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How to motivate blood and plasma donors in Flanders (and elsewhere)?

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1. Introduction

It is widely recognized that blood products should not be treated as commodities that can be bought and sold. Indeed, according to the World Health Organization (2009), the European Blood Alliance (2013), the Council of Europe (1995), and the International Society for Blood Transfusion (2015), blood and plasma donations should be voluntary and unpaid. This position is based on a mix of ethical and practical arguments against the commodification of blood products.

At this moment the supply of blood from voluntary donations is sufficient to meet the demand for blood. This is less clear for plasma and plasma-derived products, however, where there is an increasing demand, partly because of its use by pharmaceutical firms. As a matter of fact, some countries have a system in which plasma donors are paid by for-profit firms: this is the case in the United States, but also in European countries such as Germany, Hungary, Austria, and the Czech Republic. These countries are responsible for 90% of total world supply (Hartmann and Klein, 2020). Countries that are not self-sufficient for plasma, import it from countries with paid donations. Many of these importing countries do not collect plasma themselves.[2]

Partly as a consequence of this situation, the debate about paid donation of blood and blood products remains open, also at the EU level. In December 2023, the Council of the European Union (EU) and the European Parliament reached consensus on a new 'Regulation on standards of quality and safety for substances of human origin intended for human application'. The new regulation repeats that donation of blood products should be voluntary and unpaid, and that compensation is only allowed to prevent that donors are financially disadvantaged by their donation. This latter condition is interpreted in a rather flexible way since the regulation states that compensation may consist of the reimbursement of expenses incurred in connection with the donation, or of making good of any losses, preferably based on quantifiable criteria, associated with the donation. Countries keep some freedom to define what constitutes a quantifiable loss and to decide whether or not to include a form of payment

[1] The research summarized in this paper has been financed by the Belgian Red Cross-Flanders. We thank Antoon Vandevelde and Philippe Vandekerckhove for their useful comments. Only the authors are responsible for the content of the paper.

[2] There is no one-to-one relationship between having paid donations and being self-sufficient, however. As an example, the Czech Republic exports all plasma collected from Czech citizens.

within the compensation. However, the allowable compensation is capped and advertising is forbidden.

This paper gives an overview of the ethical and economic arguments in favour of and against paid donation of blood and plasma. Some of the arguments can only be settled by empirical evidence. We present empirical evidence from three large opinion surveys (two in Flanders, one in Germany) and a series of field experiments in Flanders. In Flanders, paid donations are forbidden by law. Donations are organized by the Belgian Red Cross-Flanders, which rewards its donors with non-cash vouchers worth €1.5 for a blood and €3 for a plasma donation. As mentioned before, Germany is an interesting comparison country, as it allows paid plasma donations.

We start with a general perspective on the different ethical and economic arguments that have been used in the public debate on this issue. This will allow us to focus in the following sections on the empirical results: in section 3 on the opinions on paid donations in the Flemish and German population, and in section 4 on the existence of behavioural crowding out, i.e., the alleged negative effect of material incentives on donation behaviour. Section 5 returns to the issue of the possible supply shortage for plasma. Section 6 draws some policy conclusions.

2. The ethical and economic discussion

An important distinction in the different ethical arguments against the commodification of blood products is that between consequentialist and non-consequentialist approaches. Consequentialism bases the normative evaluation of policy measures and institutions on specific consequences for society, e.g., the effect of commodification on blood quality. If these consequences are measurable, e.g., the prevalence of transfusion-transmittable infectious diseases in blood, then consequentialist arguments can be tested using empirical observations. Non-consequentialist arguments depend on theoretical reflections and are not testable. There is no consensus among ethicists about these arguments; and empirical observations cannot help us out. In fact, even though empirical research may contribute to the consequentialist ethical debate on the commodification of blood products, even in that debate empirical findings cannot be decisive. Suppose, for instance, that it can convincingly be shown that paid donation reduces the quality of the donated blood, this does not automatically imply that the argument is also ethically relevant. It is only relevant if one accepts the (in this case rather convincing) normative argument that quality matters. The relative importance of the different (non-consequentialist and consequentialist) arguments is also an ethical issue. It is to be expected that there will be no consensus about these arguments. Even if one agrees about each of the arguments separately, one can give different weights to them when they are conflicting. Taking a position on paid blood donation requires therefore a kind of ethical cost-benefit analysis.

In this section, we structure the ethical arguments against the commodification of blood products along these lines. We start with the non-consequentialist (non-testable) arguments, followed by the consequentialist (testable) ones. Among the consequentialist arguments, we distinguish between those that are hard to test (usually, because the consequences are hard to measure/observe) and those that are testable with standard techniques.

2A. Non-consequentialist arguments

The main non-consequentialist arguments concerning the commodification of blood products are based on aspects of liberal rights and freedom, human dignity, and the corruption of social meanings.

Liberal rights and freedom

Liberal rights protect personal decisions, i.e., decisions made within a protected private sphere, from outside influences by others. The reference to rights offers a strong argument against imposing restrictions on paid donations. Suppose that a well-informed individual, aware of the consequences of their decision, prefers to accept a payment for donating blood or plasma. Suppose that at the same time there is an organization that is willing to pay for that donation. Why would the regulator have the right to intervene in these private decisions?

The liberal rights argument deals with negative freedom, i.e., the absence of outside influences in decisions that belong to one's private sphere. Qualitative freedom is concerned with positive freedom, i.e., having the capacity, ability, or opportunity to do something. Titmuss (1970) and Singer (1973) argue that the freedom to give blood altruistically (i.e., for free) is a deeper and

qualitatively more valuable kind of freedom than the freedom to sell blood. They also claim that we must choose between the freedom to give for free and the freedom to sell and that, to protect the more valuable freedom to give, the freedom to sell should be denied.

Human dignity

One of Titmuss's (1970) central arguments against blood commodification is that it violates human dignity and disrespects personhood. Selling blood or organs instrumentalizes and devalues someone's body and person because body parts are important to personhood. The argument that paid donors are not treated as ends in themselves, but treated as things and valued merely as means to the ends of others, is mentioned by many other ethicists (e.g., Radin, 1996; Morelli, 1999; Satz, 2003; Dickenson, 2008; Buyx, 2009; Derpmann & Quante, 2015). It is also contained in the WHO Expert Consensus Statement (World Health Organization, 2012).

There is an obvious tension between this argument and the previous one on personal autonomy. Indeed, the person involved, i.e., the blood donor, will not necessarily hold this value (even if they were rational and well-informed). A blood donor who wants to be paid might simply believe that accepting payment is not unvirtuous, does not threaten human flourishing, and does not violate human dignity, as long as the donation and acceptance of payment is done autonomously with informed consent.

Social meanings

Communitarians claim that social meanings are important and that markets can change those meanings (Walzer, 1983). The meaning of non-market exchanges can become corrupted by the existence of market exchanges (Archard, 2002). Market valuations can have degrading effects on goods, practices, and relationships (Sandel, 2012). First, blood itself (the good) can have a social meaning: for a patient in need of blood, blood means a gift of life (Buyx, 2009; Derpmann & Quante 2015). Second, the practice of donating blood can also have a social meaning: an altruistic donor shows faith in other people to also act altruistically (Titmuss, 1970; Arrow, 1972). Third, the relationship between patients and donors may also be at stake if unpaid blood donations symbolize the responsibility to help others (Derpmann & Quante, 2015). According to communitarians, blood commodification can change the social meaning of these three aspects — donating the gift of life, having faith in others to act altruistically, and helping others — into an ordinary market transaction (Titmuss, 1970; Archard, 2002).

2B. Consequentialist arguments that are hard to test

Some arguments against blood commodification are consequentialist and therefore testable in principle. In practice however, some of these arguments turn out to be hard to test because convincing data is lacking, now and in the future (as such data is hard, if not impossible to collect). We discuss arguments against commodification that are based on the corruption of specific virtues (think of altruism, voluntarism and prosocial behaviour) and of social cohesion (such as social norms and relationships).

Virtues

Commodification of blood products could result in moral corruption, where markets degrade the virtues of altruism, voluntarism, and prosocial behaviour (e.g., Sandel, 2000). These virtues

can be considered to be an objective rather than a subjective good: a virtue is of value even if the person who has it does not value it. Undermining a virtue can be understood in a consequentialist way, e.g., as a decrease in the expression of a virtue. To some extent this is a consequentialist reinterpretation of the non-consequentialist argument of "social meanings." While testable in principle, the long-term effects of, e.g., donor payments on the development of virtues is very difficult, if not impossible to measure.

Social cohesion

Many people believe that a flourishing society requires strong social relationships between co-citizens who, contrary to families and friends, do not necessarily have close bonds with each other. In fact, without such bonds, it is difficult to introduce welfare institutions that go beyond mere self-interest and insurance. Institutions like unpaid blood donations can encourage values of community and citizenship and hence contribute to building up the feelings of solidarity that are the necessary foundation of the social welfare state. Titmuss (1970) claims that blood commodification can undermine feelings of social solidarity, leading to social disintegration and isolation. Blood commodification degrades society, erodes a sense of community, corrupts important social norms and values, lessens cultural bonds of the group, and impoverishes social relationships. That is why unpaid blood donation needs to be protected from market commodification.

A similar, but more nuanced argument is put forward by Wolff (2004). He also accepts that a flourishing society needs a sufficiently large sphere of altruistic behaviour in order to sustain crucial solidarity institutions. In many societies the system of voluntary donations of blood and plasma is an important part of that sphere. Even if there was nothing special about blood, it would still be wrong to break down that institution because it would narrow the (necessary) circle of solidarity.

Feelings of solidarity are in principle observable in surveys, or even in laboratory experiments. Yet, discovering the relation between social norms and institutions is inherently difficult. Time series analysis is confronted with the issue that social norms change slowly and may be influenced by other events and institutional changes. Cross-sectional comparisons of the situation in different countries would only give useful information if one can credibly control for all other relevant country differences. Moreover, the causal relationship can go in two directions. It is possible that a country keeps to voluntary donation, because social solidarity norms are strong. Yet, it is also possible that social solidarity norms remain strong because citizens live in a country with strong solidarity institutions, including voluntary non-paid donation of blood products.

2C. Testable consequentialist arguments

Some arguments against blood commodification are consequentialist and testable, not only in principle, but also in practice. We discuss arguments against the commodification of blood products on the basis of human flourishing and stigmatization, autonomy and consent, inequality and exploitation, and lower quality and quantity of donations. Some (but not all) of these arguments will be tested in the following sections.

Human flourishing and stigmatization

While it is not easy to test the presence of virtues in a direct way, it can perhaps be tested indirectly by looking at the effects on individual donors. Blood products bear special worth because they are essential for the functioning of a human being (Cohen, 1999; Malmqvist, 2016). Hence, as described before, in this view a virtuous person would not commodify blood. And, if this is a shared value within the community, voluntary unpaid donations should contribute to the flourishing of the donors, at least in the eyes of the community.

The opposite effect could be at work for people who do commodify their blood. Selling blood is not a socially accepted motive and is viewed with negative stereotypes such as an opportunistic use of one's body (Espeland, 1984). By putting a price on body parts, donors are believed to be desperate, self-interested and self-degrading (Kretzmann, 1992). This may lead to the moral stigmatization of paid donors. If we observe such stigmatization, this is evidence that blood commodification is considered to be unvirtuous.

Autonomy and consent

We have seen that autonomy and consent are important concepts within liberal theories. Yet, freedom of choice only increases real autonomy if an agent's decision coheres with the self, is consistent with deeply held values, and is fully endorsed by the agent (Taylor, 2005). If blood commodification is accompanied with misinformation (manipulation, lies, ignorance, imperfect information), irrationality (imperfect foresight), and coercion (force, threat) of donors, blood commodification harms donors by violating their consent or autonomy.

One way to empirically test whether donors are harmed by consent violation, is asking them whether they feel regret of a past donation, whether they would advise their family and friends not to donate, or whether it feels like someone else made the decision to donate.

The consent violation argument is most often used against organ commodification and organ markets, especially in poorer countries. For example Satz (2008) points out that almost four fifths of Indian kidney donors regretted their decision to sell a kidney and would dissuade others from doing so. In poor countries, regulatory institutions are weak and not always able to enforce better contracts and better education about the risks for organ sellers. Furthermore, people may be so poor and desperate that merely giving them better information about organ donation does not refrain them from selling their kidney. Even well-informed, but desperately poor kidney donors could regret their decision to donate an organ, which means that the conditions were not appropriate for guaranteeing valid consent. It is not clear how compelling these arguments are in the context of paying blood and plasma donors in high income countries (or regions, like Flanders).[3]

Inequality and exploitation

Inequality and exploitation are related to autonomy and consent. Titmuss (1970) argues that a paid donor system leads to exploitation of lower socio-economic groups, when richer people exploit the vulnerable position of the more desperate, poorer people. Poor donors are

[3] There is a growing concern about the link between social deprivation and paid plasma donation. Shafi (2023) cites examples from Austria, including the following statement of a 30-years old woman: "I felt shit after I donated plasma for money: shit for myself that what I was doing was for survival."

exploited when they would refuse to donate if they had better financial circumstances or better information (Del Pozo, 1994). The fewer the alternatives for earning money, the more coercive donor payments become, and the more undue pressure these payments exert (Beal & van Aken, 1992; Feinberg, 1986; Folléa, Seifried & de Wit, 2014; Wertheimer, 1987).

If poor donors are paid a low price due to a weaker bargaining position, while the recipients are richer members of society, this turns into exploitation. A small monetary payment might still be such a strong incentive for poor people, who have no other options to meet their basic needs, that it could be viewed as coercive (Dufner, 2015). Exploitation can be interpreted as an infringement on the building up of a fair reciprocal relation. As formulated by Arneson (2013), "if the benefits of one party are excessive in the sense that the norm of fair reciprocity is violated and the transaction parties are not treated as equals, the transaction is unfair."

