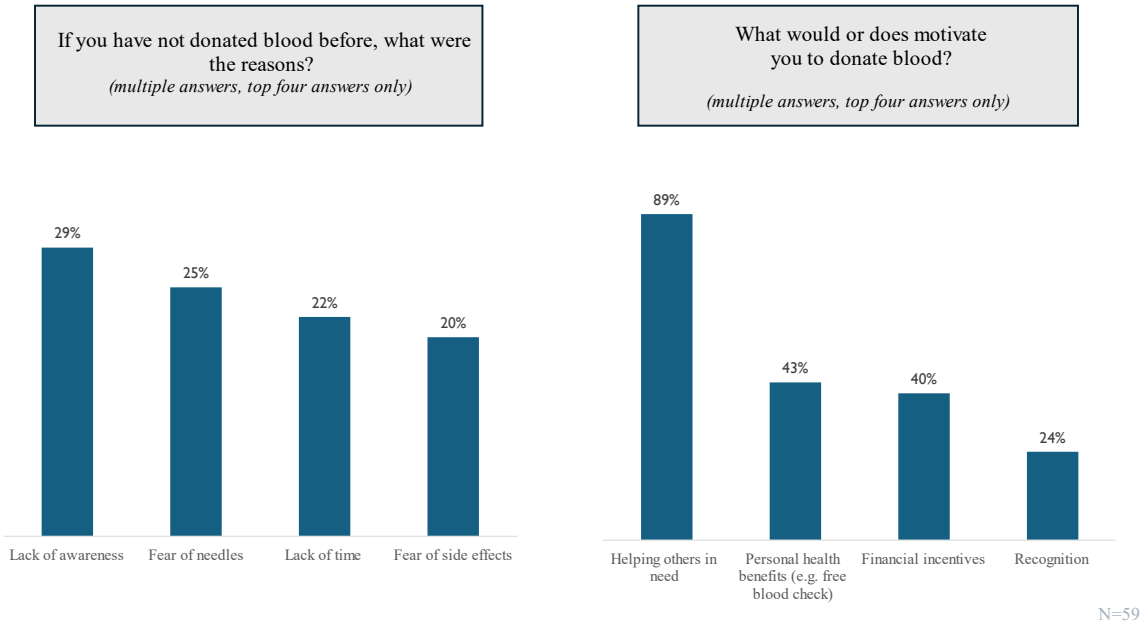


Survey Results Part I

On the other hand, as motivation for donating blood, a large majority of respondents (89%) named helping others in need. 43% reported to be motivated by personal health benefits, like a free blood check for example, followed by 40% who are motivated by financial benefits. Recognition also played a role, with 24% indicating that appropriate acknowledgment would encourage them to donate. Furthermore, 19% mentioned material incentives, and 17% cited a sense of community as motivating factor.

Overall, the survey results align well with the motivations and fears identified by Gillespie and Hillyer (2002) and Romero-Domínguez et al. (2022). The survey brought to light new pain points and validated our findings from the imitation of SEBE technique and Activity Theory analysis, concluding that, although students intend to donate blood, they lack the *motivation*, *accessibility* and *knowledge* to follow through since the process is very time-consuming, led by misconception and not embedded in the daily lives of first-time donors.

Figure 5



Survey Results Part II

3.4 Insights and Takeaways

Through the imitation of the SEBE technique, Activity Theory and the survey, we aimed to understand the underlying motivations of the existing potential donors in Germany. We wanted to identify the pain points generated around the topic and during the process of donating blood.

The survey results show the first pain point, 'Lack of knowledge', in alignment with the literature (Romero-Domínguez et al., 2022). The lack of discussion and education fosters myths, fears, and other misconceptions about the topic and further reduces the chances of young students donating blood. 'Lack of Knowledge' is highlighted through the open text answer in the survey, as one of the participants states, *"If blood donation was something we heard about regularly, like recycling or exercising, more people would probably do it."* (see *Appendix E*).

The survey results emphasise the second pain point, 'Lack of Motivation.' Although most participants are aware of their eligibility to donate and know where to do so, 68% have not yet taken the step to actually make a donation. This gap is particularly striking given that the desire

to ‘help others in need’ remains the primary motivation for donating blood, yet many individuals have not acted on this intention.

Our final pain point, identified through Activity Theory and the SEBE technique, is accessibility. Whilst young students in Germany intend to donate blood (as indicated by the survey), the process is lengthy and disruptive, as revealed through SEBE imitation and reflected in the literature (Romero-Domínguez et al., 2022). Since donation is not well integrated into their routines, it is a hassle for students to visit centres, particularly first-time donors for whom the process is even more time-consuming. As one participant noted, “*I always think about donating, but there’s just nowhere convenient to go, so I never actually do it*.” (*Appendix E*). Thus, greater integration into daily life could facilitate the transition from intention to action

4. Our approach

Our multi-method analysis in the previous section has identified three main pain points of the blood donation process in Germany. Leveraging the framework of Installation Theory (Lahlou, 2017), this section will outline our attempt to tackle the identified issues through a holistic approach: An ecosystem of behavioural interventions.

4.1 Leveraging Installation Theory

Installation Theory (Lahlou, 2017) posits that human behaviour is shaped by three interconnected layers: embodied competences (individual skills and dispositions), affordances of the physical environment, and social regulation (norms and institutions). These layers create a structured behavioural space that constrains and enables actions, making behaviour both predictable and resistant to change. By analysing these installations, researchers can better understand how behaviours emerge and persist, offering insights for interventions aimed at modifying habitual actions (Lahlou, 2017).

4.2 Ecosystem of behavioural interventions

Building on the coordinating function of the Red Cross in Germany, we are proposing the introduction of mobile units that are capable of rolling out blood drives weeks across campuses and apprenticeship schools, i.e. places where young people are prevalent. These mobile units would set up an ecosystem of ten different interventions for a week that collectively form a

"tunnel of activity" (Lahlou, 2023, p.3), that channels our target population towards donating blood.

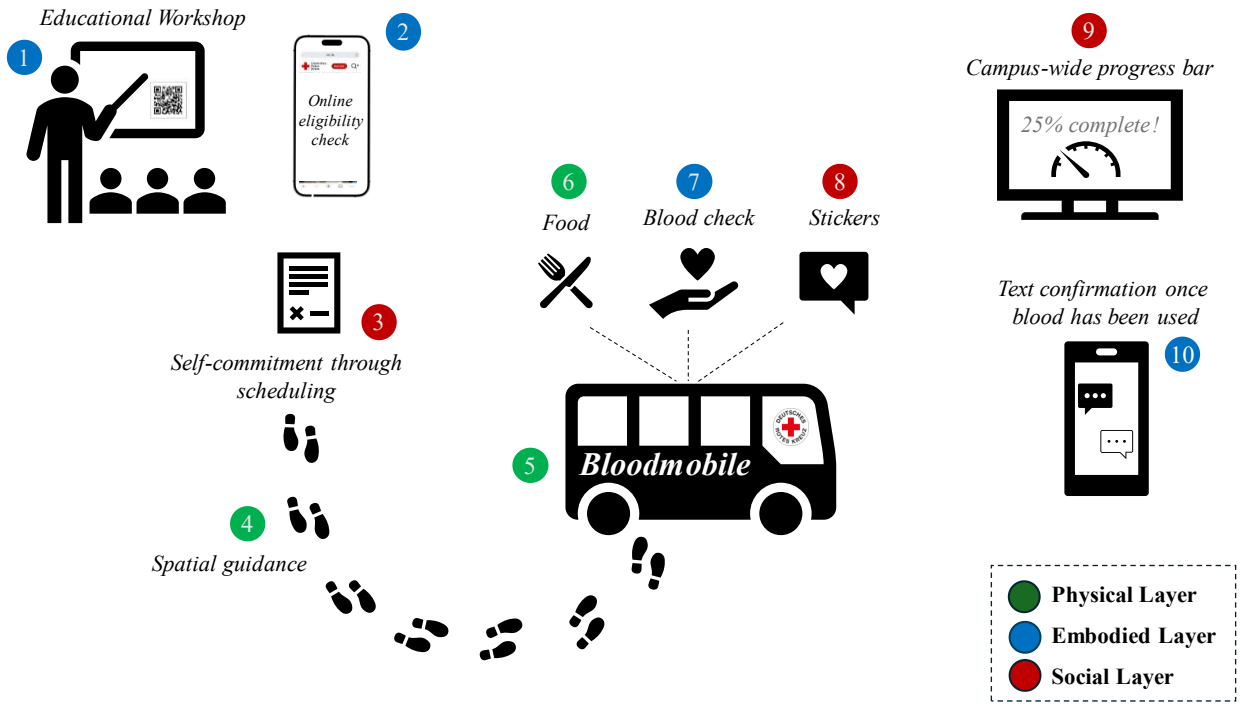
Our approach spans all layers of Installation Theory (physical, social, embodied) and can be procedurally divided into three consecutive stages. The following figures 6 and 7 provide an overview of our holistic approach, with a detailed description and illustration of our interventions following later in this chapter.

Figure 6

Pain Point	Intervention	Layer of IT	Stage of process
Lack of knowledge	Educational workshop	*Embodied*	*Stage I: Creating optimal conditions*
Lack of knowledge	Eligibility check	*Embodied*	
Lack of motivation	Self-commitment /scheduling	*Social / Embodied*	
Accessibility	Wayfinding	*Physical*	*Stage 2: Converting motivation into donations*
Accessibility	Bloodmobile	*Physical*	
Lack of motivation	Food	*Physical*	
Lack of motivation	Blood-check	*Embodied*	
Lack of motivation	Sticker with memes	*Social*	
Lack of motivation	Progress monitoring / shared goal	*Social*	*Stage 3: Keeping momentum high*
Lack of motivation	Feedback SMS once blood has been used	*Embodied/ Social*	

Overview of interventions, corresponding pain points and procedural stages

Figure 7



Ecosystem of interventions

Stage I: Creating optimal conditions to foster donor motivation (Interventions 1- 3)

