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Abstract:

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Modelling the role of anticipated emotions in blood donor behaviour: A cross-sectional study

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Abstract

For blood transfusion centres, studying anticipated emotions (AEs) related to blood donation is essential, since these variables influence donation decision. For this reason, this work addresses the need to identify the antecedents and consequences of AEs, which will help explain their origin and their role in donation behaviour. Our purpose is to make further progress with the application of the AE framework in a non-profit context, by analysing how AEs are generated and how they influence decision-making. This study aims to design and validate an explanatory model of donation intention, where motivations and attitude towards donation are direct antecedents of AEs, while AEs, motivations and attitude towards donation act as direct antecedents of intention. Moreover, it has been also considered how the type of donor influences the proposed model as a moderating factor. The final sample is comprised of 35,982 active donors, inactive donors and non-donors. Data was obtained through an online questionnaire, with the collaboration of 14 of the 17 Spanish blood transfusion centres, as well as some universities. Results indicate that (1) AEs, motivations and attitude towards donation are direct antecedents of donation intention, (2) motivations and attitude towards donation are direct antecedents of AEs, and (3) donation experience moderates the relationships between motivations, attitude towards donation, AEs, and donation intention. These results indicate several operational implications that will enable blood transfusion centres to better design and target donation promotion campaigns according to type of donor. Furthermore, the results will let centres assess whether placing value on donation motivation and attitude towards donation can bolster positive AEs, diminish negative AEs and have a direct effect on donation intention.[1]

Keywords*:* blood donation, anticipated emotions, motivations, donation intention, recruitment and retention programs

PsycINFO classification: **2360**; **3940** || JEL classification: **M31**

AEs = anticipated emotions; posAEd = positive AEs of donation; negAEd = negative AEs of donation; posAEnon-d = positive AEs of non-donation; negAEnon-d = negative AEs of non-donation.

1. INTRODUCTION

Every country faces constant challenges in the struggle to collect enough blood from donors to address demand. Voluntary, unremunerated blood donation is viewed as the best alternative to achieve a safe, sustainable national blood supply, without any need to coerce people to donate (Iajya et al., 2013; World Health Organization and International Federation of Red Cross and Red Crescent Societies, 2010). Making the promotion of voluntary donation a main objective of any government's healthcare policy continuously improves the donation system's efficiency, as voluntary blood donors are excellent educators, recruiters and health promoters (World Health Organization and International Federation of Red Cross and Red Crescent Societies, 2010). It is for these reasons that most countries prefer a voluntary, unremunerated blood donation system, with promotion programmes focused on raising awareness among the population and recruiting new donors (Devine et al., 2007). In recent years, however, donation levels have become stagnant or even decreased (Gonçalez et al., 2013). In fact, only a small minority (between 5% and 10%) of the age-eligible donor population does donate blood (Lacetera and Macis, 2010). This is why increasing the number of donors, retaining them and enhancing donation frequency is a priority for the majority of blood transfusion centres (Ringwald et al., 2010). In Spain, blood donation is the responsibility of blood transfusion centres. According to Spanish Royal Decree 1088/2005, they are 'health centres where activities are carried out to collect and analyse human blood or their components, regardless of the purpose that they are used for, and to treat, store and distribute them when they are used for transfusion'.

The donor recruitment efforts which blood donation services have made to create a constant, growing donor pool have been largely unsuccessful. This may be because the centres have not adopted an appropriate management approach or they have adopted an anti-theoretical approach (Lemmens et al., 2009; Ministerio de Sanidad, Política Social e Igualdad, 2010). Considering this, it has proven to be very useful to apply marketing principles to the blood donation sector (Pesavento and Bégué, 2011; Wakefield et al., 2010). Blood transfusion centres have to recognise active and potential donors as the basis of their marketing strategies.

Within this new paradigm, it is essential to determine the main factors that affect donor behaviour (Carter et al., 2011). Studies have analysed intrinsic factors such as donation barriers,

motivations, attitudes and previous experience (Bednall et al., 2013). There is currently a growing research area dealing with anticipated emotions (AEs) as key components determining the individual's behaviour (Bagozzi et al., 2016; Fong and Wyer, 2003; Patrick et al., 2009). Mellers and McGraw (2001, p. 210) suggest that 'when making decisions, people often anticipate the emotions they might experience as a result of the outcomes of their choices and use those emotions as guides to choice'. Thus, decisions are influenced by the emotions individuals expect to experience in the future, that is, anticipated emotions, so called due to their prospective orientation (Bagozzi et al., 2000). The rationale behind AEs is that individuals 'anticipate how their choices will make them feel' (Patrick et al., 2009, p. 537). AEs represent the emotional consequences of their actions or inactions before decision-making (Bagozzi et al., 2016). For this reason, Bagozzi et al. (2016, p. 630) defined AEs as 'predictions of an outcome's emotional consequences or beliefs about one's own emotional responses to future outcomes'. They are 'prefactual appraisals' (Bagozzi et al., 2000; Gleicher et al., 1995) about imaginary events, therefore, they do not need to be real (Carrera et al., 2012). They are also behaviour-, context-, and time-dependent (Piçarra and Giger, 2018; Xie et al., 2013)