While very low donor payments signal exploitation, high donor payments may also be problematic, because of the higher "undue inducement" for poorer people that threatens the quality of their consent (Malmqvist, 2016). Such payments may become irresistible offers that can compromise a donor's autonomy (Hughes, 1998).

The concern about exploitation of donors as a consequence of commodifying blood products is also reflected in the WHO Expert Consensus Statement (World Health Organization, 2012). However, there is another side of the medal too. If the poor, vulnerable person desperately needs the payment to attain a decent living, they will be made even worse off by prohibiting payment. Fighting exploitation and protecting autonomous choice is important, but the fight can be fought with other means than forbidding some market transactions (Satz, 2010).

Quality of blood products

In his seminal monograph, Titmuss (1974) strongly emphasized the danger that the quality of blood products would be lower in a system of paid donation. He notes that the quality of a person's blood is to some extent their own private information, e.g., about whether they suffer(ed) from an infectious disease. Altruistic non-paid donors are motivated to be honest in a situation where they know their blood is infected. Paid donors, however, may hide their infection risks because being honest about their infection results in rejection for donation and payment.

Quantity of blood products

Paying for blood products may induce subtle changes in the motivation of potential donors. Titmuss (1970) already noted that it could lead to motivational crowding-out, i.e., a situation in which extrinsic motivation (e.g., to earn money) crowds out intrinsic motivation (e.g., to help others).

Paying for blood products may also crowd out signalling motivations (Bénabou and Tirole, 2006). Signalling occurs when individuals perform activities (such as donating blood) in order to signal one's image ("I am a prosocial person") either to oneself (self-signalling, in order to get the feeling that one is a good person) or to others (social signalling, in order to build up the reputation that one is a good person). Donors donate, not because it helps others, but because of the kind of person they want to be (Bowles & Polania-Reyes, 2012). Paying for blood

may add noise to the signal (maybe I am a greedy person who donates for money) and can thus decrease the signalling motivation.

Related to self-signalling and social signalling is price signalling. In case of price signalling, donors do not send information to others, but receive information as captured in the prices. Paying for blood products may signal that donations are painful or time-consuming, and may decrease donations. On the other hand, paying for blood products can also signal an urgent need, and may increase the donations of altruistic donors.

A different form of crowding-out is contributional crowding-out (Sugden, 1982; Andreoni, 1990, 1993). This refers to the crowding-out of one's prosocial behaviour by the prosocial behaviour of others – the typical free rider mechanism in a situation with public goods. Even without incentives that increase external motivation, someone's prosocial behaviour can decrease when that person observes that other people are sufficiently performing the prosocial behaviour. So-called "pure altruists" only care about the total contribution (i.e., the total sum of contributions by all members of society) and not about who contributes. They may therefore decrease their personal contribution to a public good when others increase their contributions. Applied to blood donation, pure altruists may decrease their donations upon increasing donor payments, not because of a lack of motivation, but because they expect others to donate more, so that their own donation becomes less needed.

The presence of these different *motivational* mechanisms does not necessarily imply that *behavioural* crowding-out will arise, that is, that the total quantity of donations will decrease when paying donors. In fact, the net effect cannot be predicted a priori. First, the decrease in (intrinsic and/or signalling) motivation to donate is counteracted by an increase in the extrinsic motivation to donate (for money), so that the net effect can still be positive for some of the existing donors. As explained before, the effect of price signalling is also ambiguous. Second, entirely new donors, who are attracted by the payment, may start donating.[4] Third, the mechanisms may play out differently for different blood products, with donors switching from one blood product to another.

One can attempt to test these different motivational mechanisms with questionnaires or lab and field experiments. This is not an easy task, however. On the other hand, behavioural crowding-out can be tested, as the quantity of donations is observable. We will summarize the results of some of these tests in section 4. Before we turn to the empirical results however, we must point to subtle differences between different incentives, which may matter empirically.

First, payments can be cash, quasi-cash (vouchers that can be exchanged for gift items, a practice used in Flanders), or in-kind (such as a t-shirt, a mug, a snack, or a health test). The effect of €10 in cash might be different from €10 in vouchers, which might in turn be different from €10 in-kind. The more liquid the reward, the higher its extrinsic value (cash is more liquid than quasi-cash, which is in turn more liquid than a gift item). But we can also expect that, for

[4] This change in the donation pool may also lead to latent crowding-out, that is, withdrawing incentives may lead to a lower level of donations then before the introduction of the incentives, because the newcomers that were attracted by the incentive do not stay, while those who stopped donating because of the introduction of the payment do not return.

the same reason, the motivational crowding-out is higher for cash than for quasi-cash and in turn higher for quasi-cash than for in-kind.

Second, the effect of payments on motivation can be non-linear. A change from no reward to a very small reward may have a negative impact on the motivation to donate (e.g., if one feels insulted by the ridiculously small reward). Similarly, very high rewards may at some point also have a negative impact, e.g., if one infers from some reward level onwards that donations are likely to be damaging to your health ("why would they otherwise pay so much?").

Third, visibility and framing may matter, especially for signalling motivations. Payments can be visible or not to others: if not, then paying donors is less likely to decrease social signalling motivations. Payments can also be labelled as compensations, say, for expenses related to donations, such as travel costs and travel time. Labelled as compensations, they may be less likely to decrease signalling motivations.

3. Views on paid donations in Flanders and Germany

Opinions of the general public cannot settle ethical arguments, but it is nevertheless interesting to know what people think about paying for blood products. This may enrich the ethical debate on principles and, more importantly, it also yields insights into the feasibility of various policy options. It will indeed not be easy to introduce institutional changes if a majority of the population is against. We discuss the results of two surveys in Flanders and compare it with the results of a survey in Germany. We focus on Germany as it is 'close' to Flanders in many respects (e.g., at the economic, demographic, and cultural level), yet paying for plasma is allowed in Germany. The surveys also contained questions to uncover the (intended) willingness to donate of the respondents under different incentives. These results will be discussed in section 4. In this section we focus on opinions and moral views.

3A. A description of the three surveys

A first online survey was distributed to a panel of a market research company in December 2021. The panel is a sample of the Flemish population, representative according to age (18 to 65 years), gender, and education level (having a higher education degree). 3080 participants completed the survey and answered the test question correctly. Two thirds of the respondents declared themselves eligible to donate blood or plasma and 44% of the respondents had donated before at least once. The survey contained questions about altruistic behaviours, blood donation intentions, and opinions (e.g., moral objections) on paying donors.

A second online survey was distributed to a panel of a market research company in February, 2023. The panel is again a sample of the Flemish population, representative according to age (18 to 65 years), gender, and education level. 1000 participants completed the survey and answered the test question correctly. Again, two thirds of the respondents declared themselves eligible to donate blood or plasma and 40% of the respondents had donated before at least once. Next to some questions about altruistic behaviour and incentives for blood donation, the survey especially focused on opinions about the institutional settings of blood donations (for example, donation centres run by a non-commercial, non-profit organization like the Red Cross versus donation centres run by a for-profit company).

Finally, a third survey was distributed to a panel of a market research company in June, 2023. The panel is a sample of the German population, representative according to age (18 to 98 years), gender, and education level (having a higher education degree). 1724 participants are included in the analyses, as they completed the survey and answered the test question correctly.[5] The German survey focused especially on plasma donors: 85% of the respondents

[5] The survey was distributed until a target of 300 plasma donors was reached (i.e., 300 people who indicated they donated plasma at least once in the previous year, who completed the survey, and answered the test question correctly). In a first wave (N=500), the survey was sent to randomly selected municipalities. In a second wave (N=1224), the survey was sent to people in 55 selected municipalities that have plasma donation centres. The average distance to the nearest donation centre in the selected municipalities of the second wave was 2 km shorter than in the randomly selected municipalities of the first wave, but this shorter distance to a donation centre does not significantly affect the results.

declared themselves eligible to donate plasma and 17% of the respondents had donated plasma in the previous twelve months.

3B. Views in Flanders

Let us first look, as a starter, at the answers to a general and rather vaguely formulated question: "How do you feel about giving blood donors money for donating blood?" The answers of the respondents in the first Flemish survey are shown in figure 1. The distribution is slightly skewed towards negative feelings about giving money for donating blood, but this effect is not outspoken. If we look at subgroups, then eligible donors, younger donors (below the median age of 45), and male donors are more positive; there are no clear differences depending on past donations and income.[6]

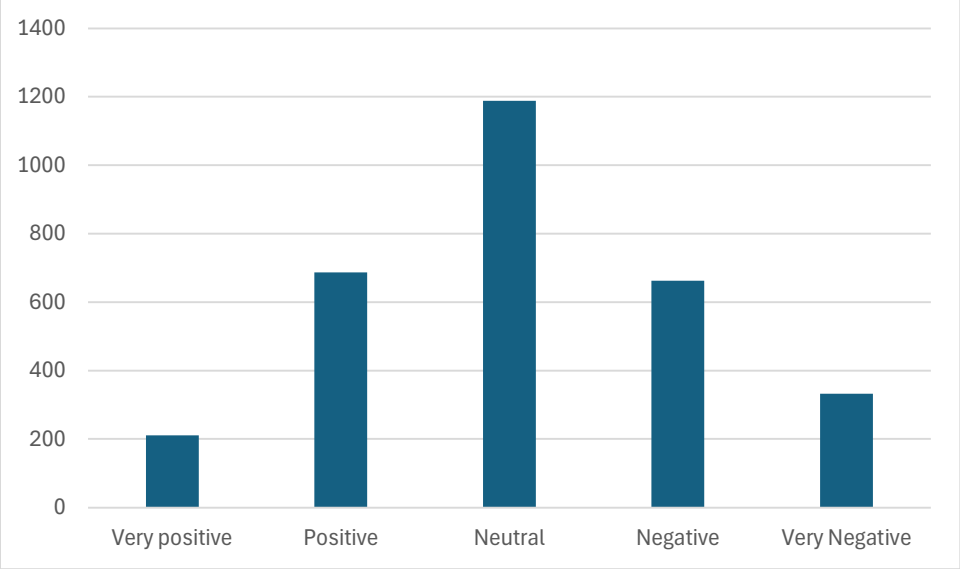


Figure 1. Attitudes towards paying donors (Flemish survey, 2021)

In the second Flemish survey, we ask a similar question, but differentiate it according to the institutional setting: what is your position on paying donors by (i) a non-profit donation centre such as the Red Cross; (ii) a for-profit commercial donation centre? The distribution of answers now shows a slightly more positive attitude towards paying donors (see figure 2). Comparing the two panels of figure 2 suggests that respondents take a more positive attitude if a non-profit donation centre pays, but the differences are small.[7] We will return to the effect of institutions later in this section.

All in all, we conclude that the attitudes about paying donors diverge: roughly speaking, the amount of (very) positive individuals, neutral individuals, and (very) negative individuals are more or less equal. The small differences between the surveys may be due to framing effects: the first reaction may be more negative when the question is about "giving money for […]

[6] These detailed results are available from the authors on request. The detailed eligibility conditions implemented by the Belgian Red Cross-Flanders for blood and/or plasma donations can be found on their website: https://en.rodekruis.be/wat-kan-jij-doen/geef-bloed-of-plasma/bloed-geven-hoe-waar-en-mag-ik/.

[7] Results for the subgroups are similar (more positive for eligible, younger, and male donors), but the differences are smaller or even absent if the for-profit pays.

blood," compared to the more neutral formulation "paying donors." In fact, there is by now a lot of evidence that the answers to simple and general questions give only an idea about vague feelings of the respondents and that respondents may formulate different and more reliable answers when they get more information about the context.[8]

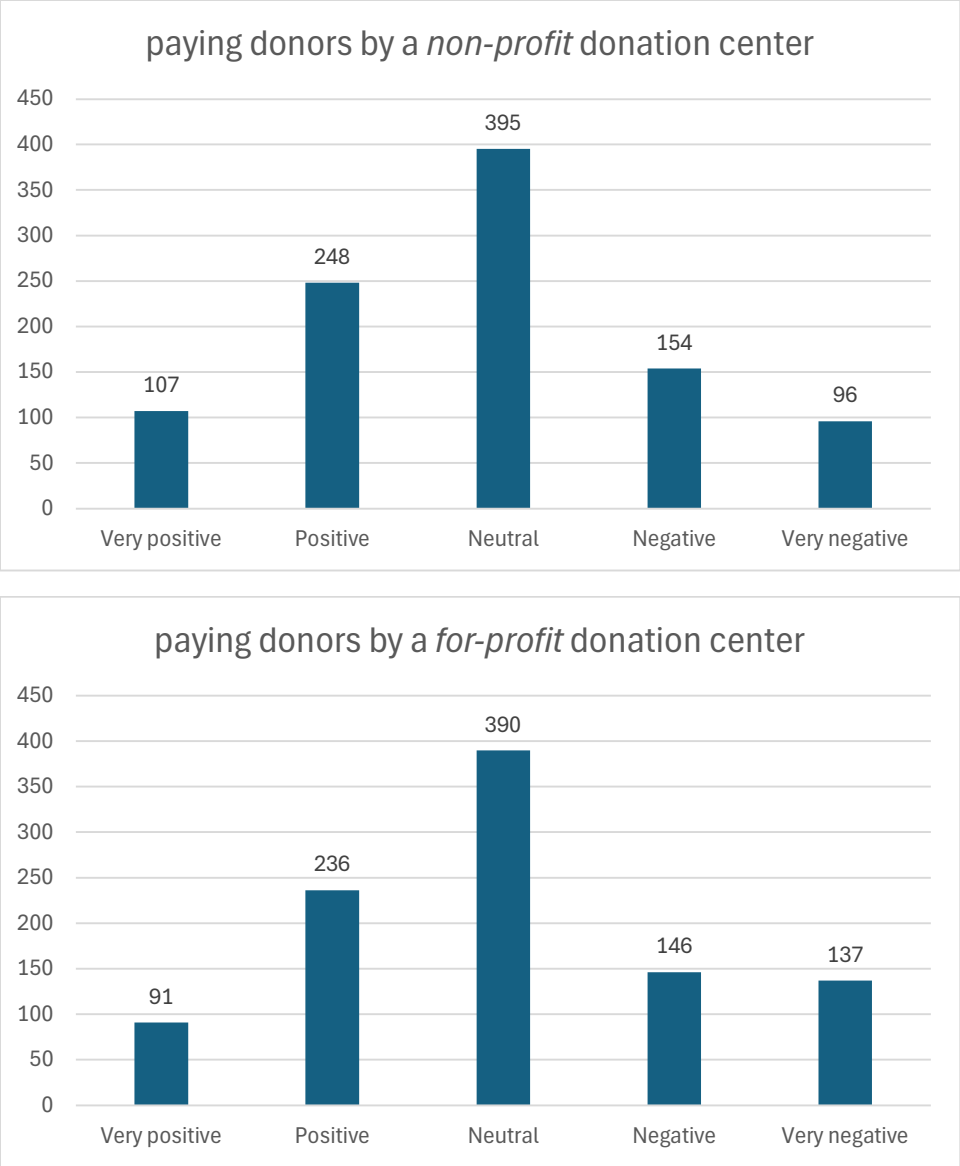


Figure 2. Attitudes towards paying donors according to institution (Flemish survey, 2023)