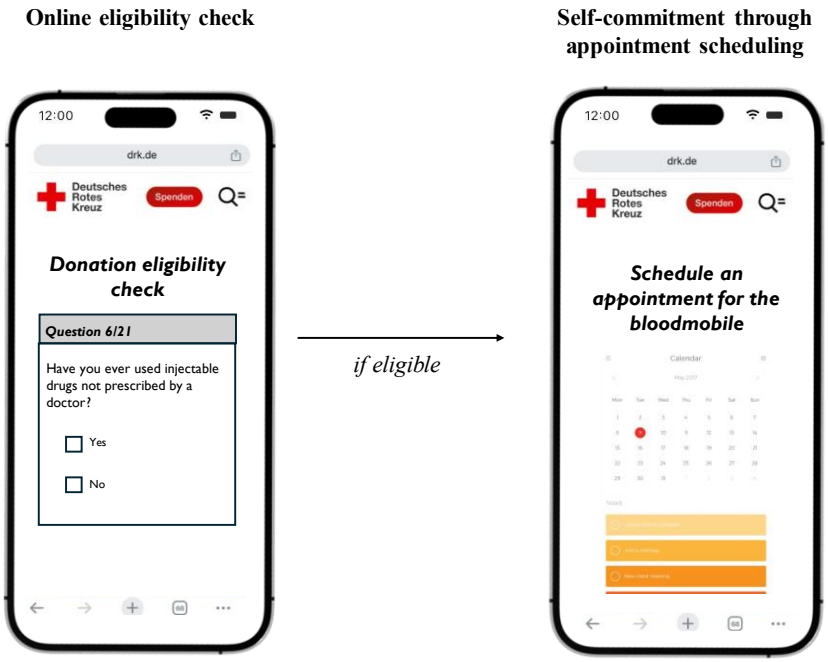
Our holistic approach lines out a clear journey for potential donors. Starting with an educational 10–15-minute workshop that will be embedded in a compulsory module in order to ensure high participation rates, the workshop will present basic knowledge surrounding blood donation and clear up common misperceptions and fears. France et al. (2011) demonstrated the effectiveness of multimedia education interventions in the US in achieving "reductions in anxiety, more positive changes in attitude, and greater increases in donation confidence and intentions" (France et. al., 2011, p.1). With our survey and existing literature demonstrating that a lack of awareness posits the main reason for not donating blood (29%), the workshop not only educates but also involves potential donors filling out a quick online eligibility check (~3min) that indicates if becoming a donor is ruled out through e.g. preexisting conditions. If participants prove both eligible and willing to donate, they are encouraged to complete a self-commitment pledge through scheduling their appointment for the on-campus donation van. The efficacy of self-commitment techniques in behaviour change has been widely demonstrated (e.g. Baca-

Motes et al., 2013). Our interventions in Stage I primarily tackle the identified pain points ‘lack of awareness’ and ‘lack of motivation’ through educating, testing eligibility and committing participants to a donation.

Figure 8

Educational information session

Figure 9



Interplay of Intervention 1-3 (workshop, eligibility test, appointment scheduling)

Stage II: Converting motivation into donations (Interventions 4 - 8)

Spatial guidance in the form of an effective wayfinding system including floor graphics and signs acts as a physical installation to guide people from key institutional points (e.g. library, cafeteria) to the mobile donation van. Wayfinding has been shown to be effective in guiding how people move in public spaces, especially in healthcare-settings (Devlin, 2014)

At the heart of our ecosystem sits a mobile blood donation unit. So-called 'bloodmobiles' have been used in the US since the 1950's and have proven effective in increasing donor levels, especially in post-disaster situations (Rezaei Kallaj et al., 2023), regions lacking the infrastructure for permanent donation centres (Sachdev et al., 2024) or in general for reducing friction in the donation process and therefore increasing donation rates. A bloodmobile in Germany requires 4-5 people to be operational, including a medical supervisor, a nursing and collection team, an administrative role and a driver who may also assist onsite (DRK, 2024). The majority of studies in this realm posits that the "most crucial factor affecting the efficacy of bloodmobiles is their location selection" (Imamoglu et al., 2024, p.1). Generally, locations with high pedestrian traffic, easy access, high visibility and rather affluent socioeconomic traffic are thought to work well (Osorio et al., 2018). Based on these findings, selecting universities and apprenticeship schools seems promising as locations for the bloodmobile since they enable maximal proximity to students' everyday life. With lack of accessibility being among the main reasons for people not donating (see survey results), the placement of the bloodmobile on campus directly counters this issue. The German Red Cross already utilises bloodmobiles, predominantly in rural regions (DRK, 2024). However, three success factors seem to be missing upon analysing their current mode of operation: Firstly, embedding the bloodmobile in a wholistic intervention that raises overall efficacy and boosts participation and secondly, systematically rolling out mobile blood donation campaigns across key locations. Thirdly, reducing participation barriers by integrating bloodmobiles into everyday life, such as setting them up on campus.

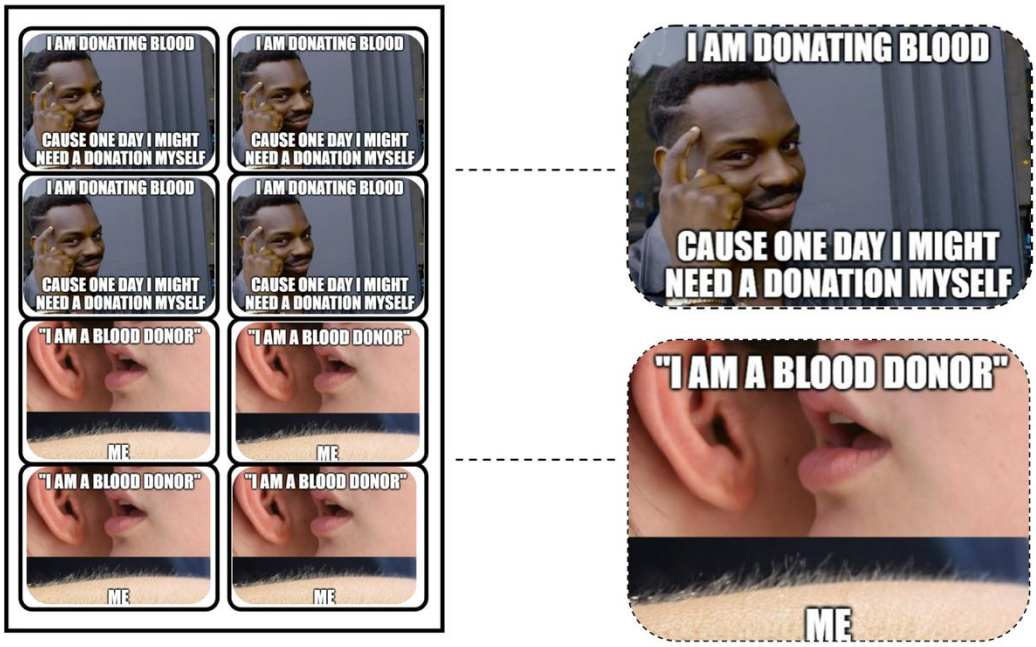
Regarding the onsite incentives for donating, we opted for three key psychological levers to increase donation participation: Food (physical layer), free blood check results (embodied layer) and donor stickers (social layer). These incentives aim to increase motivation for donation by addressing all three layers of Installation Theory.

The availability of food is crucial in a blood donation environment as it is medically necessary to consume sugary foods after donating blood to replenish blood sugar levels and prevent light-headedness, fatigue or fainting (Hoogerwerf et al., 2018). In order to keep costs for this as low as possible and create synergies, we are opting for a model where the onsite food available is sponsored by well-known FMCG companies from German speaking countries with a high interest in attracting younger consumer segments (see stakeholder analysis).

Besides the food, free blood checks are already integral part of the existing incentive structure in the German blood donation system with participants being actively contacted if blood tests flagged some serious infections or health conditions (Graf et. al. 2024). With blood testing for e.g. HIV, Hepatitis or Leukemia being a standard part of the post-donation procedure, the actively emphasizing the incentive of a free blood check for donation participants does not involve any additional costs for the Red Cross (Blutspendedienst, 2025).

Regarding the social layer of incentives, studies examining the role of social recognition in blood donation found that acknowledgment and appreciation can significantly impact donors' motivation, leading to higher participation and retention (Ferguson & Lawrence, 2016). Hence, the incentive package would also include stickers with humorous elements. Stickers function as a commitment device by leveraging cognitive dissonance, encouraging individuals to align their actions with their attitudes, which can increase the likelihood of repeat blood donation—a concept supported by Baca-Motes et al. (2023). Humorous communication in the form of memes has been shown to be a suitable tool in effectively capturing attention, generating interest, and driving action among Generation Z consumers, i.e. people born between 1997 and 2012. (Fernandez et al., 2024).

Figure 10



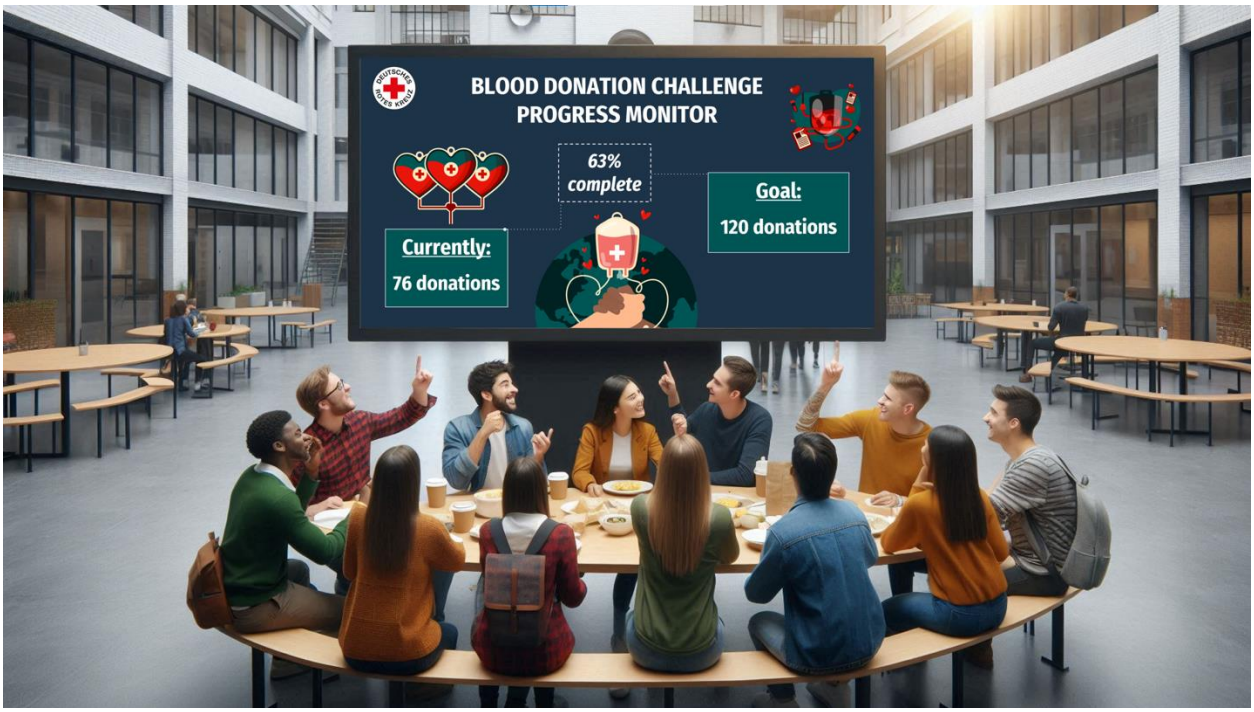
Stickers with humorous communication for signalling