The existing literature has identified specific AEs (e.g. pride, happiness, regret, guilt, worry, shame) and types of AEs (positive vs negative) as determinants of behaviour. However, the literature has not dwelled on their origin or consequences. Authors like Pieters and Zeelenberg (2007) and Yi and Baumgartner (2008) address the importance of studying AEs and analysing how they are generated, as well as how they affect decision-making processes. For this reason, the aim of this work is to make progress in the understanding and application of AEs in a non-profit context such as blood donation, by analysing their antecedents and consequences. Besides, the present work has considered the double perspective suggested in the most recent literature. This approach affirms that it is necessary to address both positive and negative AEs occurring when considering both action and inaction (Bagozzi et al., 2016; Fong and Wyer, 2003; Zeelenberg et al., 2000).

Motivation and attitude have been proposed in this work as possible AE antecedents. They are two important factors influencing the individual's behaviour in general, and blood donation behaviour as well, as different studies have evidenced (e.g. Bednall and Bove, 2011; Conner et al., 2013; C. R. France et al., 2014; Godin et al., 2007). The well-known complexity of donor behaviour, where

several intrinsic factors act and interact with each other, justifies the joint analysis of motivations, attitude towards donation and AEs.

According to the self-determination theory, motivations are the sources or forces which drive individuals to act (Ryan and Deci, 2000). In other words, motivations are the reasons why people do things (Martín-Santana and Beerli-Palacio, 2013; Ryan and Deci, 2000). In the field of blood donation particularly, motivations are the reasons why donors currently give blood (active donors), why they gave blood in the past (inactive or lost donors) or why they would donate in the future (non-donors or potential donors) (e.g. Huis in 't Veld et al., 2019; Karacan et al., 2013; Nilsson Sojka and Sojka, 2008). The academic literature has identified a wide variety of donation motivations. Gonçalez et al. (2013) propose a classification in three categories: altruism, self-interest and response to a direct or social appeal. Regardless of their nature, the role of motivations in the study of blood donor behaviour is fundamental because the interaction between them and their negative counterpart (barriers) determines behaviour (Hupfer et al., 2005).

As regards attitude, Fishbein and Ajzen (1975) define it as the favourable or unfavourable evaluation towards an object, idea or opinion, which leads individuals to act in one way or another. Thus, in the blood donation context, attitude towards donation has been a widely studied variable when analysing both donors' and non-donors' behaviour (Bednall et al., 2013; Masser et al., 2008).

Additionally, the growing necessity of including moderating factors in research models with attitudinal and behavioural variables (Fazio, 1990) justifies analysing the moderating role of individuals' previous experience with blood donation (i.e. type of donor) in this work. Therefore, it is hypothesised whether the influence of AEs in the blood donation context could vary depending on the individual's experience with the donation system. This would consequently lead to the design of differentiated promotion strategies and programmes for new donor recruitment, active donor loyalty and inactive donor recovery.

Considering all of the above, a model of AE antecedents and consequences in the blood donation context is proposed and validated. The contributions of this work to the role of AEs in decision-making are: (1) their grouping in two categories: AEs that motivate donation (positive AEs of donation and negative AEs of non-donation), and AEs that motivate non-donation (negative AEs of

donation and positive AEs of non-donation); (2) the addition of motivations and attitude towards donation as AE antecedents; (3) the inclusion of the moderating effect of donor type; and lastly (4) the explanatory role of AEs, motivations and attitude in donation intention. This model attempts to contribute to the scarce research assessing AEs from a double perspective. It also aims to identify potential antecedents, consequences and moderators.

The results of this work would help to define a set of operational implications that will enable blood transfusion centres to better design and target donation promotion campaigns and also address reluctance to donate blood, according to type of donor. To this end, it is essential for blood transfusion centres to know whether placing value on donation motivations and attitude towards donation in communication campaigns can bolster positive AEs, undermine negative AEs and ultimately have a positive effect on donation intention.

2. CONCEPTUAL BACKGROUND AND HYPOTHESES

2.1. AEs in decision-making

The interest in analysing AEs lies in their influence on human behaviour, because individuals might anticipate the emotional consequences of their actions (e.g. Patrick et al., 2009; Phillips and Baumgartner, 2002). In these studies, intention has been also considered as a behavioural variable because intention is the most immediate cognitive antecedent of behaviour (Armitage and Conner, 2001; Sheeran, 2002). In fact, in their meta-analysis, Rivis et al. (2009) suggested that anticipated affect could contribute to predict intention.