The instability of these simple attitudes is convincingly illustrated by the different answers to a related question. In both Flemish surveys we asked what people think about the statement: "donating blood should only be an altruistic (selfless) act and donors should therefore not be paid to donate." Results are shown in figure 3, and they are now clearly skewed toward agreement. Indeed, if one explicitly gives arguments (altruism in this case) that donors should not be paid, then some people with positive attitudes towards paying donors change their mind.[9] More than half of the respondents seem to agree that blood donors should not be paid

[8] See Stantcheva (2023) for a general treatment and Stantcheva (2021) for an application to taxation.
[9] Also the framing ('not paying donors' here versus 'paying donors' before) may play a role.

because of altruism. This effect is stronger for people who donated before, older donors, and non-eligible donors.

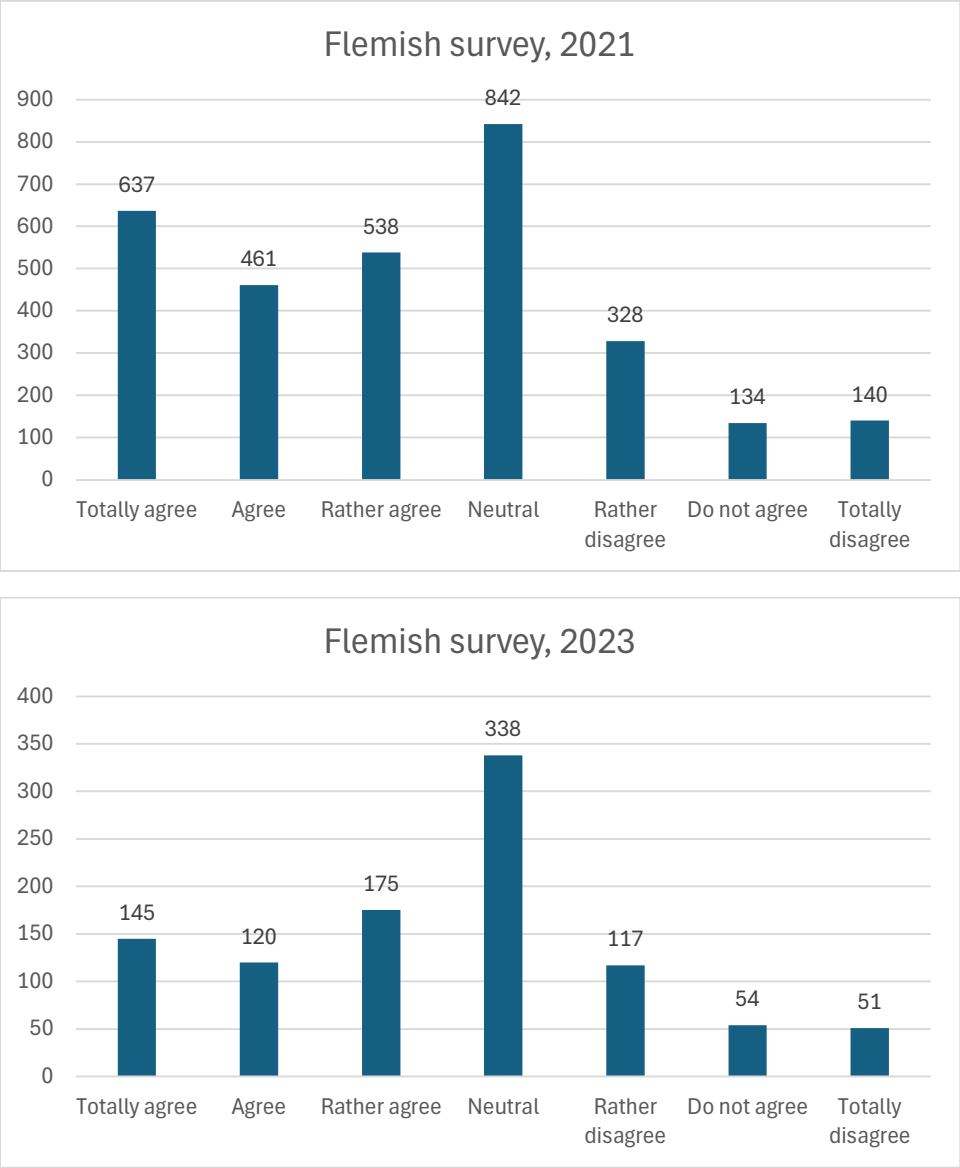


Figure 3. Attitude towards not paying donors because donating should be an altruistic act (Flemish surveys, 2021 and 2023)

Somewhat related to altruism is the notion of reciprocity that was also introduced in the previous section. Reciprocity is different from altruism as it basically is a "quid pro quo" argument. In the setting of blood donations, it may even be seen as a "market oriented" consideration. In the second Flemish survey, we asked how people think about the statement: "receiving money for a blood donation is fair because it is a sign of reciprocity between the donor and the donation centre. Give a little, take a little." Figure 4 shows that the Flemish population is divided about the idea: about one third agrees that there is an element of reciprocity involved, about one third disagrees, about one third has no clear opinion.

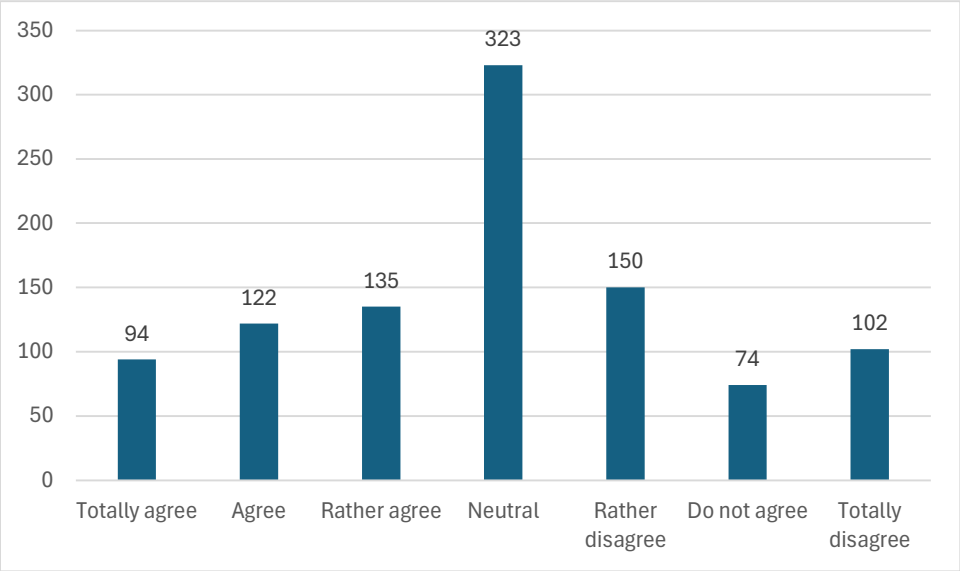


Figure 4. Being paid is fair because it is a sign of reciprocity (Flemish survey, 2023)

The notions of altruism and reciprocity bring us in the realm of the ethical arguments pro and contra that have been summarized in the previous section. In the first Flemish survey, we asked respondents how they think about possible advantages and disadvantages *at societal level* if donors were paid. The respondents could indicate more than one item when answering the question. The results in figure 5 offer a clear picture.

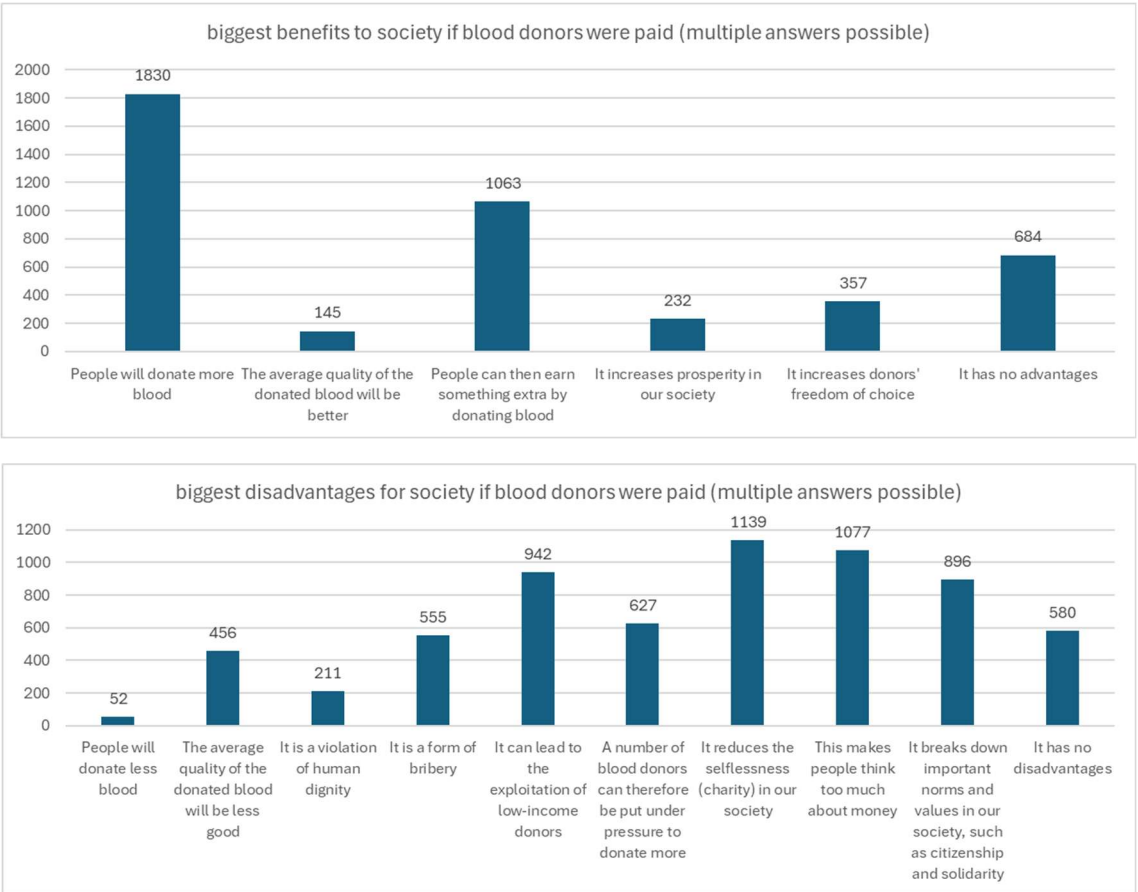


Figure 5. Societal advantages and disadvantages if donors were paid (Flemish survey, 2021)

It is instructive to compare the support for the "advantages" in the upper panel and the "disadvantages" in the lower panel. First, there is only a negligible minority that thinks that paying donors will lower the amount of blood donated. On the contrary, a large majority expects that people would donate more blood. Behavioural crowding-out is definitely not thought of as a disadvantage by the population. Second, while many respondents appreciate that paying donors will give them some extra earnings, possibly even increasing prosperity in society, an equally large share of respondents is worried that it may lead to the exploitation of low-income donors, or considers donor payments as a form of bribery. Third, only a small fraction of the respondents expect that the average quality of the donated blood will be better in a system of paid donations, a much larger (but still a minority) share is worried that the quality of the blood may decline. Fourth, there is strong support for a cluster of opinions about the decline of values in society. Respondents are concerned that paying donors would reduce the selflessness in society, make people think too much about money, and break down important norms and values in our society, such as citizenship and solidarity. Figure 6 gives a more detailed breakdown of the answers to the latter question. This attitude is stronger among female, older, and non-eligible respondents.