Stage III: Keeping momentum high (Intervention 9 & 10)

As existing literature suggests that such temporally and geographically bound campaigns can be even more effective if they include a shared goal (Schröder, 2024), we will accompany the one-week blood drive with a HEI wide progress tracker that would be updated daily. This approach fosters a sense of positive interdependence and dynamic social norms, where members perceive that their success is linked to the group's collective efforts (Sparkman et al., 2021). Such a structure encourages collaboration and mutual support, leading to improved outcomes and a strengthened group identity (Zhang & Chiu, 2012). Existing infrastructure in the form of info-screens could be used with ease to implement this social measure. In order to increase the perceived efficacy of donors, a last intervention would consist of donors receiving a text message, once their blood has been used to help a patient. These feedback mechanisms serve multiple purposes: they enhance donors' sense of fulfilment, i.e. the 'warm glow effect' by reinforcing perceived self-efficacy (Ferguson et al., 2012), increase transparency in blood donation processes (Klinkenberg et al., 2019), and encourage repeat donations by providing

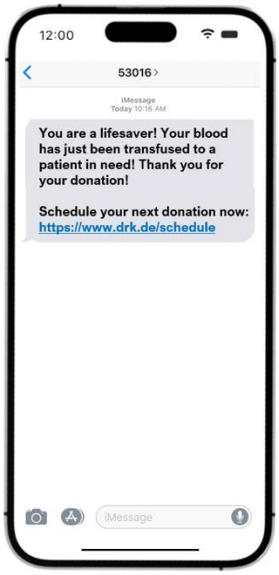
donors with a direct sense of impact and a chance to schedule the next donation, thus improving accessibility (Glynn et al., 2006; Piliavin & Callero, 1991).

Figure 11



Blood challenge progress tracker

Figure 12



Text message with blood usage confirmation and next scheduling

5. Feasibility analysis and validation

In order to assess the feasibility of our approach, we used informal expert feedback and our initial survey to gather insights into the hypothetical acceptance of our interventions.

5.1 Potential bottlenecks

We identified two potential bottlenecks that could hinder the implementation of our ecosystem of interventions: HEI's willingness to cooperate and FMCG companies' willingness to sponsor. Thus, we set out to validate that our approach would not be hindered by either of these bottlenecks.

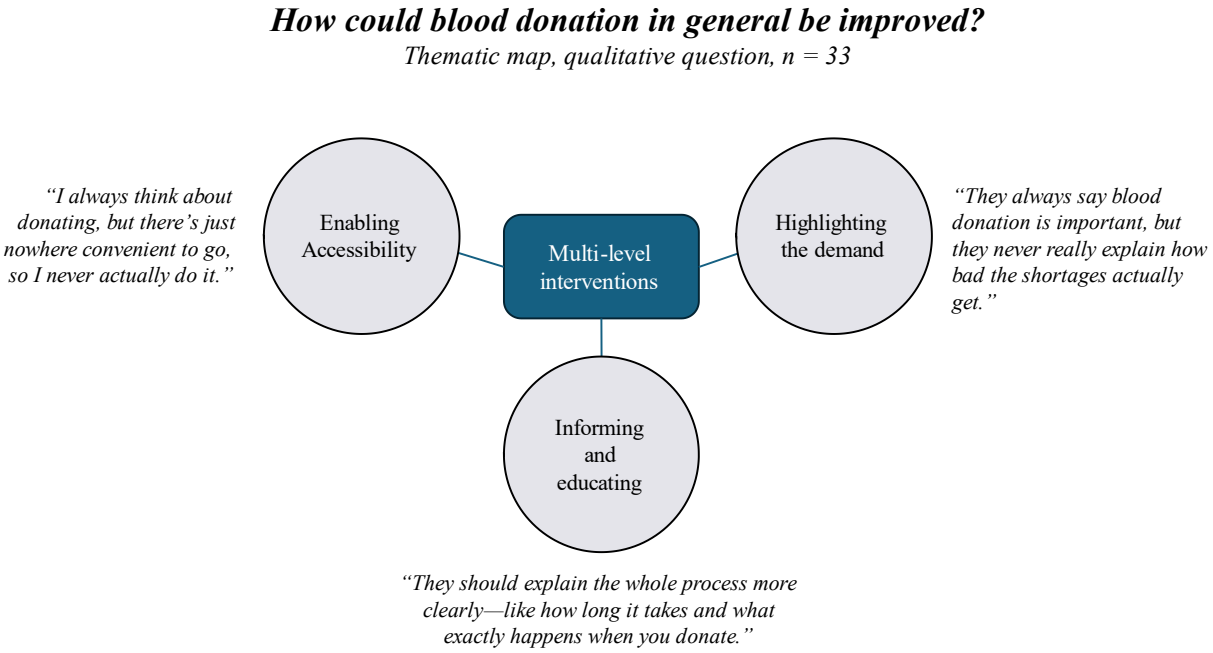
Speaking to the president of a South German University we were assured that HEI do regularly provide their campuses for charitable actions, e.g. stem-cell donation registration (DKMS, 2025) or clothing donation (Goethe-Universität, 2025). Therefore, the cooperation of HEI with our approach appears feasible.

Regarding the willingness of FMCG companies to sponsor certain incentives for the donation, we found evidence where such companies sponsor comparable initiatives, e.g. the company Edeka sponsoring a stem-cell registration initiative through providing a limited-edition smoothie (FC St. Pauli, 2023) or Coca Cola sponsoring social initiatives of the Red Cross (DRK 2025). Considering the comparatively low cost and high benefits of sponsoring such clearly charitable activity, the great branding opportunity of sponsoring blood donation is likely to be endorsed by FMCG companies, even though we were not able to validate this with company representatives directly.

5.2 Qualitative Insights

As purely quantitative questions risk oversimplifying the issue at hand and overlooking layers of meaning (Lehmann et al., 2019), we also prompted participants to share their thoughts on improvements of blood donation using an open text box in the survey. Thematic analysis (Attride-Stirling, 2001) revealed three strong underlying themes that serve as evidence for our intervention successfully targeting the main issues surrounding current donation system.

Figure 13



Dominating themes in the open text answers

6. Discussion

Acknowledging the complexity of increasing blood donors, this section will summarise the main findings, discuss potential limitations of our approach and provide an outlook for future research.

6.1 Overall findings

To increase blood donations and address the generational gap between blood donors in Germany, we developed an ecosystem of interventions targeted at HEI students. Using Activity Theory (Lahlou, 2024) and Installation Theory (Lahlou, 2017) as theoretical foundations, we thoroughly analysed the process of and the obstacles for donating blood. We conducted a survey to understand our target groups motivations and combined the results with those from our theory-driven analysis to develop our intervention. Identifying the need for education, accessibility, and motivation as key drivers of change, our intervention promotes blood donation among young people in Germany through mandatory educational sessions, on-campus donation vans for convenience, and a combination of physical, embodied, and social incentives.

6.2 Limitations

Beyond the practical challenges of implementation, there are also theoretical concerns that deserve attention, particularly around the use of incentives. Whilst the "warm glow" effect has been acknowledged as a motivating factor in blood donation (Ferguson et al., 2012), the risk that extrinsic incentives may undermine intrinsic motivation remains a relevant consideration. Some research has found that rewards can reduce altruistic behaviour across a range of contexts (Deci et al., 1999). However, studies focused specifically on blood donation present mixed findings. For example, Niza et al. (2013) found that incentives did not significantly diminish intrinsic motivation, whilst Goette and Stutzer (2020) demonstrated that financial incentives increased donation rates without reducing future willingness to donate.

Given these contrasting results, there is no clear consensus on how extrinsic incentives influence blood donation behaviour. Therefore, it is important that interventions targeting younger adults in Germany carefully consider the type and framing of incentives to ensure they support, rather than weaken, long-term donor engagement.

The practical limitations are listed below (see *Appendix D* for a detailed discussion of limitations and countermeasures).

Regulatory Challenges

One of the main limitations is that blood donation policies are subject to regulatory change. Government health agencies and ethical boards regularly revise donor eligibility criteria, compensation models and recruitment practices, which could affect the viability of certain interventions. Working alongside government officials or bodies consistently throughout the implementation phase would enable a more feasible roll-out and provide a more stable platform to allow for long-term national outreach.

Logistical Barriers to Bloodmobiles

Expanding bloodmobiles presents financial and logistical challenges. The American Red Cross (2019) estimates that the upfront investment cost of a single unit is $375,000 (subject to change depending on features and location) with an expected lifespan of 10 years, collecting approximately 30,000 units of blood. Whilst staff can be reallocated from underused fixed sites, this may not offset the high operational costs. Mobile units also introduce logistical concerns,

including blood storage, cooling, and transport, all requiring precise management to prevent wastage (WHO, 2023; Shih & Rajendran, 2020)

Scheduling poses another challenge, especially in HEIs where students tend to donate during peak periods, resulting in long waits and frustration. Conversely, outside these peak periods, turnout may be too low, making mobile units inefficient and financially unsustainable. Whilst appointment systems, staggered scheduling, or incentives could help balance donor flow, these require additional coordination.

Selective Scope of Target Groups

Another limitation is that many of the proposed interventions primarily target individuals with a fear of blood donation or a lack of knowledge about the process. It is essential to note that these strategies may not engage those who are aware but remain unmotivated (Lemmens et al., 2005). Reducing fear and improving education alone may overlook donors driven by other factors such as community engagement, personal experience, or workplace incentives. Finding ways to develop greater outreach, such as through social media campaigns, could help reach a broader donor base.

Lack of Feasibility Feedback

Whilst initial assessments suggest feasibility in certain areas, the proposed interventions were developed without formal expert interviews or in-depth feasibility assessments conducted by the key stakeholders and therefore logistical and regulatory challenges may not be fully accounted for. More recent research has also challenged (Titmuss, 1970) theory that financial incentives affect blood quality (Niza et al., 2013).

Furthermore, the German Red Cross has not provided concrete figures to fully support the cost feasibility of the initiative. Whilst there is some information available about the initial investment costs for bloodmobiles using the American Red Cross as a reference, this project arguably lacks a detailed breakdown of ongoing expenses. It is important to consider factors such as staff wages, electricity, medical supplies, and potential emergency costs. Without this, it is difficult to fully assess whether operating bloodmobiles could prove more costly than running well-established blood donation centres.