Several authors have shown that the inclusion of AEs in different behavioural models has a significant effect on consumption intention (Bagozzi et al., 1999, 1998; Elgaaied, 2012; Mellers and McGraw, 2001; Richard et al., 1995; Steg and Vlek, 2009). Sandberg and Conner (2008) found that AEs explained, on average, an additional 7% of the variance in intention. Such potential predictive capacity of AEs on intention has been studied in very different contexts, for instance, participation of Linux user groups (Bagozzi and Dholakia, 2006a), physical activity (Wang, 2011), use of public transportation (Carrus et al., 2008), selecting eco-friendly restaurants (Kim et al., 2013), selecting environmentally friendly consumer and travelling choices (Onwezen et al., 2013), behaviours related

to the Y2K problem (Baumgartner et al., 2008), adoption of healthier life-styles (Bagozzi et al., 1998) or use of technology (Beaudry and Pinsonneault, 2010).

Most studies have not analysed the entire AE spectrum. They have focussed on specific AEs, positive AEs or negative AEs. The latter, however, have garnered greater attention, with regret being among the most researched emotions (e.g. Hetts et al., 2000; Zeelenberg et al., 1996). Several authors have evidenced that negative AEs such as regret (Simonson, 1992), risk perception (Böhm and Pfister, 2008; Brewer et al., 2007), or guilt (Escadas et al., 2019; Renner et al., 2013) exert an influence in a variety of decisions of action and inaction.

Another research stream suggests that there are four groups of AEs influencing decisions: positive AEs towards action, negative AEs towards action, positive AEs towards inaction, and negative AEs towards inaction (Bagozzi et al., 2016; Fong and Wyer, 2003; Zeelenberg et al., 2000). This new perspective implies that decision-makers might jointly anticipate positive and negative emotions derived from both their actions and inactions before decision-making. They tend to avoid, or at least minimise, negative feelings such as regret and disappointment and, at the same time, they seek out positive or pleasant feelings such as rejoicing and elation (Mellers et al., 1999; Zeelenberg et al., 2000). However, to date, this stream has not had sufficient empirical development, and it has been mainly focussed AEs of action.

In the blood donation context, it can be deduced that, although most people experience positive emotions toward donation (e.g. pride or self-satisfaction) that drive them to give blood (Ferguson et al., 2008), even overcoming donation barriers (e.g. lack of time or information, fear of needles or physical discomfort), many others display negative emotions such as anxiety, usually reported as a psychological barrier to donate blood (Faqah et al., 2015; Lemmens et al., 2005).

In the same way, both positive emotions (e.g. calmness or relief) and negative emotions (e.g. disappointment at oneself or guilt) caused by the decision not to donate are also very relevant. For instance, since fear is one the most important deterrents to blood donation (Kowalsky et al., 2014), individuals with high aversion to donate might feel positive feelings about the non-donating decision, which in turn diminishes donation intention. On the other hand, regret for not being able to donate (Faqah et al., 2015; Godin et al., 2007) is expected to bolster donation intention due to the socially

desirable nature of donating blood. Therefore, considering the AE framework (Fong and Wyer, 2003; Zeelenberg et al., 2000), it can be deduced that positive donation-related AEs and negative non-donation-related AEs motivate blood donation, and negative donation-related AEs and positive non-donation-relates AEs motivate non-donation. In spite of this, AEs have been scarcely studied in the field of blood donation, with research focusing on in-centre emotions (Masser et al., 2019). The only exception is the work carried out by Conner et al. (2013), who analysed anticipated affective reactions, both positive and negative, as antecedents of the donation intention. In both cases, the effect on intention was positive, even more so in the case of negative reactions. However, the authors' study only considered anticipated positive affective reactions of donation and anticipated negative affective reactions of non-donation, without taking into account positive reactions of non-donation and negative reactions of donation.

Considering the four categories of AEs, and given that intention might be used in the blood donation context as a proxy variable that is useful to predict behaviour, especially when real donation behaviour is not available or cannot be determined (Schlumpf et al., 2008), we formulate the following hypothesis with the corresponding sub-hypotheses:

H1: AEs influence the intention to donate blood.

H1a: Positive donation-related AEs positively influence donation intention.

H1b: Negative donation-related AEs negatively influence donation intention.

H1c: Positive non-donation-related AEs negatively influence donation intention.

H1d: Negative non-donation-related AEs positively influence donation intention.