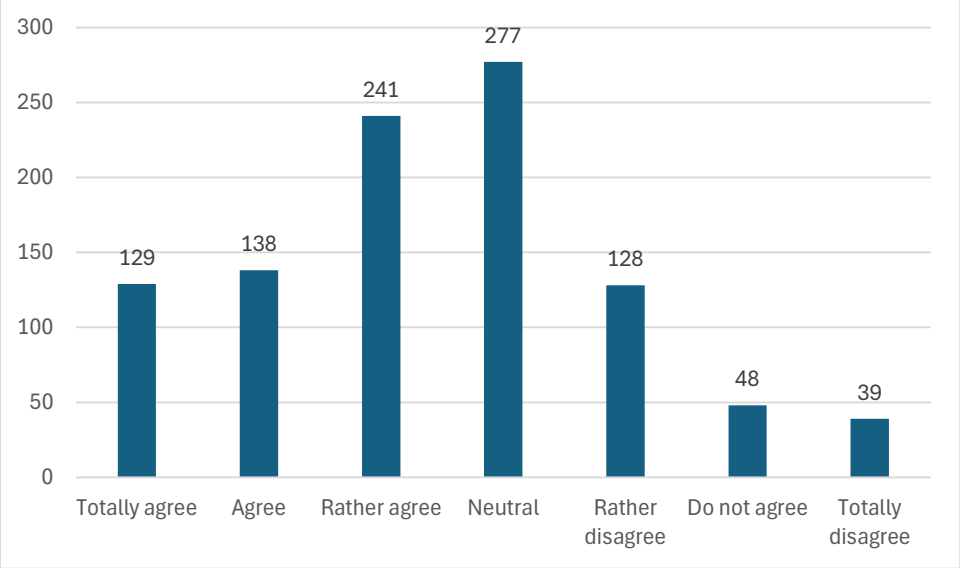


Figure 6. paying donors breaks down important norms and values (Flemish survey, 2023)

The concern about norms and values seems to translate also into a preference for non-profit over for-profit donation centres. The second Flemish survey focused explicitly on this aspect. The results in figure 7 (upper left panel) show that people prefer to donate at a non-profit donation centre such as the Red Cross. Related, they claim that they will not necessarily donate where they are best paid (upper right panel). Many people agree that allowing for-profit donation centres to enter the market will lead to competition, which they consider to be bad (lower left panel). On the other hand, they also realize that this may lead to more freedom of choice for donors, which they consider important (lower right). As we have seen in figure 5 however, the importance attached to freedom is nuanced in a broader context, and certainly dominated by other considerations.

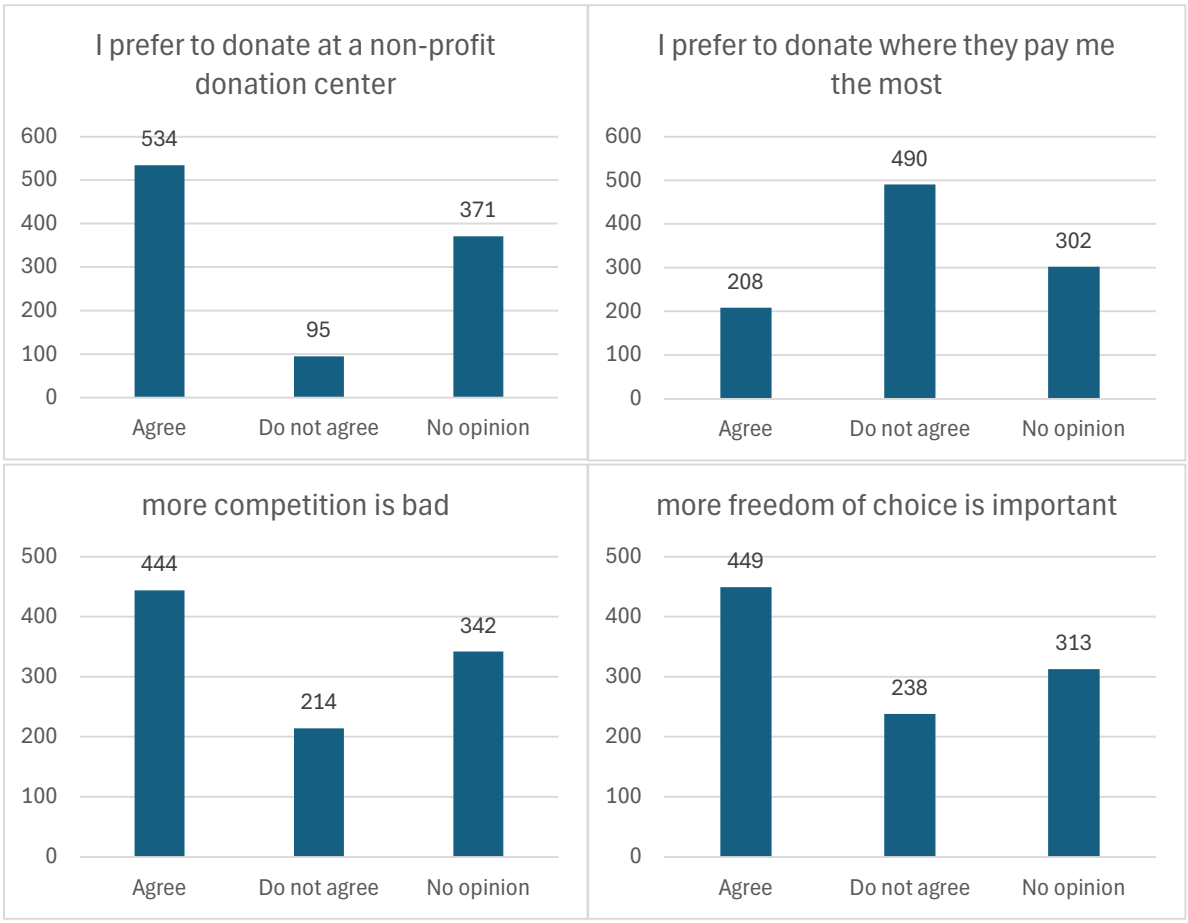


Figure 7. non-profit versus for-profit donation centres (Flemish survey, 2023)

Until now, we focused on broader societal aspects. Of course, attitudes towards paid donations can, to some extent, also be explained by the perception of personal advantages and disadvantages. A consideration in between the societal and personal level is the allocation of the cost of paying donors. Figure 8 shows that a large majority of the Flemish respondents thinks that ultimately patients, i.e., the respondents themselves, will pay for these costs.

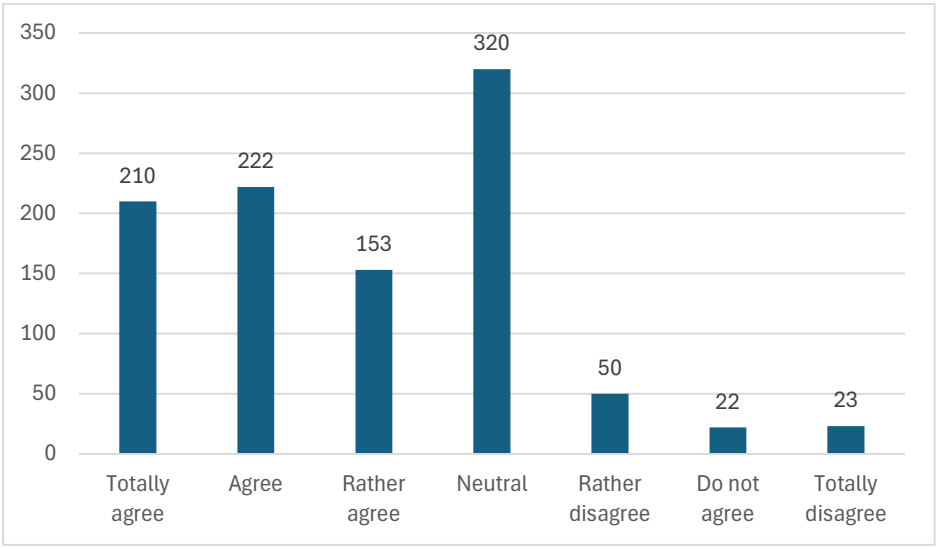


Figure 8. patients will pay for the extra cost of paying blood donors (Flemish survey, 2023)

The survey also contained a question about the *personal*, rather than societal advantages and disadvantages of being paid as a donor. The results are shown in figure 9. Again, individuals could indicate more than one answer. The dominant reaction is that there are neither personal advantages nor disadvantages of being paid as a donor.[10] The other results are well in line with the answers about the societal (dis)advantages. Many respondents appreciate that being paid would give them extra financial security and the possibility to buy more things. Some would also feel more motivated to give. However, some fear that they would feel bribed. There may be an effect on trust in the donor centre, but this can go in both directions with equal (small) shares of respondents saying that their confidence in the blood centre would increase and decrease. Striking is the considerable fraction of respondents that would feel ashamed or "too greedy" when accepting money. This is consistent with the phenomenon of self-signalling (conscience) that was described in the second section. Disadvantages in line with social signalling theories (reputation) are present too, but seem less important.

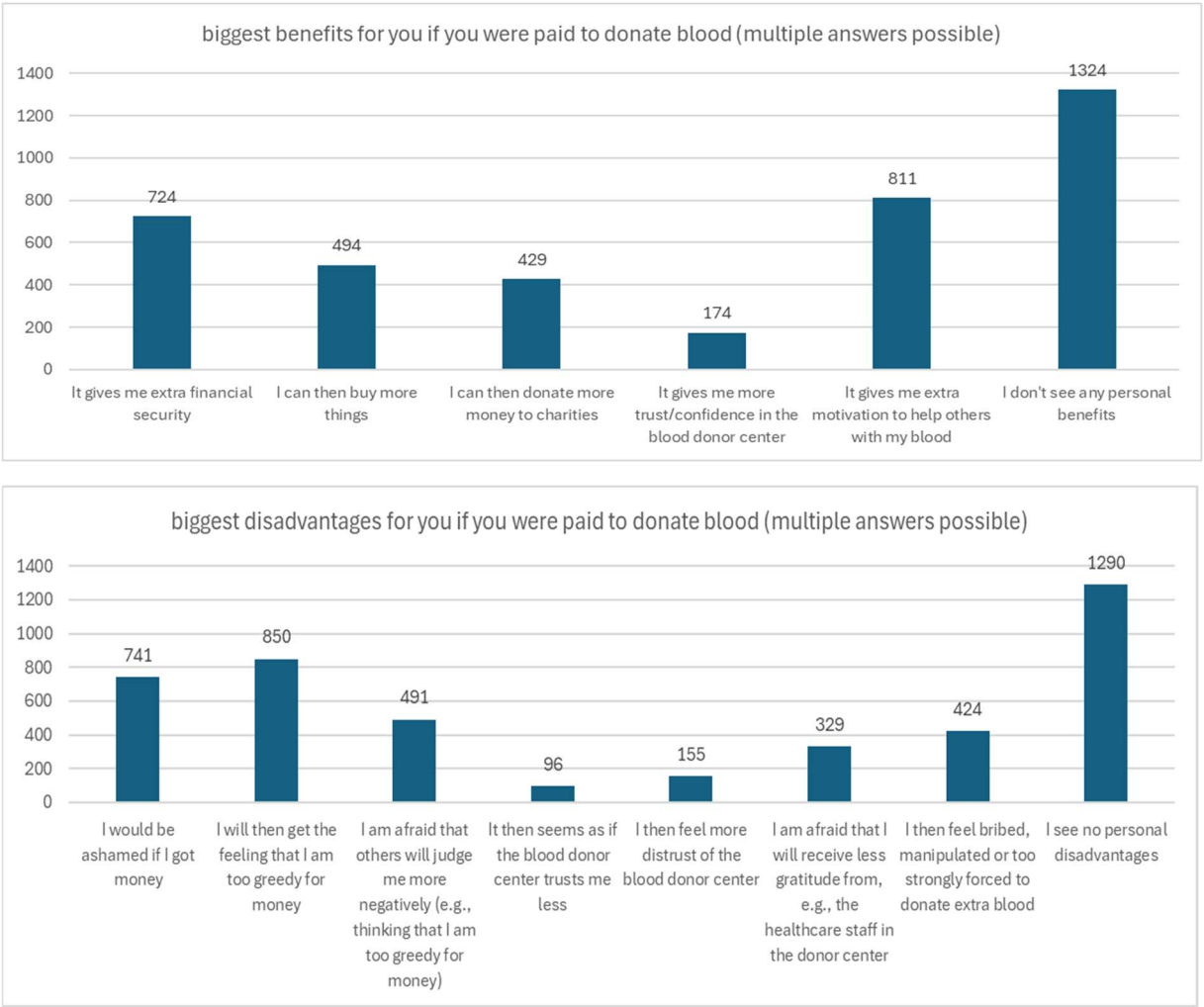


Figure 9. Personal advantages and disadvantages if donors were paid (Flemish survey, 2021)

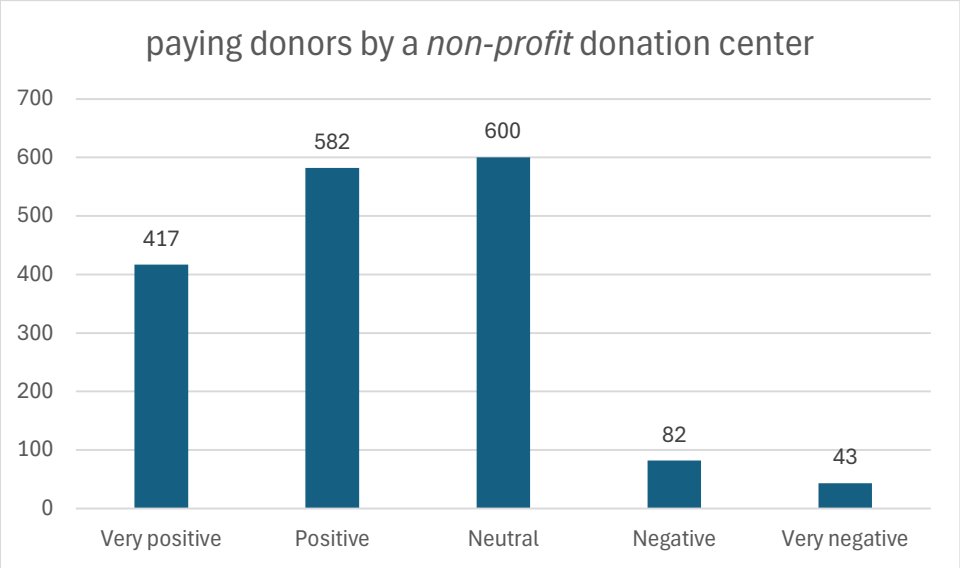
[10] This dominant reaction is surprisingly similar among eligible and non-eligible respondents. Non-eligible respondents could imagine being eligible or think about their past situation when they were eligible (almost half of the non-eligible respondents have donated in the past).