6.3 Outlook

Future research should explore the scalability of our blood donation interventions, assessing their effectiveness across diverse populations and settings. Investigating the interaction effects between various strategies is also crucial, as combined interventions may yield different outcomes than when applied individually. Additionally, optimising the donation process requires continuous evaluation of existing methods, incorporating new approaches, and eliminating ineffective ones to enhance donor recruitment and retention. By systematically addressing these areas, we can develop more efficient and impactful blood donation programs and help to save lives.

References

American Red Cross. (2019). *Red Cross Announces Mitzen Family Donation*. https://www.redcross.org/local/new-york/eastern-new-york/about-us/news-and-events/news/red-cross-announces-mitzen-family-donation.html?srsltid=AfmBOop4MRw_bQvPK-nKjHSFqsUB-8lvJudvHr0ymkVHAheiRo3Xaoep

Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, *1*(3), 385–405. https://doi.org/10.1177/146879410100100307

Baca-Motes, K., Brown, A., Gneezy, A., Keenan, E. A., & Nelson, L. D. (2013). Commitment and behavior change: Evidence from the field. *Journal of Consumer Research*, *39*(5), 1070–1084. https://doi.org/10.1086/667226

Bednall, T. C., & Bove, L. L. (2011). Donating Blood: A Meta-Analytic Review of Self-Reported Motivators and Deterrents. *Transfusion Medicine Reviews*, *25*(4), 317–334. https://doi.org/10.1016/J.TMRV.2011.04.005

Bloch, E. M., Mast, A. E., Josephson, C. D., Klein, H. G., & Eder, A. F. (2017). Teenage Blood Donors: Are We Asking Too Little and Taking Too Much? *Pediatrics*, *139*(4). https://doi.org/10.1542/peds.2016-2955

Blutspendedienst. (2025). *Gesundheitsheck*. https://www.blutspendedienst.com/services/gesundheitscheck

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places. *Journal of Personality and Social Psychology*, *58*(6), 1015–1026. https://doi.org/10.1037/0022-3514.58.6.1015

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627.

Devlin, A. S. (2014). Wayfinding in healthcare facilities: contributions from environmental psychology. *Behavioral Sciences (Basel, Switzerland)*, *4*(4), 423–436. https://doi.org/10.3390/BS4040423

DKMS. (2025). *Stammzellspende: So kannst du helfen*. https://www.dkms.de/aktiv-werden/spender-werden

DRK. (2024, April 2). *Die Blutspende ist ein Generationenprojekt*. https://www.blutspendedienst-west.de/presse/die-blutspende-ist-ein-generationenprojekt

DRK. (2025). *Strategische Partnerschaft: Coca-Cola*. https://www.drk.de/unternehmen/unsere-partner/coca-cola/

DRK-Blutspendedienste. (2025). *Gemeinnützigkeit bei der Blutspende*. https://www.drk-blutspende.de/gemeinnuetzigkeit

FC St. Pauli. (2023, October 25). *Im Kampf gegen Blutkrebs - DKMS-Registrierungsaktion am Millerntor* . https://www.fcstpauli.com/news/dkms-registrierungsaktion-am-millerntor/

Ferguson, E., & Lawrence, C. (2016). Blood donation and altruism: the mechanisms of altruism approach. *ISBT Science Series*, *11*(S1), 148–157. https://doi.org/10.1111/VOXS.12209

Ferguson, E., Taylor, M., Keatley, D., Flynn, N., & Lawrence, C. (2012). Blood donors' helping behavior is driven by warm glow: more evidence for the blood donor benevolence hypothesis. *Transfusion*, *52*(10), 2189–2200. https://doi.org/10.1111/j.1537-2995.2011.03557.x

Fernandez, R., Uy, C., & Manalo, R. (2024). Exploring the efficacy of digital meme marketing campaigns in generating leads within the generation z demographic. *Journal of Computational Innovation and Analytics (JCIA)*, *3*(1), 37–59. https://doi.org/10.32890/JCIA2024.3.1.3

France, C. R., France, J. L., Wissel, M. E., Kowalsky, J. M., Bolinger, E. M., & Huckins, J. L. (2011). Enhancing blood donation intentions using multimedia donor education materials. *Transfusion*, *51*(8), 1796–1801. https://doi.org/10.1111/J.1537-2995.2010.03033.X

Gillespie, T. W., & Hillyer, C. D. (2002). Blood donors and factors impacting the blood donation decision. *Transfusion Medicine Reviews*, *16*(2), 115–130. https://doi.org/10.1053/TMRV.2002.31461

Glynn, S. A., Schreiber, G. B., Murphy, E. L., Kessler, D., Higgins, M., Wright, D. J., Mathew, S., Tu, Y., King, M., & Smith, J. W. (2006). Factors influencing the decision to donate: racial and ethnic comparisons. *Transfusion*, *46*(6), 980–990. https://doi.org/10.1111/J.1537-2995.2006.00831.X

Godin, G., Conner, M., & Sheeran, P. (2005). Bridging the intention-behaviour "gap": the role of moral norm. *The British Journal of Social Psychology*, *44*(Pt 4), 497–512. https://doi.org/10.1348/014466604X17452

Goethe-Universität. (2025). *Second Hand - Studentisches Projekt*. https://www.uni-frankfurt.de/164957935

Goette, L., & Stutzer, A. (2020). Blood donations and incentives: Evidence from a field experiment. *Journal of Economic Behavior & Organization*, *170*, 52–74. https://doi.org/10.1016/j.jebo.2019.11.021

Graf, C., Oteng-Attakora, K., Ferguson, E., Vassallo, R., & Merz, E. M. (2024). Blood Donor Incentives across 63 Countries: The BEST Collaborative Study. *Transfusion Medicine Reviews*, *38*(2). https://doi.org/10.1016/J.TMRV.2023.150809

Greffin, K., Schmidt, S., Schönborn, L., & Muehlan, H. (2021). "Blood for Blood"? Personal Motives and Deterrents for Blood Donation in the German Population. *International Journal of Environmental Research and Public Health*, *18*(8), 4238. https://doi.org/10.3390/ijerph18084238

Gutoskey, E. (2022, March 28). *How Werther's Original Became the Go-To Candy of Grandparents*. Mental Floss. https://www.mentalfloss.com/posts/werthers-original-candy-grandparents

Hermann, K., Kohrs, J., Martin, A., Pannhausen, G., & Schröder-Heidtmann, M. (2022). *DRK Jahrbuch 2022*. DRK. https://www.drk.de/fileadmin/user_upload/PDFs/Presse/Jahrbuecher/DRK_Jahrbuch_2022_Einzelseiten_LQ.pdf

Hoogerwerf, M. D., Veldhuizen, I. J. T., Tarvainen, M. P., Merz, E. M., Huis in 't Veld, E. M. J., de Kort, W. L. A. M., Sluiter, J. K., & Frings-Dresen, M. H. W. (2018). Physiological stress response patterns during a blood donation. *Vox Sanguinis*, *113*(4), 357–367. https://doi.org/10.1111/VOX.12646

Imamoglu, G., Ayyildiz, E., Aydin, N., & Topcu, Y. I. (2024). Bloodmobile location selection for resilient blood supply chain: a novel spherical fuzzy AHP-integrated spherical fuzzy COPRAS methodology. *Journal of Enterprise Information Management*. https://doi.org/10.1108/JEIM-07-2023-0379

Jacobs, J. W., Bates, I., M'baya, B., Eichbaum, Q., Louw, V. J., Al-Riyami, A. Z., Tayou, C., Wendel, S., Tobian, A. A. R., & Bloch, E. M. (2024). Ensuring a Safe and Sufficient Global Blood Supply. *New England Journal of Medicine*. https://doi.org/10.1056/NEJMP2403596/SUPPL_FILE/NEJMP2403596_DISCLOSURES.PDF

Kausch, M. (2024, August 21). *95 Jahre RUNDSCHAU: Seeberger – Snacks für alle. Rundschau*. https://www.rundschau.de/artikel/95-jahre-rundschau-seeberger

Klinkenberg, E. F., Huis In't Veld, E. M. J., de Wit, P. D., van Dongen, A., Daams, J. G., de Kort, W. L. A. M., & Fransen, M. P. (2019). Blood donation barriers and facilitators of Sub-Saharan African migrants and minorities in Western high-income countries: a systematic review of the literature. *Transfusion Medicine*, *29*(S1), 28–41. https://doi.org/10.1111/tme.12517

Lacetera, N., & Macis, M. (2010). Social image concerns and prosocial behavior: Field evidence from a nonlinear incentive scheme. *Journal of Economic Behavior & Organization*, *76*(2), 225–237. https://ideas.repec.org/a/eee/jeborg/v76y2010i2p225-237.html

Lahlou, S. (2017). Installation Theory: The Societal Construction and Regulation of Behaviour. *Installation Theory: The Societal Construction and Regulation of Behaviour*, 1–495. https://doi.org/10.1017/9781316480922

Lahlou, S. (2022). How to change consumer behaviours. *Proceedings of the Nutrition Society*, *82*(1), 80–90. https://doi.org/10.1017/S0029665122002877

Lahlou, S. (2023). How to change consumer behaviours. *Proceedings of the Nutrition Society*, *82*(1), 80–90. https://doi.org/10.1017/S0029665122002877

Lahlou, S. (2024). *Why people do what they do: and how to get them to change*. 200. https://www.wiley.com/en-us/Why+People+Do+What+They+Do%3A+And+How+to+Get+Them+to+Change-p-9781509559497

Lahlou, S., Le Bellu, S., & Boesen-Mariani, S. (2015). Subjective Evidence Based Ethnography: Method and Applications. *Integrative Psychological and Behavioral Science*, *49*(2), 216–238. https://doi.org/10.1007/S12124-014-9288-9/FIGURES/11

Lehmann, O. V., Murakami, K., & Klempe, S. H. (2019). A Qualitative Research Method to Explore Meaning-Making Processes in Cultural Psychology. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *20*(2). https://doi.org/10.17169/FQS-20.2.3190

Lemmens, K. P. H., Abraham, C., Hoekstra, T., Ruiter, R. A. C., De Kort, W. L. A. M., Brug, J., & Schaalma, H. P. (2005). Why don't young people volunteer to give blood? An investigation of the correlates of donation intentions among young nondonors. *Transfusion*, *45*(6), 945–955. https://doi.org/10.1111/J.1537-2995.2005.04379.X

Leontiev, A. (1972). *Le développement du psychisme : problèmes*. Editions sociales.

Niza, C., Tung, B., & Marteau, T. M. (2013). Incentivizing blood donation: Systematic review and meta-analysis to test Titmuss' hypotheses. *Health Psychology*, *32*(9), 941–949. https://doi.org/10.1037/a0032740

Organization, W. H. (2023). *Guidance on ensuring a sufficient supply of safe blood and blood components during emergencies*. World Health Organization.