3C. A comparison with Germany

The German survey focused on plasma donors. 61% of these donors donated plasma at a non-profit donation centre before, 27% at a private, for-profit centre, and 13% at a public, government-run centre. Donation rates per donor at the for-profit are higher than at the other donation centres, such that about half of the plasma is collected at the for-profit plasma collectors.

Rewarding plasma donations is very common in Germany. Roughly half of the non-profit and public donation centres offers gift rewards, the other half pays their donors. When a payment is offered at these centres, the average payment amount is about 25 euro per donation. Most of the for-profit donation centres pay their donors. Their average payment is 30 euro per donation.

Germans have a far more positive attitude towards paying donors than Flemish people, both for blood and plasma. This is clearly shown by a comparison of figure 10 (for Germany) with figure 2 (for Flanders).



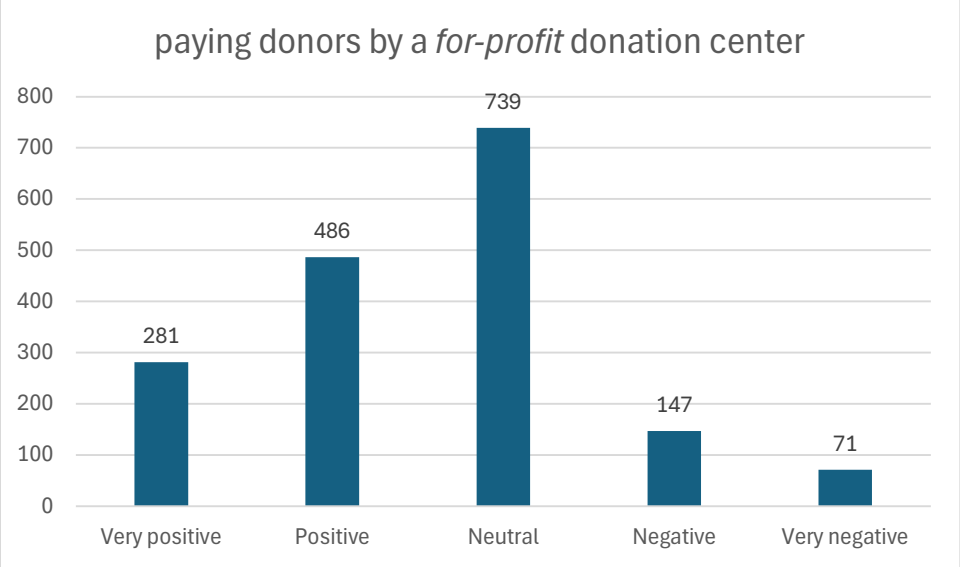


Figure 10. Attitudes towards paying donors according to institution (German survey, 2023)

About 60% of the German respondents feels positive about donors being paid by non-profit donation centres. This is twice as much as in Flanders. Interestingly, despite the more positive attitude towards monetary payments, the preference for non-profit donation centres remains, with less than half of the German respondents having positive feelings about donor payments by a for-profit donation centre. In both Flanders and Germany we see younger people, men, and past donors having a more positive attitude about monetary incentives. East Germans also have a more positive attitude compared to West Germans. This result is in line with the finding in the Eurobarometer 2014 survey (Gorleer, Bracke & Hustinx, 2023) that people in former communist countries (Eastern Europe) have a more positive attitude about paying donors.

The more positive attitude towards paying donors extends towards the more specific questions. A majority of Germans disagrees with the statement that altruism should be the main motivation for donating blood products (figure 11) and, on the contrary, believes that paying donors is a sign of reciprocity and therefore fair (figure 12).

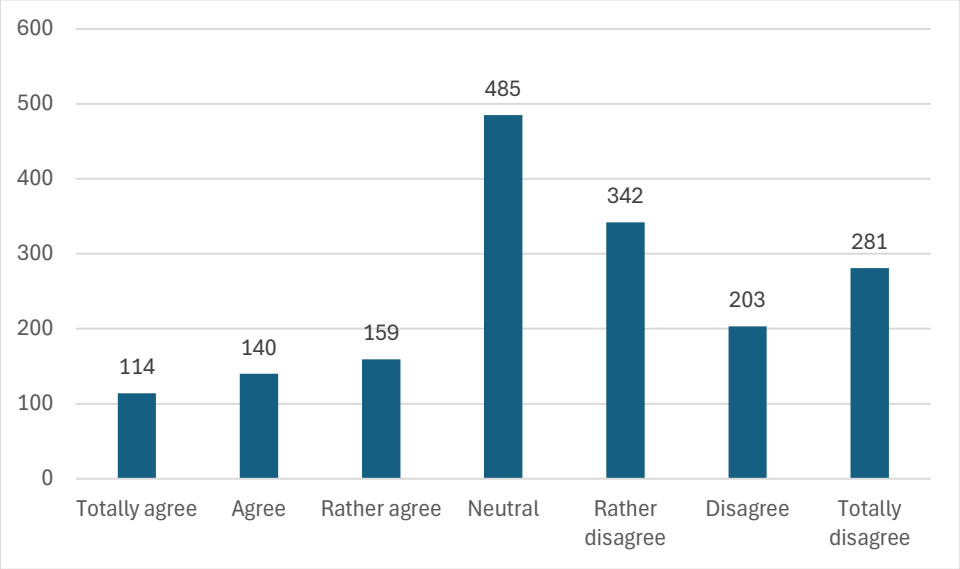


Figure 11. Attitude towards not paying donors because donating should be an altruistic act (German survey, 2023)

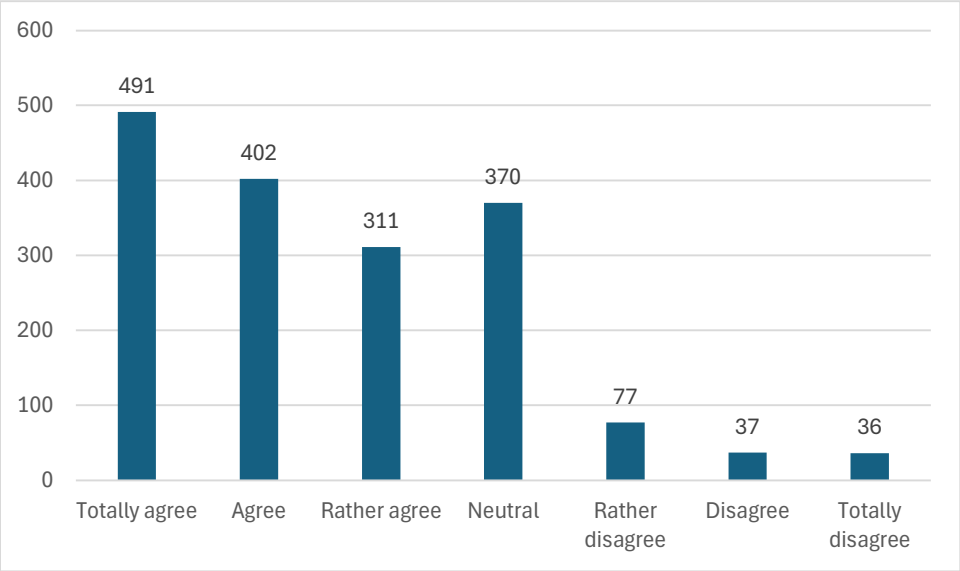


Figure 12. paying donors is fair because it is a sign of reciprocity (German survey, 2023)

Unsurprisingly, they also disagree that paying donors breaks down important norms and values in society such as charity, citizenship and solidarity (figure 13).

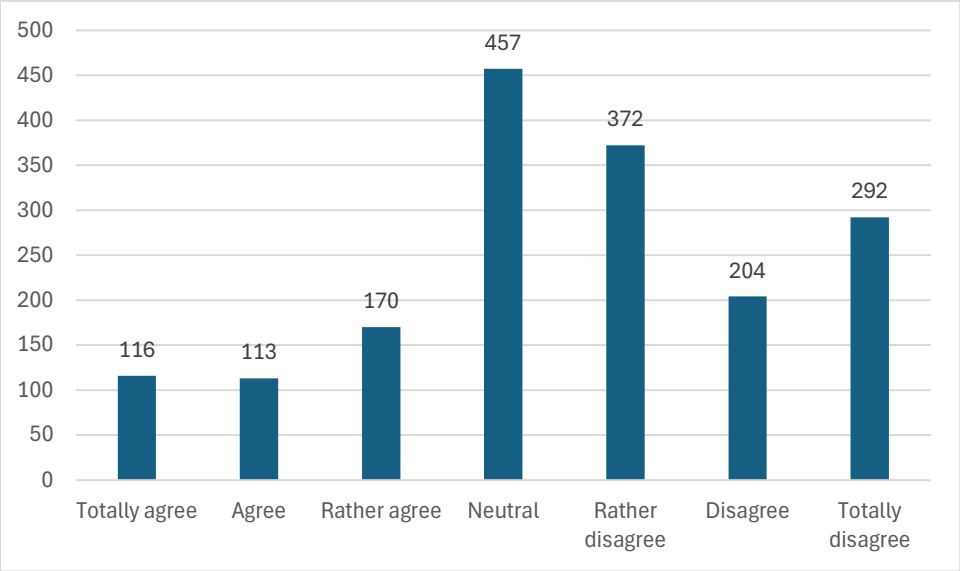


Figure 13. paying donors breaks down important norms and values (German survey, 2023)

The differences between Flanders and Germany highlight the classic causality problem that was already introduced in section 2. In one interpretation, payments for plasma donations have been introduced in Germany, because a majority of Germans is not opposed to it. Even more, many Germans seem to see payments as an indication of fair reciprocity. Introducing payments in Flanders would be more difficult, as a majority of the population is against. In a second interpretation, it is the introduction of payments itself that has induced a gradual change in attitudes in Germany. Again, formulated in more challenging terms: the fact that a majority of Germans rejects the idea that paying donors breaks down important norms and values, is the best possible evidence to show that introducing payments has indeed had that undesired effect in Germany. In principle, determining the direction of causation is an

empirical question, but, as mentioned in the previous section, a very difficult one to answer without data over a very long period and in a dynamic setting where attitudes and institutions are in constant interaction. Moreover, this second interpretation confronts us directly with an important ethical choice. If one believes that paying donors does not impact social cohesion, citizenship, and solidarity, one can try to introduce it, trusting that the opposition will gradually go away. If, on the other hand, one is convinced that a society can only thrive if there are sufficient chances for citizens to show solidarity, and that donations of blood products are a prime example of this, then introducing donations may be a dangerous one-way street: once individuals have changed their attitudes, returning to an (ethically more attractive) system of altruistic donations may become very difficult.

4. Behavioural crowding-out in Flanders?

We have seen that survey respondents consider a higher blood supply as the biggest societal advantage of paying donors. This is in contrast with concerns in the literature that paying donors could crowd-out altruistic or signalling motivations. If such a motivational crowding-out is sufficiently strong — stronger than the pecuniary incentive of the payment itself — then behavioural crowding-out could arise: paying donors then leads to a lower supply of blood products. Since there are different motivational forces pushing in different directions, the size of the net effect is ultimately an empirical question.

While it is very difficult to disentangle the different motivations empirically, this net effect, i.e., whether total donations decrease or increase after introducing payments, can in principle be tested. In this section we summarize some evidence on this question. In Flanders, paying donors is not allowed, so there is no direct comparative evidence available and it is impossible to set up a field experiment with large monetary incentives.[11] We can however derive some useful insights from the experiences in other countries, where paying is allowed. We will summarize the international experimental evidence in section 4A. Moreover, while experiments with large payments are legally prohibited in Flanders, we can still use other data sources to assess the impact of a payment on the donation rate. First, we ask people how much they would donate if they were paid for donations (section 4B). Second, we assess in a series of field experiments the impact of a small extra reward that remains within the legal restrictions (section 4C).

4A. Large cash and quasi-cash rewards: international evidence

Bruers (2022) describes the results of a meta-analysis covering the studies that focused on the effect of large cash and quasi-cash rewards on the amount of blood donations. Most studies offer quasi-cash rewards, ranging from a 3.6$ lottery ticket to a local supermarket voucher worth 38$; two studies offer cash ($7 and $19). Table 1 summarizes the findings.

The first column shows the so-called marginal donation rate, i.e., the number of additional blood units per 1000 people per year for an increase in the monetary incentive of one dollar. The second column indicates the confidence interval of the estimates. Three estimates are not significantly different from zero, but none of them is significantly negative. According to all the other estimates, the effect of payment on the donation rate is significantly positive. Combining the different estimates using a random effects model, Bruers (2022) estimates that 0.36 extra blood units are donated per 1000 inhabitants per year per extra dollar. In a more restricted analysis (including only the most reliable and more homogeneous studies) the marginal donation rate increases to 1.01 extra blood units per 1000 inhabitants per year per extra dollar. To sum up, the results show that there is no evidence of behavioural crowding-out, at the contrary.

[11] In Flanders, vouchers (that can be exchanged for gift items) are offered to donors of blood products: blood donors get one voucher (worth 1.5 euro), plasma donors two, and platelet donors three.

Table 1. Overview of marginal donation rates

	Effect size	95% confidence interval
Mellström & Johannesson (2008)	-1,55	(-5,58 ; 2,48)
Goette & Stutzer (2008)	1,40	(-0,15 ; 2,95)
Lacetera et al (2012)	1,46	(0,17 ; 2,74)
Lacetera et al (2014), $5	3,04	(0,31 ; 5,77)
Lacetera et al (2014), $10	2,39	(1,12 ;3,66)
Lacetera et al (2014), $15	1,31	(0,31 ; 2,32)
Iajya et al (2013), AR$20	-0,04	(-0,17 ; 0,08)
Iajya et al (2013), AR$60	0,14	(0,06 ; 0,23)
Iajya et al (2013), AR$100	0,21	(0,12 ; 0,29)
Sun et al (2015)	0,69	(0,27 ; 1,10)
Machado (2016)	0,25	(0,03 ; 0,48)
Becker et al (2019)	0,42	(0,36 ; 0,48)
Total	0,36	(0,18 ; 0,53)

Note: Table 1 is based on Bruers (2022, Table 4).

Several points are worth emphasizing. First, there is a fairly large variation among the different studies, so, context and local conditions may matter. Indeed, we have seen already in the previous section that attitudes differ considerably in two otherwise similar countries (Flanders and Germany), and it is natural to assume that this will have an influence on behaviour. Second, none of the studies in the meta-analysis are well-suited to say something about the long-term effects of paying donors. Third, the absence of behavioural crowding-out does not imply that there are no negative effects on some motivations. It only implies that the motivational crowding-out, if present, is not too strong – or, formulated better, that the net effect of paying donors on the amount donated is positive.

While the effect is positive, one can wonder whether it is very large. In this respect, it is useful to compute the marginal cost of donations, i.e., the extra cost per extra donation (also called the marginal cost). It is important to realize that this is higher than the value of the reward (between $3.6 and $38 in the different studies) because the reward must be offered to all donors, including donors who would have donated for free. On the basis of the different studies, Bruers (2022) shows that it costs between $22 and $121 to increase the blood supply with one extra unit of blood.[12]

4B. Hypothetical cash rewards: results from surveys in Flanders

It is always tricky to derive predictions about actual behaviour from the answers on hypothetical questions in survey studies. Yet, with due caution, these answers may still be informative, and, as said, in a situation where real behavioural experiments are made

[12] This (and later) marginal cost computations assume that the cost of donor recruitment and retention, donor screening, medical procedures, testing, processing, storing, delivering, research, supporting services and overhead are independent of the method used to reward donors and are approximately linear in the number of donations and can therefore be neglected.

impossible by government regulation, they are basically the only available source of information.

In our Flemish surveys we ask people how many times they intend to donate blood next year (in the current system of voluntary and unpaid donations in Flanders).[13] We also ask how many times they intend to donate if they would receive 5 euro, 25 euro, or 50 euro per donation. Figure 14 shows the average donation rate in our first (and largest) survey under these four scenarios, together with the 95% confidence interval.

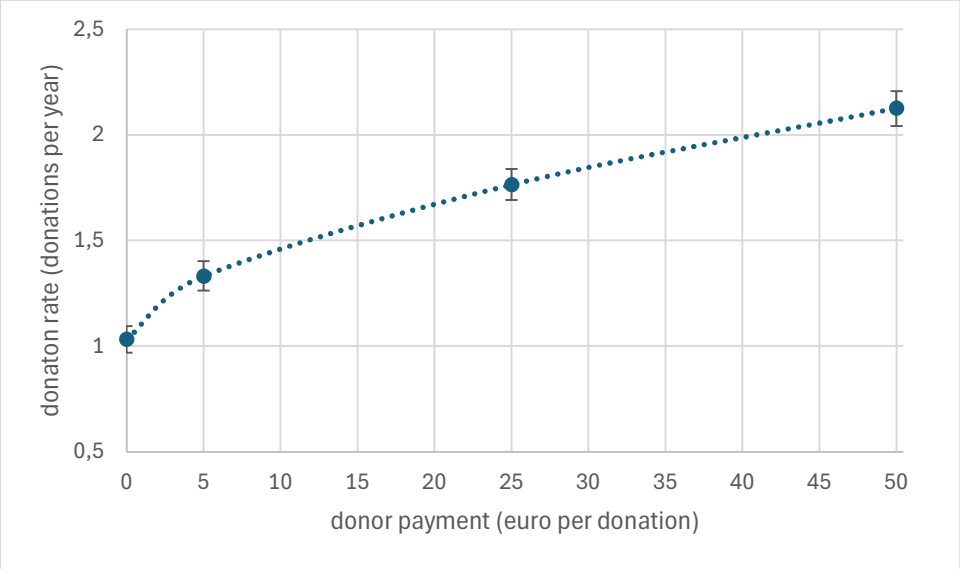


Figure 14. intentions to donate (Flemish survey, 2021)

Figure 14 shows that people's intentions to donate increase with the amount of donor payment. On average they plan to donate about one time next year, but if they were paid, they would donate more: about 1.33 units (if paid €5 per donation), 1.76 units (if paid €25) and 2.12 units (if paid €50). Moreover, the curve increases in a concave way. In other words, the increase in donations diminishes with the incentive: if they are paid 25 euro, then they would on average donate about 0.73 units extra, but if the payment increases with another 25 euro (from 25 to 50 euro), they would donate only 0.36 units extra. At first sight, this curvature may reflect a psychological mechanism, similar to "decreasing marginal utility of money," but this is unlikely with such small money amounts. A more likely explanation is a sharp increase in the "marginal disutility" of an additional donation. Moreover, there is also a ceiling effect, since people are allowed to donate blood only four times per year.

We can now again compute the marginal cost of one extra donation, obtained through monetary payments: the extra cost per extra donation is €22, €60, and €97 if the incentive is changed from €0 to respectively €5, €25 and €50. These estimates are in line with the international experimental evidence summarized in section 4A (with marginal costs between $22 and $121).

[13] For the calculations in this subsection, we restrict the sample to those respondents who are eligible to donate blood. To avoid order effects, the order of the different blocks in the survey (e.g. about motivations and about willingness to donate) was randomized.

Figure 15 shows the differences in the intentions to donate blood for different demographic groups (men versus women, younger versus older than the median age, richer versus poorer than the median income). The figures inform us about three possible reasons for the underlying differences between social groups. First, their level of donations may be different, which would be captured by the height of the curve: the more someone intends to donate under the different scenarios, the higher the curve. Second, their sensitivity to incentives may be different too, which would be captured by the steepness of the curve: the more sensitive someone is to incentives, the steeper the curve. Third, individuals can also differ in the curvature of their donation curve: a higher curvature would imply that they initially (for low incentive amounts) are more sensitive to incentives, but less sensitive afterwards.

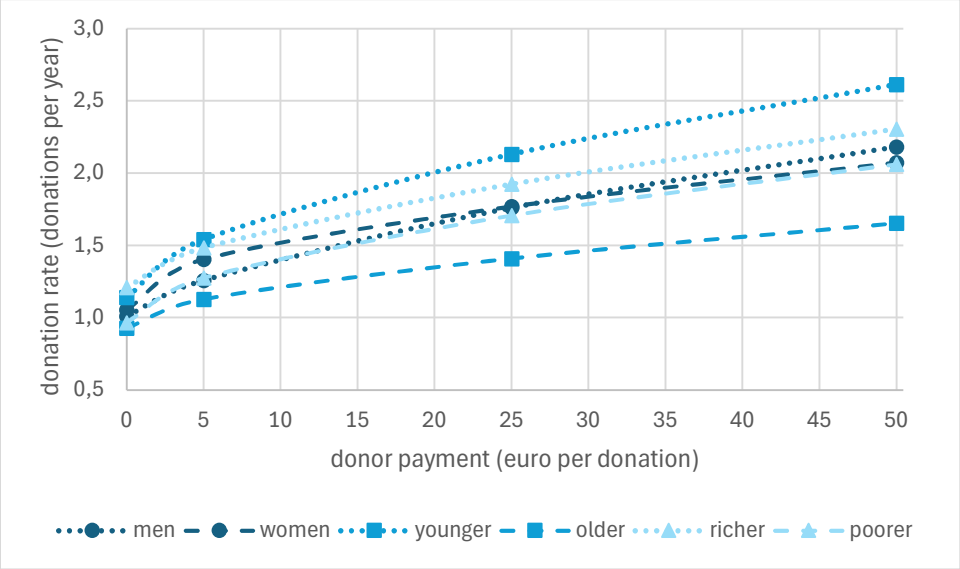


Figure 15. Intentions to donate for different demographic groups

Applied to figure 15, the differences in the donation levels (the height of the curve, measured, e.g., by the vertical intercept) are small: with unpaid donations, everyone plans to donate between 0.93 times (older respondents) and 1.21 times (richer respondents) next year. Differences in incentive sensitivity (the steepness of the curve) are clear for age: younger respondents are more sensitive to incentives than older respondents. Finally, differences in the curvature are only present for gender: the donation curve is slightly more curved for women than for men.

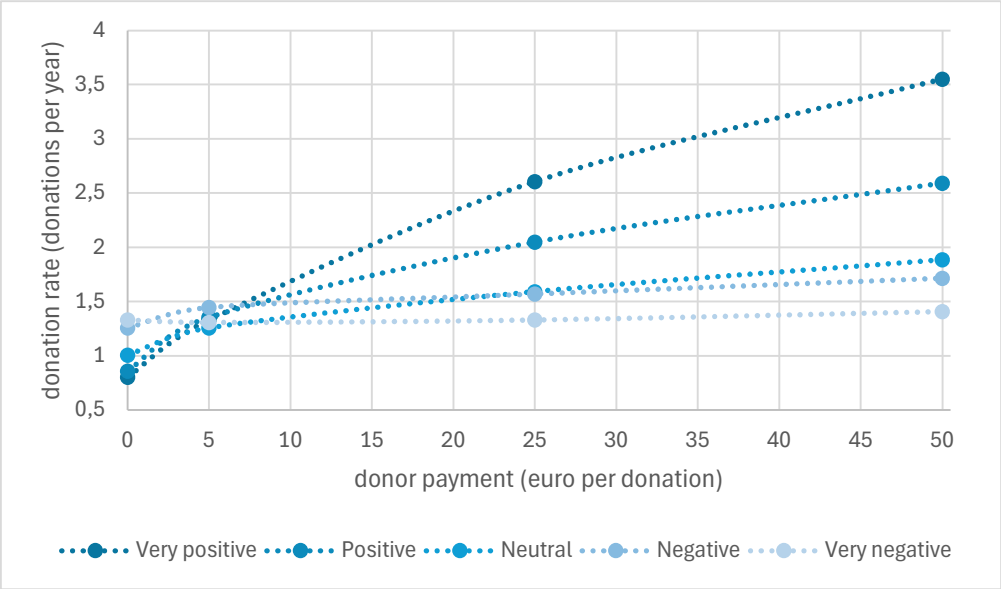


Figure 16. Intentions to donate for different attitude groups

Figure 16 shows people's intentions to donate blood depending on their attitude towards paying blood donors. The differences are, as expected, more outspoken, especially in terms of incentive sensitivity and curvature. The more positive someone's attitude towards paying donors, the steeper the curve and the higher its curvature. In particular, individuals with very negative feelings have a flat curve: they intend to donate the same amount irrespective of the exact payment.

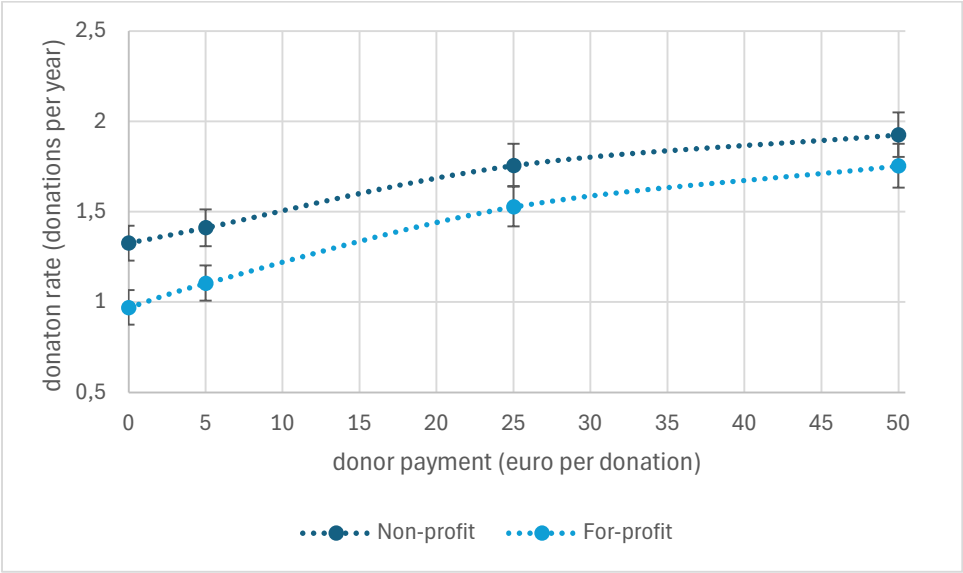


Figure 17. Intentions to donate for different institutions (Flemish survey, 2023)

In the second Flemish survey we introduced the distinction between for-profit and non-profit institutions. Figure 17 shows that the difference is relevant for the stated willingness to donate blood. On the one hand, individuals intend to donate more if the donor centre is a non-profit. This is of course in line with the attitudes presented in the previous section. On the other hand, donors are slightly more sensitive to incentives at for-profit donation centres.

This has implications for the marginal costs of an additional donation: these are higher for non-profit donation centres compared to for-profit centres.[14] This result is caused by two effects. First, the donation curve at a non-profit is slightly less steep, which means it is more difficult and costly to increase donations by increasing payments. Second, and quantitatively more important, non-profits attract more donors who donate for free. So, when a non-profit starts paying its donors, it has to pay all those donors who would donate for free, which is more costly than at a for-profit that has a smaller group of such donors.