Osorio, A. F., Brailsford, S. C., & Smith, H. K. (2018). Whole blood or apheresis donations? A multi-objective stochastic optimization approach. *European Journal of Operational Research*, *266*(1), 193–204. https://doi.org/10.1016/j.ejor.2017.09.005

Pilgrim, K., & Bohnet-Joschko, S. (2022). Effectiveness of Digital Forced-Choice Nudges for Voluntary Data Donation by Health Self-trackers in Germany:Web-Based Experiment. *Journal of Medical Internet Research*, *24*(2), e31363. https://doi.org/10.2196/31363

Piliavin, J. A., & Callero, P. L. (1991). *Giving blood: The development of an altruistic identity.* Johns Hopkins University Press.

Rezaei Kallaj, M., Hasannia Kolaee, M., & Mirzapour Al-e-hashem, S. M. J. (2023). Integrating bloodmobiles and drones in a post-disaster blood collection problem considering blood groups. *Annals of Operations Research*, *321*(1), 783–811. https://doi.org/10.1007/S10479-022-04905-Y

Romero-Domínguez, L., Martín-Santana, J. D., Sánchez-Medina, A. J., & Beerli-Palacio, A. (2022). Blood donation barriers: How does donor profile affect them? *International Review on Public and Nonprofit Marketing*, *19*(2), 247–264. https://doi.org/10.1007/S12208-021-00303-5/TABLES/5

Rubinstein, S. L. (1940). *Osnovy obshchei psikhologii. Bases of general Psychology.? Izdatel'stvo AN SSSR. Izdatel'stvo Gosudarstvennoie uchebno-pedagogicheskoie izdatel'stvo Narkomprosa RSFSR*.

Rundschau. (2012, May 21). *Lindt: Auf der Suche nach neuen Zielgruppen* . https://www.rundschau.de/artikel/lindt-auf-der-suche-nach-neuen-zielgruppen

Sachdev, S., Prinja, N., Kumari, S., Singh, L., Lamba, D. S., Dhawan, H. K., & Sharma, R. R. (2024). The role of blood donation on wheels in the blood collection chain operational logistics during the first wave of coronavirus disease 2019 pandemic. *Asian Journal of Transfusion Science*, *18*(2), 159–167. https://doi.org/10.4103/ajts.ajts_64_24

Saillant, N. N., Kornblith, L. Z., Moore, H., Barrett, C., Schreiber, M. A., Cotton, B. A., Neal, M. D., Makar, R., & Cap, A. P. (2022). The National Blood Shortage—An Impetus for Change. *Annals of Surgery*, *275*(4), 641–643. https://doi.org/10.1097/SLA.0000000000005393

Schröder, J. M. (2024). *Social Dynamics of Cooperation: How Motivational Diversity, Social Contagion, Communication, and Group Formation Shape Blood Donation Behaviour*. https://doi.org/10.5463/THESIS.828

Shih, H., & Rajendran, S. (2020). Stochastic Inventory Model for Minimizing Blood Shortage and Outdating in a Blood Supply Chain under Supply and Demand Uncertainty. *Journal of Healthcare Engineering*, *2020*, 1–14. https://doi.org/10.1155/2020/8881751

Sparkman, G., Howe, L., & Walton, G. (2021). How social norms are often a barrier to addressing climate change but can be part of the solution. *Behavioural Public Policy* , *5*(4), 528–555. https://doi.org/10.1017/BPP.2020.42

Titmuss, R. M. (1970). *The gift relationship from human blood to social policy*.

Vuletić, Č. D., Ferguson, E., Baggio, M., & Bruns, H. (2023). *Blood donation in the EU: exploring behavioural insights for innovative interventions*. https://doi.org/10.2760/335203

WDR. (2024, August 18). *Blutspenden: Was Gen Z und Co von Babyboomern lernen können* . https://www1.wdr.de/nachrichten/blutreserven-werden-knapp-woher-kommt-der-mangel-100.html

Wiles, R., Prosser, J., Bagnoli, A., Clark, A., Davies, K., Holland, S., & Renold, E. (2008). *ESRC National Centre for Research Methods Review Paper Visual Ethics: Ethical Issues in Visual Research*.

World Health Organization (WHO). (2023, June 2). *Blood safety and availability*. https://www.who.int/news-room/fact-sheets/detail/blood-safety-and-availability

ZDF. (2024, August 17). *Ärzte warnen: Kritischer Mangel an Blutspenden*. https://www.zdf.de/nachrichten/panorama/blutspende-reserve-mangel-100.html

Zhang, Y., & Chiu, C. Y. (2012). Goal commitment and alignment of personal goals predict group identification only when the goals are shared. *Group Processes & Intergroup Relations, 15*(3), 425–437. https://doi.org/10.1177/1368430211415440

Appendix

A. Summary of non-monetary and monetary blood donation incentives used in the EU

B. In detail stakeholder analysis

C. Activity Grid of Blood Donation in Germany

D. Limitations and Countermeasures

E. Codebook for Thematic Analysis

F. Qualtrics Survey

G. AI prompts for Image Generation

A: Summary of non-monetary and monetary blood donation incentives used in the EU

Member State	Incentives offered to blood donors									
	Non-monetary incentives with some material component				Monetary incentives					
	Refreshments	Medals of merit or recognition tokens	Small tokens or symbolic gifts	Paid time off work	Subsidised public transportation	Food vouchers	Tax relief	Heath insurance benefits	Compensation for donor's direct costs	Cash payment
Austria			✓							
Belgium	✓ (1)			✓						
Bulgaria	✓		✓	✓					✓	✓ (2)
Croatia	✓		✓	✓	✓			✓		
Czechia	✓	✓		✓			✓	✓		
Denmark	✓		✓							
Estonia	✓	✓	✓	✓						
Finland	✓	✓	✓						✓ (3)	
France			✓	✓					✓	
Germany									✓	✓ (4)
Greece	✓	✓	✓	✓ (5)					✓	
Hungary	✓								✓	
Ireland	✓	✓	✓							
Italy	✓	✓	✓	✓						
Latvia			✓	✓		✓			✓ (6)	
Lithuania			✓	✓						
Luxembourg	✓	✓		✓						
Malta	✓			✓ (7)						
Netherlands	✓	✓						✓	✓	
Poland	✓	✓	✓	✓	✓		✓			
Portugal							✓ (8)			
Cyprus	✓	✓		✓ (9)						
Romania			✓	✓	✓	✓			✓	
Slovakia		✓		✓ (9)		✓				
Slovenia	✓			✓						
Spain										
Sweden			✓			✓				

(1) Up to 1 day off work, depending on the employer.
(2) Donations of blood and blood components in Bulgaria are voluntary and not remunerated. The only exceptions are monetary remunerations for blood donations in emergency cases, for the production of vaccines, serums and immunoglobulins, and for research and diagnostic purposes.
(3) Only in cases where the donor has been specifically called for an urgent donation.
(4) Not all blood services provide donors with monetary remuneration.
(5) Public servants are granted paid leave when making a blood donation.
(6) Blood donors in Latvia donate voluntarily. However, in accordance with Latvian legislation, donors have the option to have their travel expenses associated with blood donation covered up to EUR 4.27 (paid to a bank account).
(7) Employers are encouraged to allow workers the required time off work to donate.
(8) Exemption from paying fees for access to national healthcare (tax cut).
(9) Granting paid leave for a donation depends on the employer.
Note: This table summarises the main findings of the EU-27 blood donation overview related to different types of non-monetary and monetary incentives used to motivate donors to donate blood.

Note. This table summarises the types of non-monetary and monetary incentives offered to blood donors across EU Member States. Adapted from *Blood Donation in the EU: Exploring Behavioural Insights for Innovative Interventions*, by D. Vuletić Čugalj, E. Ferguson, M. Baggio, & H. Bruns, 2024, *Publications Office of the European Union*. © European Union, 2024. https://data.europa.eu/doi/10.2760/335203.

B: Stakeholder Analysis

Stakeholder	Involvement	Motivation	Potential obstacles for cooperation
The German Red Cross	- Responsible for providing nationwide supply of live-saving blood donations for seriously ill and injured people (DRK-Blutspendedienste, 2025) - Responsible for providing the staff, vans and necessary equipment for the collection of blood donations on campus	- Secure an increased number of blood donations for patients in need - Increase students' awareness for the need for blood donations - Recruit students as future employees	- Financial cost of providing vans, equipment and personnel for blood donation collection on campus - Limited number of staff to spare for on-campus blood donation collection

German students	- Potential blood donors
	- Participate in educational interventions to be encouraged to donate blood
		- Motivations for donating blood (survey results):
		  - Helping others in need (89% of respondents)
		  - Personal health benefits (43% of respondents)
		  - Financial benefits (40% of respondents)
		  - Social recognition (24% of respondents)
		  - Material incentives (19% of respondents)
		  - Sense of community (17% of respondents)
			- Derived from survey results:
			  - Fear of needles (25% of respondents)
			  - Fear of possible side effects of blood donation (20% of respondents)
			- No eligibility to donate blood

German higher education institutions (HEI)	- The HEI's permission is needed to collect blood donations on campus. - Higher education institutions, are a great setting for educational interventions promoting blood donations - HEI's need to provide the rooms and spaces for educational interventions as well as the blood collection process itself	- Support for the collection of blood donations puts HEI's in a favourable light and improves their image through social responsibility	- Unwillingness or incapacity to provide rooms and spaces for blood donation collection and educational interventions
Government	- The German Red Cross is funded by donations and earmarked grants from the national and local German as well as EU governments (Hermann et al., 2022) - Higher education institutions are funded by the government	- The German government's interest in securing healthcare by ensuring the need for blood donations is met, which makes their collaboration likely	- Financial cost of on-campus blood donation collection - Local regulations preventing the permission for on campus blood donation collection

	- The project's execution might require an increase in granted funds from the government to finance additional expenses for onsite-staff and fuel - Permission of responsible authorities will be required to be able to collect blood donations on HEI grounds		
Patients receiving blood	- Seriously ill and injured people in need of blood donations represent the key beneficiaries of the system of interventions, as blood donations are crucial to their survival - An increase in blood donations resulting from this project would relieve the German healthcare system and prevent necessary rescheduling of non-emergency surgeries due to a lack of donations (ZDF, 2024)	- Good health and survival	/
Corporations	- Provide incentives for blood donation - Blood donation vans will show who incentives are sponsored by to increase brand awareness	- Several well-known FMCG sector companies with a strong presence on the German and DACH region market struggle to reach younger consumers (some examples include Lindt & Sprüngli (Rundschau, 2012), Seeberger (Kausch, 2024) and Werther's Original (Gutoskey, 2022), which can be attributed to their premium pricing or nostalgic branding - Need to reach younger consumers to secure a long-term increase in revenue - Boost image through corporate social responsibility	- Cost of providing incentives for blood donation - Focus on well-established target group of older consumers - Already attracts a large group of younger consumers