Table 2: Marginal cost at non-profit and for-profit donation centres
(in euro per extra donation)

	€ 5	€ 25	€ 50
Non-profit	53 (42 ; 69)	107 (89 ; 135)	154 (131 ; 188)
For-profit	31 (25 ; 39)	71 (61 ; 85)	108 (96 ; 127)

It is important to interpret the results in table 2 carefully. The smaller marginal cost of the for-profit does not imply that it is more cost-efficient in collecting donations. The table simply shows that the use of monetary incentives is less profitable for a non-profit than for a for-profit organization. The non-profit succeeds much better in collecting donations without paying its donors (see the intercepts in figure 17). Therefore, the higher reported marginal cost for non-profit donations centres (computed at a given *price*) does not imply that they would be more costly in producing a given *quantity* of blood units, at the contrary. Figure 17 illustrates this idea. Suppose a non-profit and a for-profit organization aim at an average donation rate of 1.5: the non-profit would then have to pay about €10 per donation, the for-profit more than double that price.

Two other remarks are worth stressing. First, even if our online surveys are anonymous, we can suspect that there is some social desirability bias in the answers. The intended blood donation rate in Flanders in the first survey from 2021 was, on average, equal to one blood donation next year; and this intended donation rate is about twice as large as the actual one in Flanders. On the other hand, the stated sensitivity to monetary rewards can be influenced by the different motivations described earlier. Respondents who believe that it is socially desirable not to pay donors, may understate their real incentive sensitivity in the questionnaire. On the other hand, if they believe that it is socially desirable that the donated quantity of blood increases, and that the questionnaire suggests that paying donors may be helpful in this regard, it is possible that they overstate their willingness to react on the increase

[14] The marginal costs calculated on the basis of the second survey are larger than those calculated on the basis of the first survey. This reflects the findings in Figures 14 and 17: the first survey yielded an overall estimate of the incentive sensitivity that is larger than even the highest result (that for the for-profits) in the second survey. This difference may be due to the place of the incentive questions in the overall questionnaire. Although we randomized the order of the questions in both surveys, it is still true that there were many more motivational questions in the first one. Since the sample of the first survey was substantially larger, we tend to give greater weight to the results obtained there.

in the remuneration. Overall, it is difficult to predict the direction of the bias, but there can be no doubt that the results must be interpreted with caution.

Second, the (crucial) relationship between attitudes on the one hand and behaviour on the other hand should also be interpreted cautiously. We have seen that the stated donation behaviour of respondents who see no problem in paying donors is more sensitive to monetary rewards (figure 16). This result may be strengthened by desirability bias, but it is unlikely that it can be completely explained by it. If attitudes are rather stable over time, paying donors will therefore not be very successful in Flanders. Indeed, as Flemish citizens have a rather negative attitude towards paying donors, they will not politically support paying donors. And even if one starts paying donors in Flanders, figure 16 tells us that the number of donations will not increase much. Yet, the case of Germany, as described in section 4A, opens up another possible way of thinking. If people acquire a more positive attitude towards paying donors if the possibility of payment is introduced, paying donors will be more successful and the present negative attitudes may just be seen as an obstacle to be overcome. But, then, why would we want a more positive attitude towards paying for blood products in Flanders, if it is not needed to get a sufficient supply and if there is a risk that it may spillover to other prosocial activities in the long run?

4C. Small non-cash rewards: experimental results in Flanders

We now go beyond the hypothetical information derived from the questionnaires and discuss three real-life natural experiments in Flanders based on small non-cash rewards. The first two are gift-based: how does the donation rate change if the Belgian Red Cross-Flanders announces and provides an extra gift for each donation (an ice cream in the summer or a bag of candy around Valentine worth respectively €0.5 and €1)? The third one is voucher-based: how does the donation rate change if the Belgian Red Cross-Flanders announces and provides an extra quasi-cash voucher for a plasma donation (worth €1.5)?

Small gifts for blood and plasma donations

Starting from 2017, donation centres provide ice cream to blood and plasma donors during the summer months (early June to early September). A difference-in-difference method was applied, with years 2015 and 2016 as control years, when donors did not get ice cream in the summer, and years 2017, 2018, and 2019 as treatment years.[15] The summer ice creams increased the attendance rate with 3,4%. This increase is statistically significant. At an average ice cream cost of €0.5 per attendance, the marginal cost to obtain one extra attendance by rewarding donors with ice cream is €15. Compared to paying donors (see section 4B), this cost is very low.

During the week of Valentine (February 2021), blood and plasma donors at blood drives and donation centres received a bag of candy. A newsletter was sent to all donors with subscription, on February 4, four days before Valentine's week. We set up a randomized

[15] The difference-in-difference method assumes that years 2015 and 2016 are similar to the years 2017-2019 in all respects except for the summer ice cream and the overall trend of increasing attendance. It also assumes that the causes underlying this background trend of increasing attendance are independent from the ice cream campaign. So, the method rests on fairly strong assumptions that may not be met in reality.

experiment. Newsletter subscribers were randomized into two groups. The test group received a newsletter version that informed them about the gift, while the version for the control group did not mention it.[16] For the entire period (before, during, and after Valentine's week), the attendance rate significantly increased with 0.27 percentage points among the donors who received the newsletter announcing the extra gift. The corresponding marginal cost is equal to 12 euro per extra attendance. Note again that, compared to paying donors, this cost is very low.

Two remarks. First, there is a difference between receiving the newsletter and opening it. Only 38% of subscribers opened the newsletter. So, for the people who opened the newsletter, there is an increase in attendance of 0.7 percentage points. Second, while there is a higher turn-out during Valentine' week, the turnout is even higher in the two weeks after Valentine's week. Maybe donors simply overlooked the fact that the promotional period only lasted one week. Alternatively, donors may want to signal that they are not donating for a reward and therefore deliberately arrive after the campaign week. Or, (altruistic) donors receive the signal that the Red Cross needs more blood donations and they therefore donate more, even after the campaign week without a present.

An extra quasi-cash voucher for plasma donations

We set up a randomized experiment at twelve donation centres of the Belgian Red Cross-Flanders to measure how sensitive plasma donors are to an extra voucher (worth approximately €1.5).[17] The experiment lasted 9 months (from October 2022 to June 2023), with an 11 month pre-experiment period (from November 2021 to September 2022) and a 4 month post-experiment period (from July 2023 to October 2023). Table 3 provides a timeline of the experiment.

Using cluster analysis, the twelve donation centres in Flanders were subdivided into three experimental groups — a control group, an information group, and a reward group — of four donation centres each.[18] Figure 18 shows the location of the donations centres and their assignment to one of the three groups.

At each donation centre, both blood and plasma are collected.[19] Each donor (who donated blood or plasma at least once at a donation centre in the two-year period before October 2023) was assigned to the donation centre where they donated most recently during the pre-experiment period. Donors who are subscribed to the monthly newsletter, receive a newsletter version which is specific for the donation centre to which they were assigned. Blood donors

[16] The number of subscribers who opened the newsletter in the test group was statistically significantly lower than in the control group ($p<0,0001$ according to a Chi-square test). It is unclear why this happened.
[17] We refer the interested reader to Bruers, Ooghe, and Schokkaert (2025) for further details.
[18] To avoid discrimination between donors at the same donation centre, all donors at the same donation centre must receive the same information and the same rewards. Hence, only randomization between donation centres (and not between donors at the same donation centre) was possible.
[19] At the twelve donation centres together, 77,646 donors donated blood or plasma at least once in the two-year time window. Averaged over the (12) donation centres, 879 plasma donations, 318 blood donations, and 106 platelet donations were done per month. In addition, 16,636 blood donations were done per month outside the donations centres (at local blood drives).

who only donated at local blood drives and never donated at a donation centre, could not be assigned to a donation centre and received the same newsletter as the control group. They are not included in the experiment.

Table 3. Timeline of the experiment

	year	2022						2023								
	month	⋯	08	09	10	11	12	01	02	03	04	05	06	07	08	⋯
	treatment	pre			info			reward						post		
control	info about coupons	no			no			no						no		
	coupons for plasma	2			2			2						2		
information	info about coupons	no			(1, 2, 3)*			(1, 2, 3)						no		
	coupons for plasma	2			2			2						2		
reward	info about coupons	no			(1, 2, 3)**			(1, 3, 3)***						no		
	coupons for plasma	2			2			3						2		

Notes: *The number of coupons for a donation of respectively blood, plasma, and blood platelets; ** In the last month (12/2022), also the change from 2 to 3 coupons was announced; *** In the last month (06/2023), also the change from 3 back to 2 coupons was announced.

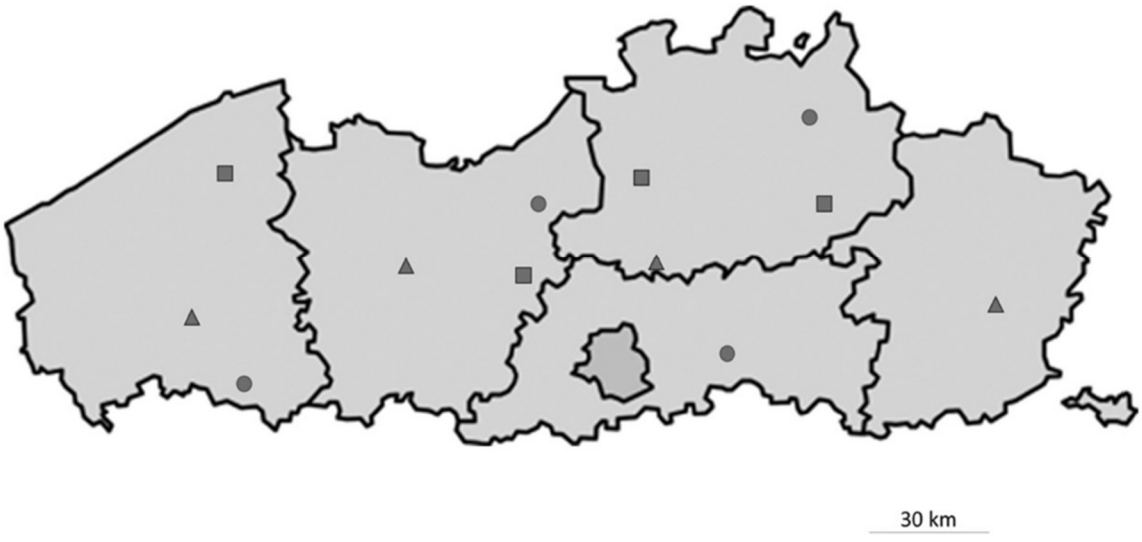


Figure 18. Location and assignment of the Flemish donation centres

Notes: the squares are the donation centres of the control group (from left to right: Brugge, Aalst, Edegem, and Geel); the triangles are the donation centres of the information group (from left to right: Roeselare, Gent, Mechelen, and Genk); and the circles are the donation centres of the reward group (from left to right: Kortrijk, Sint-Niklaas, Leuven, and Turnhout).

The control group maintained the practice of the pre-experiment period: one, two, and three thank-you-coupons for, respectively, blood, plasma, and platelet donations, and no communication about rewards in their newsletters.

The information group was the first treatment group. During nine months of the experiment period (the so-called information period), donors who were assigned to these donation centres were informed at the beginning of each month about the existing number of thank-you-coupons for a blood, plasma, and platelet donation at their assigned donation centre. In the four months after the information treatment period (the post-experiment period), the numbers of coupons were no longer communicated in the newsletter.

The reward group is the second treatment group. Like the information group, the donors in this group were informed in each monthly newsletter during the same nine month period about the number of thank-you-coupons that they receive at their assigned donation centre. During the first three months of the experiment period (October 2022 to December 2022), donors received as many thank-you-coupons at these donation centres as in the control and information groups. For the next six months (the reward period, from January 2023 to June 2023), plasma donors were informed that they would receive three instead of two thank-you-coupons for a donation. In the newsletter of the third month of the experiment (the month before the reward period), it was explicitly announced that from the following month onwards donors would receive three thank-you-coupons for a plasma donation. Similarly, in the last newsletter of the six-month reward treatment period, the newsletter communicated that from the following month onwards plasma donors would again receive two thank-you-coupons. In the four months after the reward treatment period (the post-experiment period), plasma donors received two thank-you-coupons, just like in the pre-treatment period. In this post-experiment period, the rewards were no longer communicated in the newsletter.

Figure 19 shows the results.[20] The information in the newsletter immediately increases the number of plasma donations by 4.6%. One plausible reason is that merely mentioning the existing rewards in the newsletter makes the rewards more salient, which could increase someone's motivation to donate. Moreover, as especially blood donors are not always aware of the fact that they receive one more thank-you-coupon for a plasma donation, information about the existing rewards may especially increase plasma donations. However, as can be seen from the results for the information group (the light blue line in figure 19), that effect of information gradually tapers down in the following months and has almost disappeared in month 10 of the experiment.

Comparing the reward group with the control group gives the combined information and reward effect, since the reward group of course also received the information. This joint effect is larger and remains positive throughout the whole treatment period. Compared to a donation centre of the control group that does not inform its donors about the reward and

[20] Bruers, Ooghe and Schokkaert (2025) contains more detailed results of a full statistical model, estimated with the individual data.

does not give an extra reward, a donation centre that informs donors and gives them an extra voucher for a plasma donation, will, on average, collect about 11.7% more plasma.[21]

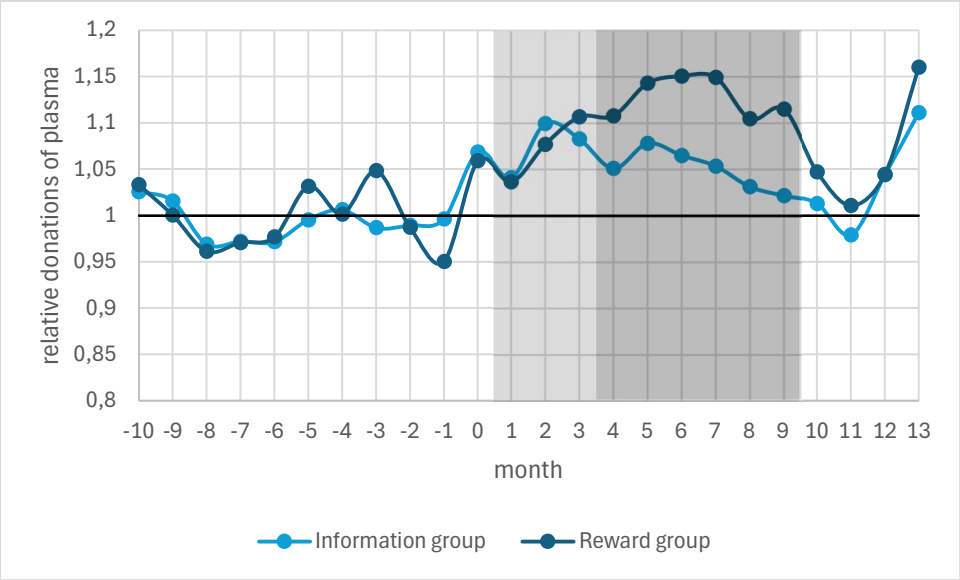


Figure 19. Relative total monthly plasma donations for the information and reward group

Notes: the averages of the pre-experiment period are rescaled to 1. The first vertical line is the start of the information treatment period, the second vertical line is the start of the reward treatment period, and the last vertical line is the end of the experiment.

Additional analyses suggest that there may be a weak product displacement effect, in that, during the reward treatment period, blood donations at the reward group donation centres decrease with 3.3%.[22] Information about the existing reward scheme does not significantly affect the blood donation rate. So, we observe a small shift from blood to plasma at the donation centres of the reward group.

Three remarks.

First, as before, roughly half of all donors never opened a newsletter during the nine month experiment period. The estimated effects are considerable higher if we focus on those who opened the newsletter in the information and reward group. In the short run, the "raw" effects in the figure are most relevant, since the Belgian Red Cross-Flanders cannot control who opens and reads the newsletter. In the long run, the larger effect may become more relevant, if we assume that everyone gradually would be informed about the new rewards for different blood products.

Second, we again compute the marginal cost of an extra donation using an extra voucher. If we take the joint effect of reward and information in consideration, the marginal cost of an

[21] The increase in the number of plasma donations in month 13 can be explained by a campaign in two centres close to the largest universities, Gent and Leuven, that are in the information and the reward group respectively. Removing month 13 from the analysis does not change substantially the results.
[22] This decrease is at the edge of statistical significance.

additional plasma donations is €16.5. If we also take into account that some did not open the newsletter and assume that, in the long run, everyone is informed, the marginal cost reduces further to €10 per plasma donation.[23] This is again fairly low (compared to the international experimental evidence in section 4A).

Third, it is fascinating that the donations increase significantly, although the money value of the extra incentive is very low. This strongly suggests that motivations to donate plasma go beyond narrow material self-interest. We need to invoke broader pro-social motivations to explain our results. Social reputation considerations as such cannot be an explanation: this would (counterintuitively) require that social reputation for donating plasma would improve if the non-cash reward becomes somewhat larger. Moreover, donating plasma at a donation centre is not very visible and remains largely anonymous. A better explanation is a simple reciprocity effect: if the Red Cross increases its gift, donors may want to reciprocate that increase in the gift. Or alternatively, the higher reward may signal that there is a more urgent need for plasma, inducing prosocial plasma donors to donate more plasma (or inducing prosocial blood donors to switch from blood to plasma).[24]

4D. Summary of section 4

Let us briefly summarize the main findings of section 4:

1. There are subtle interactions between social norms, individual attitudes, and donation behaviour. Opinions in Flanders are mixed about the desirability of payments, but a majority prefers that the system remains non-paid. There is some concern that the introduction of paid donations would induce a danger of undermining existing solidarity institutions. Yet, the validity of this concern is very difficult to test empirically.
2. Almost all the available evidence suggests that paying donors has a positive effect on the donation rate.
3. While paying donors may increase donations, it is a very expensive way of doing so. The marginal cost of one additional donation, obtained through donor payments, is larger than the marginal cost of an additional donation, obtained with the standard method of giving small gifts.
4. Increasing plasma donations by introducing specific incentives, may decrease the donation rate of whole blood.
5. The behavioural effect of small rewards is surprising and fascinating. Small gifts of ice cream and bags of candy increase the number of blood donations. An additional voucher with a value of €1.5 significantly increases the number of plasma donations. This suggests that reciprocity and/or reactions to a signal, expressing urgent need, are important motivations of donors.

[23] Admittedly, the negative effect on blood donations should also be taken into account.

[24] The relevance of these two possible motivations was confirmed by the answers in an additional small survey that was organized in 2025.

5. Is there a sufficient supply of plasma?

In case of blood, there is currently no shortage, neither in Flanders, nor in other European countries. For plasma, however, the demand for plasma and plasma-derived products (PPDPs) is larger than the supply in Europe. The 38% deficit of plasma in Europe (Hotchko, 2021) corresponds to 4-8 million litres of blood plasma or 2-4 million extra plasma donations (Simonetti and Smit, 2023).

Currently, the excess demand at the European level is solved by importing PPDPs from non-European countries, especially from paid donors in the United States. Yet, even within Europe there are large differences between countries, which coincide with differences in national rules about the commodification of plasma. Not only Germany, but also Hungary, Austria, and the Czech Republic allow plasma donors to be paid and commercial for-profit donation centres to collect plasma. These countries have excess supply and are net exporters of plasma. Other countries (like Belgium) prefer no commodification of plasma and are net importers.

Europe wants to be self-sufficient. From an economic point of view, the question is whether countries need to be self-sufficient if there is a well-functioning market for PPDPs. But if they decide to do so, e.g., for strategic reasons — the recent COVID-19 pandemic showed a strong dependence of Europe on third countries in medical supplies, and the current breakdown of the international trade system is especially worrying — it implies that more donations are needed. And this higher need is especially present in countries and regions with excess demand such as Flanders. The question then is: how to obtain more plasma donations?

We already analysed several measures that 'reward' donors in some way: small gifts (e.g., ice cream or a bag of candy), providing an extra voucher for plasma donations, or paying donors. We have also seen that some of those measures are more cost-effective than others, because they have lower costs or stronger effects on the donation rate (or both). In particular, small non-cash or quasi-cash rewards are likely to be more cost-effective than paying donors. Yet, alternative measures that are not based on rewarding donors are feasible as well.

Probably the most obvious measure is to open more donation centres to decrease donor travel distance. First, distance matters to donors. Figure 20 is based on the second Flemish survey: it shows how the intended donation rate decreases with distance to the nearest donation centre (being, 2, 10, and 25 km from the respondent's place of residence).[25] On average, the intention to donate increases with 0,039 donations per year if the distance to the nearest donation centre decreases with 1 km. Second, while the opening of a new donation centre leads to more donations, the opening has a cost too. Financial data from the Belgian Red Cross-Flanders (2023) suggest a marginal cost of €7 for an extra donation. These marginal costs are calculated as the purchasing cost of the building and equipment per year (using a 10 year depreciation period), divided by the number of blood and plasma donations per year at that donation centre. This marginal cost is again fairly small: it is smaller than the marginal cost of small non-

[25] The average distance to the nearest donation centre is 8 km in the survey and 12 km according to administrative donor data from the Belgian Red-Cross Flanders.

cash or quasi-cash rewards and much smaller than the marginal cost of paying donors, which would inevitably arise if commercial players enter the plasma market in Flanders.

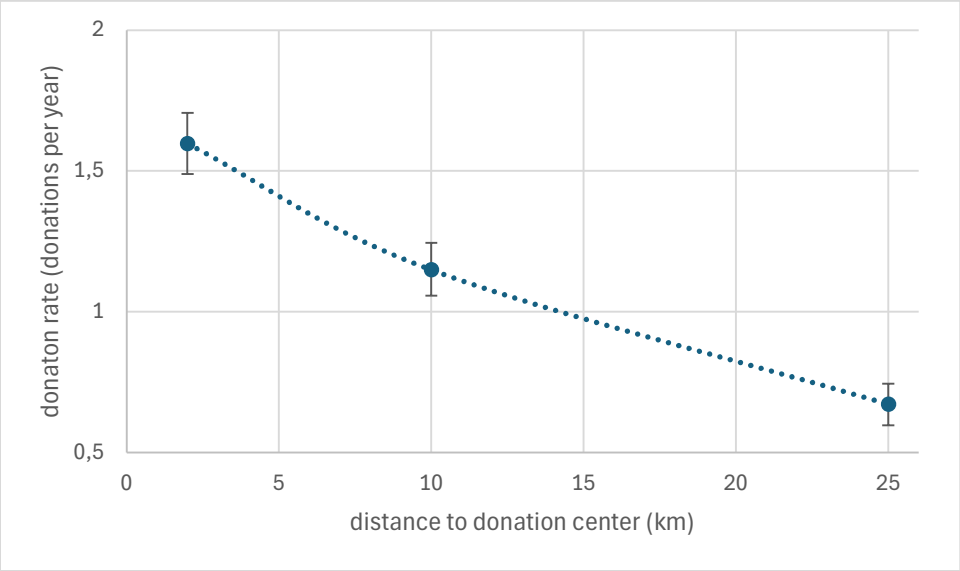


Figure 20. Intention to donate as a function of distance (Flemish survey, 2023)

A related issue is the question of resilience: how would the donation rate react in the face of an economic or a social shock? Resilience is one of the arguments to strive for self-sufficiency, but self-sufficiency on its own is not sufficient to be resilient. A priori, it may be thought that solidarity is a motivational force that remains stable, or even gets stronger in difficult circumstances, but that hypothesis remains difficult to test. Another consideration may be that a donor base with many donors donating relatively infrequently (as is typical for non-paid donation systems) is less vulnerable to the loss of donors than a donor base with a smaller number of donors donating frequently (as is typical for systems with paid donations). Some suggestive evidence is the larger decline in the amount of plasma collected during the covid period in systems with payment compared to voluntary systems without payment (MacKay et al., 2024). Moreover, it seems also natural to assume that the former type of system can react in a more flexible way to an unexpected increase in needs than the latter type.

Moreover, one could be concerned about the potential irreversibility of some changes. A system that moves from unpaid to paid donations, and then realizes that it would prefer to return to its former system, may have difficulties to do so, since remunerated donors can discontinue donating if the remuneration is removed, while former voluntary donors perhaps would not return (Kretschmer et al., 2004). And, as suggested before, this phenomenon could play not only at the level of individual donors, but also at a broader social level, if solidarity norms change as the result of introducing a paid system. As mentioned in the previous sections, the interactions between institutions and norms in the sphere of blood and plasma donations is a crucial open question.

6. Conclusion

There is a hot debate on the social desirability of paying blood and plasma donors, rather than keeping the system of voluntary and unpaid donations, which is still the rule in most countries, including Belgium. For whole blood, the issue is maybe less relevant because shortages do not occur in Flanders. Plasma, however, is a different story: demand exceeds supply, which is solved by importing plasma and plasma-derived products. This shortage is often used as the main argument to introduce donor payments, under the assumption that this would increase supply.

In addition to the quantity argument, other ethical considerations are brought to the fore in the debate about commodification of blood markets. Some of them can be called deontological: they have to do with respect for personal freedom and human dignity. Others can in principle be tested, but testing is not trivial. The main argument here is the danger that donor payments would undermine crucial social values that are necessary to support the welfare state. The position taken towards these arguments will reflect convictions about what is a good society, or about the risks one is willing to take with regard to the existing social fabric of society. Differences in convictions can only be reconciled through an open societal discussion.

While we cannot test all ethical arguments against plasma (and blood) commodification, the survey results show that some of the counterarguments are broadly shared in Flanders. For example, a majority is concerned that it will break down important norms and values (such as selflessness, citizenship, and solidarity). This finding is relevant to evaluate the desirability of the present system in the eyes of the population. Of course, social norms and values may change if the institutions change. The interaction between social values and institutions is complex and difficult to gauge empirically. If social norms are more in favour of donor payments in Germany, a country where plasma donors can be paid, is this because the Germans have always been in favour (which could explain the differences in the regulations), or because social values changed as a result of the introduction of payments? If the latter, then we are back to a deep ethical question: do we find this change in social values worrying or not?

At the end, it is likely that the discussion will focus on the quantity and quality of plasma donations. In this study, we did not analyse the quality issue, which can only (tentatively) be settled by international comparisons. There is some suggestive evidence that the quality of paid plasma would be lower, mainly because donors are donating (much) more often in a paid system (MacKay et al., 2024). This higher frequency of donating can also induce health problems for the donors (Mortier et al., 2023). In principle, however, quality could be controlled and the number of donations could be regulated more carefully – which would of course increase costs. We did analyse as carefully as possible with the available data the issue of the effect of donor payments on the quantity donated. Our evidence is a mix of results for blood and for plasma. Three broad findings are striking.

First, there is no evidence for behavioural crowding out. Introducing paid donations can increase the donated amount. This does not mean that some of the subtle motivational

mechanisms described in the literature are not relevant. They may well be, but the net effect of the different motivational changes together, remains positive.

Second, an increase in small non-monetary gifts also has a significant positive effect on the donated quantity. Especially striking is the significant effect on plasma donations (in a large real-life field experiment) of an additional voucher worth only €1.5. It is hard to believe that the material incentive of such a small voucher would be very strong. On the contrary, this suggests the importance of prosocial motivations, such as reciprocity and a reaction to the signalling of more urgent needs. We need a sophisticated model to understand donation behaviour; a primitive focus on material incentives will not do.

Third, even if paid donations may have the potential to increase supply, the cost is relatively high. If one is (rightly) concerned about the shortage on the plasma market, there are more cost-effective solutions to increase the supply. The evidence suggests that the best strategy is to allow the Belgian Red Cross to open more donation centres, accompanied by the usual donor recruitment and retention campaigns based on text messaging, small non-cash rewards (special events with small gifts), and quasi-cash rewards (exchangeable vouchers).

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