C: Activity Grid: Blood Donation in Germany

Task	Actor's Motives and Goals	Contributions from the Actor	Actor Rewards	Affordances	Competences	Regulation	Comments
Decide to become a donor	Wanting to donate blood	Do online research	Becoming aware of information	Computer, Online website, other news/ research articles about blood donation	Using online researching skills to find information	Social / religious norms regarding blood donation	
Go to the Blood Donation Centre	Donate blood, reach the donation centre	Taking the bus/ driving/ walking	Satisfaction of having taken the first step	Pavement/ Car/ Bus	Knowing how to drive, what bus to take, what time to go at	Opening hours of the donation centre	
Registration and get health checkups done	Complete task to begin with the process	Reading mindfully, complying to rules	Feel prepared	Computer, pens, printed documents, medical equipment	Knowledge of using computer, personal information, writing	Mandatory registration and health checkup	
Fill out the questionnaire and read related information	Donate blood, adhere to health-related rules	Reading carefully, answering accurately	Feel ready for donation	Printed question-naire, health brochures	Knowing personal health information	Strict rules about health requirements	

Speak with the doctor, answer key questions, do health checkups	Completing tests to know more about one's health conditions	Speaking truthfully and complying to medical tests	Become aware of one's health condition, be able to discover medical issues	Doctor's medical equipment, clinic space	Knowledge of answering questions accurately, following the doctor's instructions	Doctor's mandatory requirements, honesty	
Donate Blood: arm examination, locating vein, antiseptic cleaning, blood collected into blood bag from the inserted needle, needle removed, and sterile dressing applied to hand	Donate blood, want to help others	Willingness to comply to doctor and nurse's instructions during the process	Satisfaction of donating blood	Blood bag, needle, tilted bed, attached medical equipment	Feeling fear of being pricked, knowledge of sitting still, waiting patiently	Expected co-operation during the process	Can be a little overwhelming for first-time donors, feelings of fear of needles can be invoked, sudden phobia triggers
Eating, resting	Recover from the process, rest	Consuming food for regaining energy	Regain energy	Food, resting area	Feeling of dizziness or lack of energy	Mandatory observation period for a few minutes	
Collecting goodie bag containing: 20 euros in cash and snacks	Leave the centre	Collection of the bag before leaving	Feel motivated, valued or encouraged by the incentives	Items in the bag: cash, snacks etc	Awareness about collecting the bag	Incentives set in place to encourage first-time donors to become regular donors	Can feel very motivated and satisfied or positive about the whole process

D: Limitations and Countermeasures

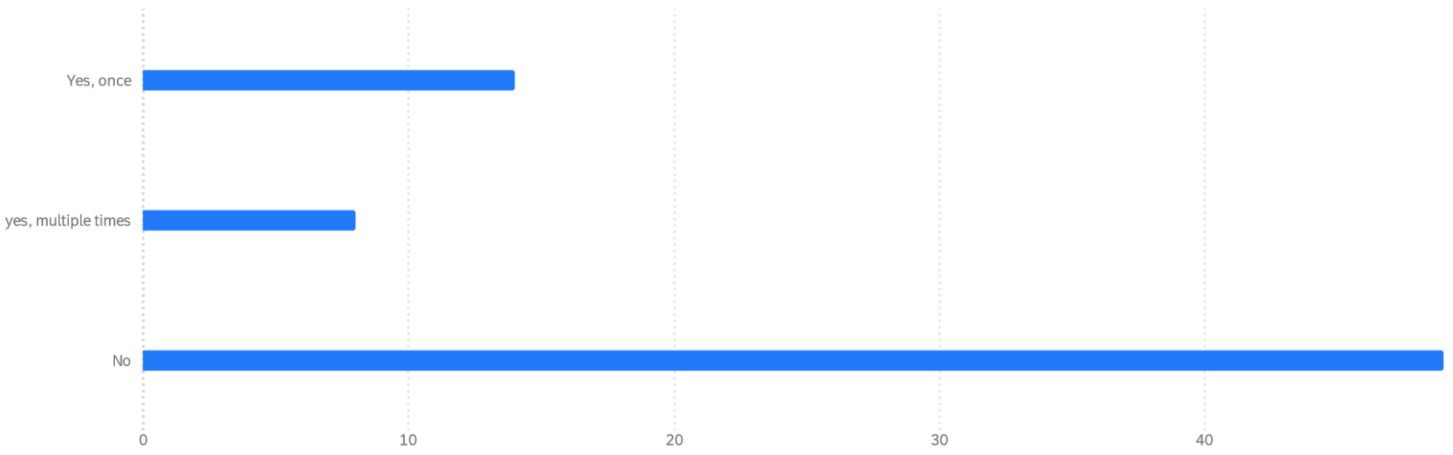
Limitation	Explanation	Potential countermeasure
Regulatory Challenges	Blood donation policies are subject to frequent revisions by government health agencies and ethical boards, impacting donor eligibility, compensation models, and recruitment practices. These regulatory uncertainties could affect the feasibility of certain interventions	- Engage with policymakers and health authorities to ensure interventions align with evolving regulations - Advocate for policy consistency through research-based recommendations
Logistical Barriers to Bloodmobiles	Scheduling challenges in high-traffic areas like HEI's can lead to long wait times during peak hours and low participation at other times. Mobile blood donation units also face issues with blood storage, cooling, and transportation logistics, all of which require precise management to prevent wastage. Bloodmobiles are expensive, with estimates from the American Red Cross suggesting costs of around $375,000 per unit. Operational expenses, including staffing, transportation, and equipment, make them financially challenging.	- Implement appointment-based systems to balance donor flow - Optimise scheduling with staggered donation slots and use fixed-location centres where possible - Seek funding through government grants, sponsorships, or public-private partnerships - Reallocate staff from underutilised fixed donation sites to mobile units
Interventions only appeal to selective groups	Many proposed strategies focus on reducing fear and increasing education, but these do not engage individuals who are aware of blood donation but remain uninterested or unmotivated. Broader demographics, such as those motivated by community engagement, workplace incentives, or personal experiences with transfusions, may require different approaches.	- Expand outreach efforts through social media campaigns, workplace donation programs, and storytelling initiatives to connect with donors on a personal level
Lack of feasibility feedback	The interventions were developed without formal expert interviews or feasibility assessments, making it uncertain how practical they are in real-world settings. Feasibility assessments were not formally investigated by stakeholders such as the German Red Cross, HEI administrators or corporations.	- Conduct pilot studies, expert consultations, and small-scale trials before full implementation to assess feasibility and effectiveness

E: Thematic Analysis Codebook

Theme	Code	Description	Example
Enabling accessibility	Higher proximity	Making donation sites easier to reach	*"I'd totally donate more often if there was a centre near my house, but the closest one is too far."* *"I always think about donating, but there's just nowhere convenient to go, so I never actually do it."*
	Improving visibility	More reminders and public presence	*"Unless you're actively looking for it, you'd never even know where to donate. It needs to be more in your face."* *"I barely ever see anything about blood drives around town—if they put up more posters, I'd probably remember."*
Informing and educating	Information on the process	Explaining how donation works	*"I've always wanted to donate, but I don't know how it actually works, and that makes me a bit nervous."* *"They should explain the whole process more clearly—like how long it takes and what exactly happens when you donate."*
	General presence of the topic	Keeping blood donation in public conversation	*"It feels like no one ever talks about donating blood unless there's a huge emergency, but it should be an ongoing thing."* *"If blood donation was something we heard about regularly, like recycling or exercising, more people would probably do it."*
Highlighting the demand	Stressing the seriousness	Emphasizing the real need for blood	*"I don't think people really understand how urgent it is unless there's some big crisis on the news."* *"They always say blood donation is important, but they never really explain how bad the shortages actually get."*
	Making it more tangible	Personal stories and concrete examples	*"If they showed real people who needed a transfusion, instead of just saying 'we need more blood,' it would feel more real."* *"It's easy to ignore a statistic, but if you see someone talking about how it saved their life, that sticks with you."*

F: Qualtrics Survey

Have you donated blood before? 71



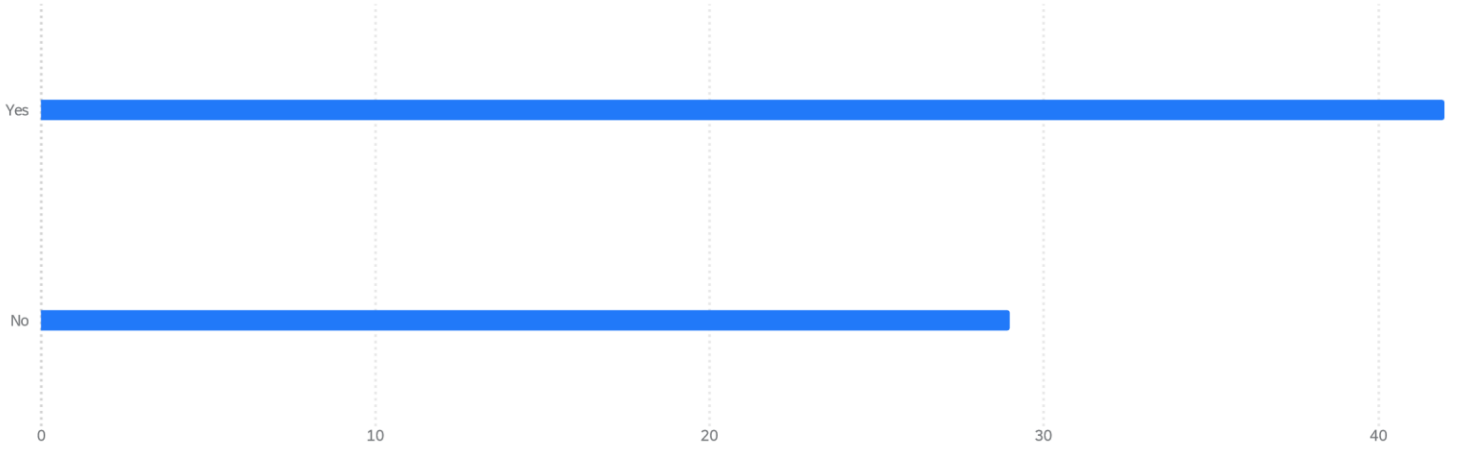
Have you donated blood before? 71

Q1 - Have you donated blood before?	Percentage	Count
Yes, once	20%	14
yes, multiple times	11%	8
No	69%	49

Have you donated blood before? 71

Have you donated blood before?	Average	Minimum	Maximum	Count
Yes, once	1.00	1.00	1.00	14
yes, multiple times	2.00	2.00	2.00	8
No	3.00	3.00	3.00	49

Do you know where you could potentially donate blood near you? 71



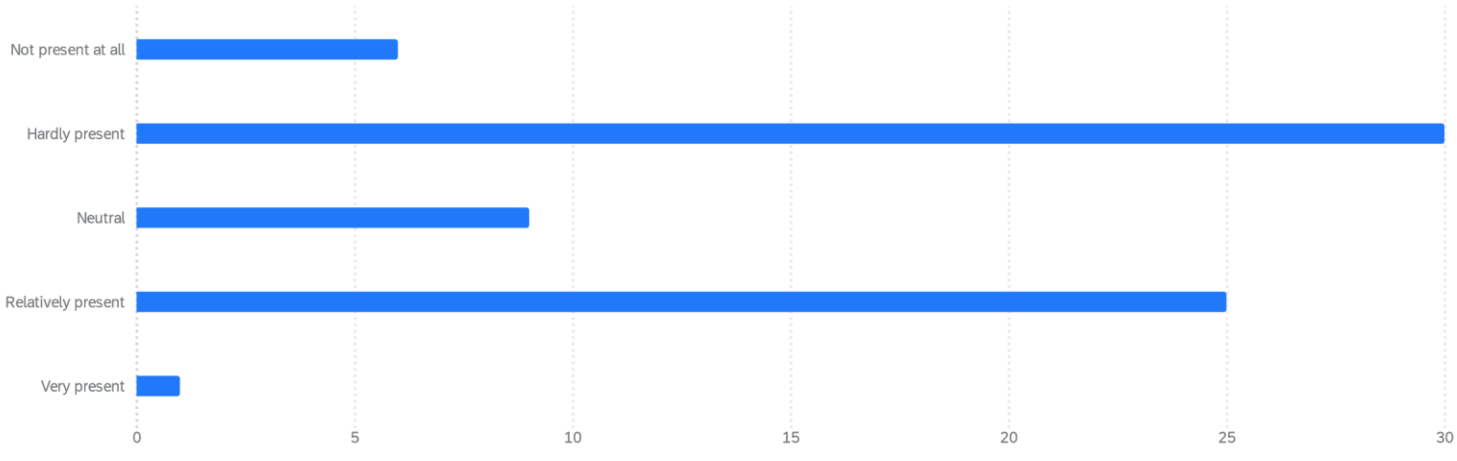
Do you know where you could potentially donate blood near you? 71

Q2 - Do you know where you could potentially donate blood near you?	Percentage	Count
Yes	59%	42
No	41%	29

Do you know where you could potentially donate blood near you? 71

Do you know where you could potentially donate blood near you?	Average	Minimum	Maximum	Count
Yes	1.00	1.00	1.00	42
No	2.00	2.00	2.00	29

How present is the topic of blood donation in your life? (e.g. discussed in friend group, visible on 71



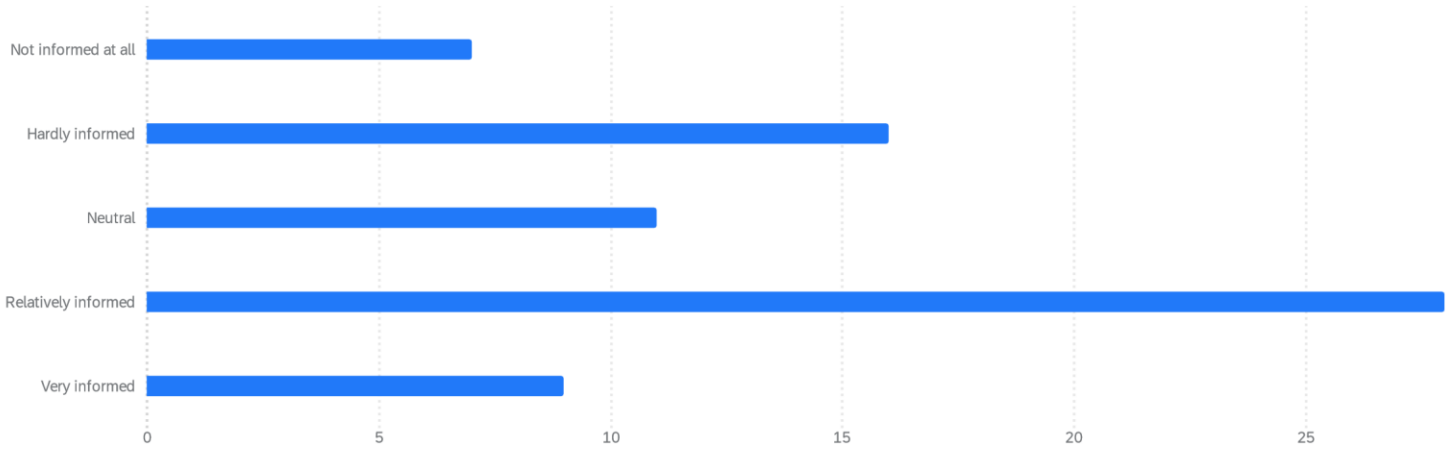
How present is the topic of blood donation in your life? (e.g. discussed in friend group, visible on 71

Q3 - How present is the topic of blood donation in your life? (e.g. discussed in friend group, visible on	Percentage	Count
Not present at all	8%	6
Hardly present	42%	30
Neutral	13%	9
Relatively present	35%	25
Very present	1%	1

How present is the topic of blood donation in your life? (e.g. discussed in friend group, visible on 71

How present is the topic of blood donation in your life? (e.g. discussed in...	Average	Minimum	Maximum	Count
Not present at all	1.00	1.00	1.00	6
Hardly present	2.00	2.00	2.00	30
Neutral	3.00	3.00	3.00	9
Relatively present	4.00	4.00	4.00	25
Very present	5.00	5.00	5.00	1

How informed do you feel about the process of blood donation? 71



How informed do you feel about the process of blood donation? 71

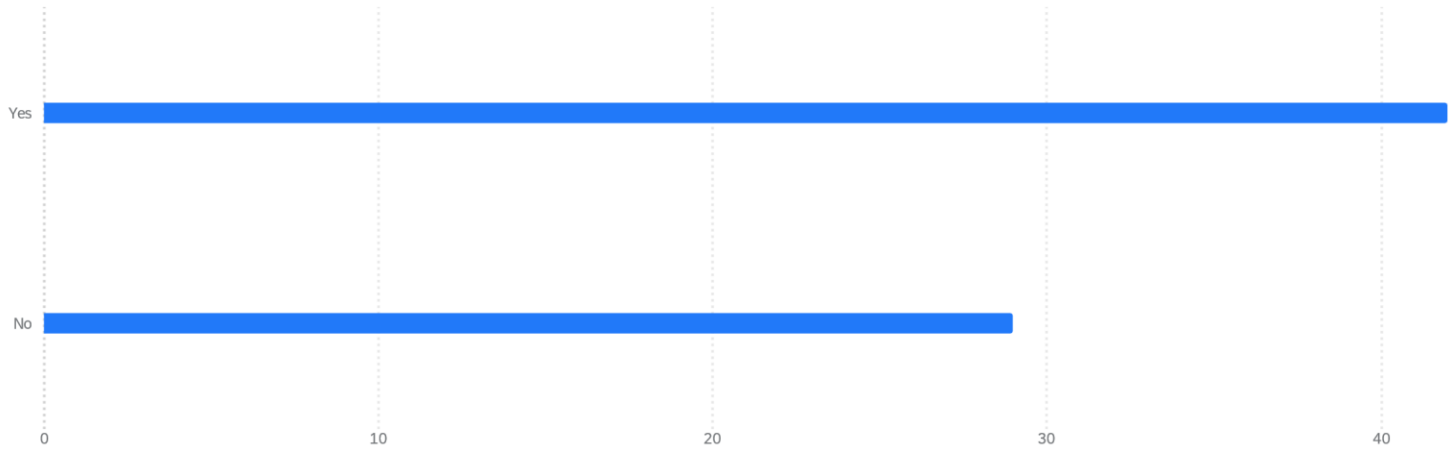
Q4 - How informed do you feel about the process of blood donation?	Percentage	Count
Not informed at all	10%	7
Hardly informed	23%	16

Q4 - How informed do you feel about the process of blood donation?	Percentage	Count
Neutral	15%	11
Relatively informed	39%	28
Very informed	13%	9

How informed do you feel about the process of blood donation? 71

How informed do you feel about the process of blood donation?	Average	Minimum	Maximum	Count
Not informed at all	1.00	1.00	1.00	7
Hardly informed	2.00	2.00	2.00	16
Neutral	3.00	3.00	3.00	11
Relatively informed	4.00	4.00	4.00	28
Very informed	5.00	5.00	5.00	9

Do you know if you are eligible to donate blood? 71



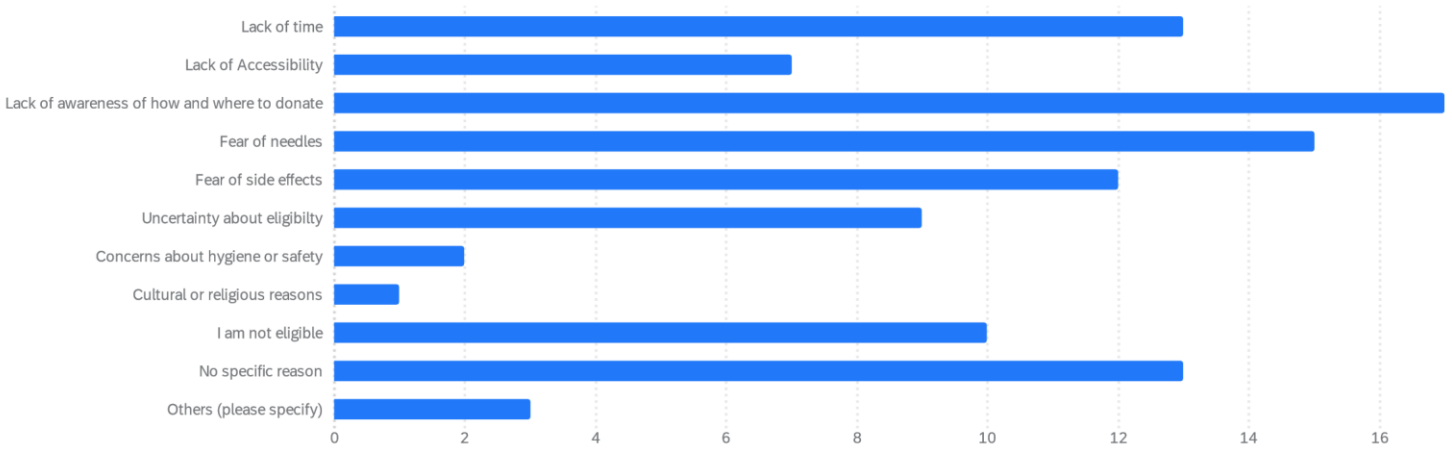
Do you know if you are eligible to donate blood? 71

Q5 - Do you know if you are eligible to donate blood?	Percentage	Count
Yes	59%	42
No	41%	29

Do you know if you are eligible to donate blood? 71

Do you know if you are eligible to donate blood?	Average	Minimum	Maximum	Count
Yes	1.00	1.00	1.00	42
No	2.00	2.00	2.00	29

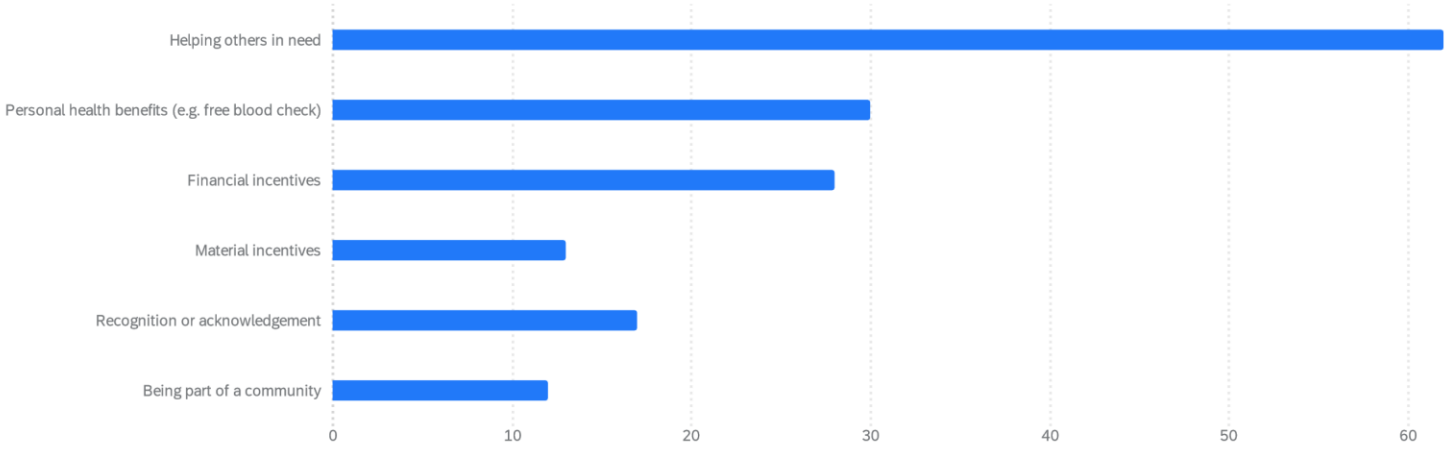
If you have not donated blood before, what are the main reasons? (select all that apply) 59



If you have not donated blood before, what are the main reasons? (select all that apply) 59

Q6 - If you have not donated blood before, what are the main reasons? (select all that apply) - Selected Choice	Percentage	Count
Lack of time	22%	13
Lack of Accessibility	12%	7
Lack of awareness of how and where to donate	29%	17
Fear of needles	25%	15
Fear of side effects	20%	12
Uncertainty about eligibilty	15%	9
Concerns about hygiene or safety	3%	2
Cultural or religious reasons	2%	1
I am not eligible	17%	10
No specific reason	22%	13
Others (please specify)	5%	3

What would or does motivate you to donate blood? (select all that apply) 70



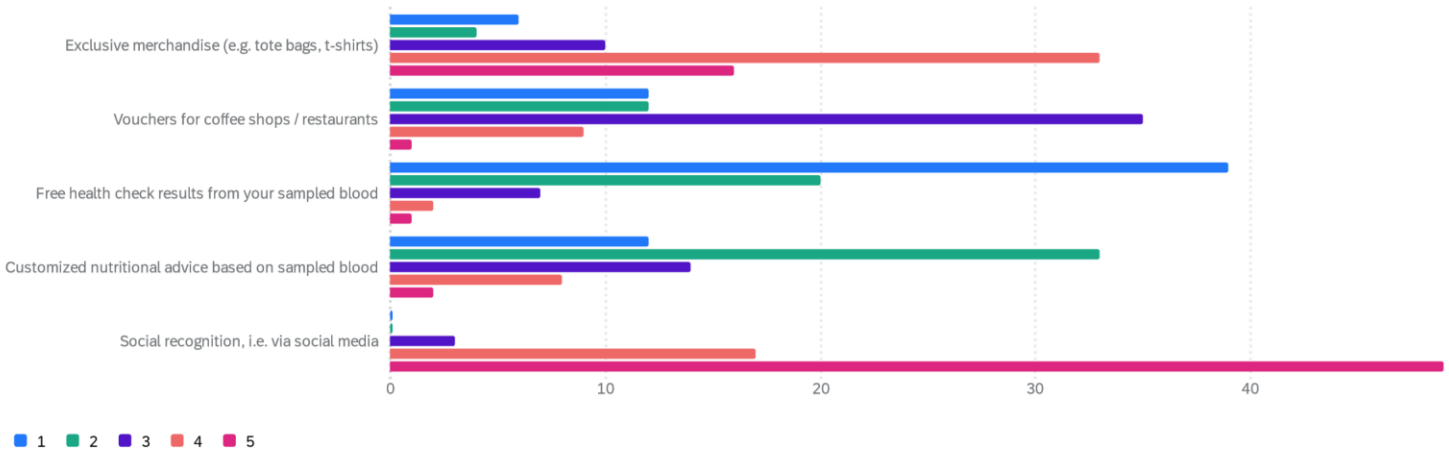
What would or does motivate you to donate blood? (select all that apply) 70

Q7 - What would or does motivate you to donate blood? (select all that apply) - Selected Choice	Percentage	Count
Helping others in need	89%	62
Personal health benefits (e.g. free blood check)	43%	30
Financial incentives	40%	28
Material incentives	19%	13
Recognition or acknowledgement	24%	17
Being part of a community	17%	12

How likely would the following measures make you donate blood? 69

How likely would the following measures make you donate blood?	Average	Minimum	Maximum	Count
General information session and myth-busting workshop	4.01	0.00	10.00	69
Having a mobile donation van on campus	6.28	0.00	10.00	69
Receiving material incentives (non-financial)	3.94	0.00	10.00	69
Donor merch / Donor badge	2.14	0.00	10.00	69
Receiving financial incentives	5.61	0.00	10.00	69

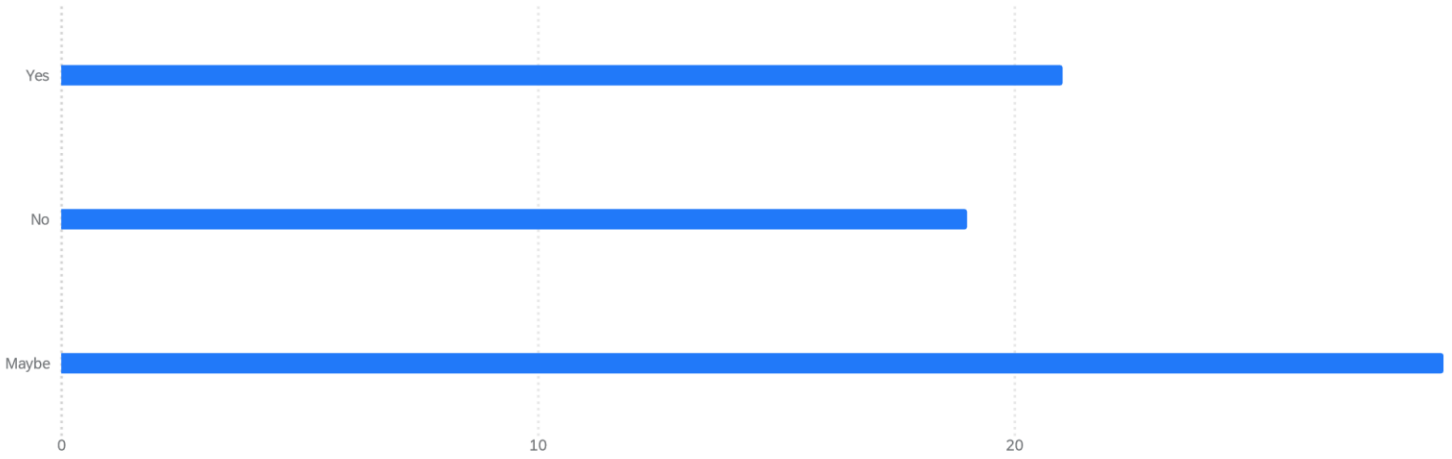
Which of the following incentives would you find most appealing? Please rank the options with your favorite at the top 69



Which of the following incentives would you find most appealing? Please rank the options with your favorite at the top 69

Which of the following incentives would you find most appealing? Please ran...	1	2	3	4	5
Exclusive merchandise (e.g. tote bags, t-shirts)	6	4	10	33	16
Vouchers for coffee shops / restaurants	12	12	35	9	1
Free health check results from your sampled blood	39	20	7	2	1
Customized nutritional advice based on sampled blood	12	33	14	8	2
Social recognition, i.e. via social media	0	0	3	17	49

Would you be more inclined to donate blood if it was framed as part of a larger social university challenge? 69



Would you be more inclined to donate blood if it was framed as part of a larger social university challenge? 69

Q13 - Would you be more inclined to donate blood if it was framed as part of a larger social university challenge?	Percentage	Count
Yes	30%	21
No	28%	19
Maybe	42%	29

Would you be more inclined to donate blood if it was framed as part of a larger social university challenge? 69

Would you be more inclined to donate blood if it was framed as part of a l...	Average	Minimum	Maximum	Count
Yes	1.00	1.00	1.00	21
No	2.00	2.00	2.00	19
Maybe	3.00	3.00	3.00	29

G: AI prompts for Image Generation

Figure	Software used	Prompt
Title picture	*Microsoft Designer*	*"A vibrant university campus in Germany with modern buildings and lush greenery. In the centre, a DRK bloodmobile is parked, surrounded by enthusiastic students eager to donate blood. Nearby, a workshop session is taking place, with students attentively listening"*
Figure 8	*Microsoft Designer*	*"Generate a real looking picture where students are listening to a lecture. please make sure that the Lecture slide on the projector at the front is visible and big so that I will be able to edit a picture on it"*
Figure 9	*Microsoft Designer*	*"Generate a Photo of students in a university classroom scanning a QR code that is displayed at the front of the classroom on a projector"*
Figure 11	*Microsoft Designer*	*"Generate a Photo of a monitor sized infoscreen in a university cafeteria. A few students have gathered around the screen. Please make it look realistic"*

Note: Figures 8; 9; 11 were edited in Microsoft PowerPoint after image creation