2.2. AE antecedents: Motivations and attitude towards donation

Although in the majority of studies AEs are aggregated as a parallel construct independently from the predictors established in deliberative behaviour models, mainly TPB-based and their revisions (Piçarra and Giger, 2018; Xie et al., 2013), Bagozzi et al. (2016) indicate that it is necessary to develop specific models in order to identify AE antecedents in order to explore how this construct is combined and integrated into the decision-making process. For instance, these authors propose a

model where AE antecedents are the amount of information of favourable and unfavourable outcome messages. Rezvani et al. (2017) and Onwezen et al. (2013) address the role of moral norms in AEs and pro-environment intention. Edwards et al. (2013) consider that employees' evaluations and perceptions motivate certain AEs about their response to work environment irregularities. Hook et al. (2016, p. 552) introduce AEs as 'the mechanisms underlying the influence of evaluative social identity on brand-based social network commitment and network recommendations'. In the business field, Hunter (2006) studies the role of image as an antecedent of AEs and the frequency of shopping centre visits.

In this context, previous literature indicates that motivations as AE antecedents have not been researched enough. Pham (1991) is one of the authors who have addressed this relationship, demonstrating that emotions depend on consumers' motivations. In addition, Pollai et al. (2011) suggested that purchase reason (motivation) can be more relevant than product type (hedonistic vs. utilitarian) to explain AEs. On the other hand, Leone et al. (2005, p. 1176) establish that 'emotions matching an individual's dominant motivational orientation should weigh more on evaluation than nonmatching emotions'.

In addition to the influence of motivation on AEs, in the context of this study, the importance of motivations justifies analysing their role as antecedents of AEs and donation intention. Donating blood is a voluntary, coercion-free act, i.e. it is entirely up to donors' willingness to giveaway their blood (Devine et al., 2007; Tey et al., 2020). Therefore, motivation is one of the determining factors which has received most attention in the study of blood donor behaviour (Bednall and Bove, 2011; C. R. France et al., 2014). With regard to motivation, according to the self-determination theory (Deci and Ryan, 1985; Ryan and Deci, 2000), the literature on blood donor behaviour has often considered motivations as the forces that drive individuals to act, i.e. the reasons behind behaviour (e.g. Huis in 't Veld et al., 2019; Karacan et al., 2013; Nilsson Sojka and Sojka, 2008). In short, motivations are the reasons why individuals donate blood. This is the perspective assumed by the present work.

Literature has consistently shown that blood donors are motivated to donate by multiple motivation types (reasons). In accordance with the classification suggested by Gonçalez et al. (2013), motivations towards donation can be divided into three categories: altruism, self-interest and response

to direct or social appeal. Altruism, which has traditionally been regarded as the main motivation to donate blood, is the desire to help other people while receiving nothing in return (Ferguson, 2015; Guiddi et al., 2015). Self-interest, on the other hand, means seeking personal benefit from the act of giving blood, e.g. the satisfaction derived from helping others, social recognition and donation incentives (Devine et al., 2007; Ferguson et al., 2008). Finally, response to direct or social appeal comprises two extrinsic motivation sources: marketing communications carried out by blood transfusion centres and the influence exerted by reference groups (Glynn et al., 2002; Gonçalez et al., 2013).

The three motivation categories described above can cause emotions. According to many authors, blood donation can be motivated by positive feelings such as satisfaction, personal merit and recognition by reference groups (Devine et al., 2007; Evans and Ferguson, 2014; Ferguson et al., 2012). Meanwhile, Ferguson (2015) argues that giving blood creates a feeling of usefulness: besides contributing to a social cause, donors can act as encouragers and inspire others to donate too. Finally, Devine et al. (2007) state that the recognition which individuals gain through the act of giving blood creates a sense of pride, feeling that they are part of an exclusive club whose members are appreciated by society. To sum up, motivation can induce positive emotions due to the socially desirable, beneficial nature of blood donation. However, and as argued above, individuals can be motivated not only by feeling positive emotions, but also by avoiding the negative emotions that come from non-donation, for instance, regret or guilt (Ferguson et al., 2012; Renner et al., 2013), which also happens precisely because of the nature of giving blood.

For all these reasons, the following hypothesis and their corresponding sub-hypotheses are proposed:

H2: Motivations to donate blood positively influence AEs motivating donation and negatively influence AEs motivating non-donation.

H2a: Altruism positively influences AEs motivating donation and negatively influence AEs motivating non-donation.

H2b: Motivations related to self-interest positively influence AEs motivating donation and negatively influence AEs motivating non-donation.

H2c: Motivations related to a response to direct or social appeal influence AEs motivating donation and negatively influence AEs motivating non-donation.

Besides motivations, this work proposes that attitude towards donation might also act as an antecedent of AEs considering the following. Firstly, the literature has previously identified that attitude and AEs are different constructs (Conner et al., 2015, e.g. 2013; Leone et al., 2005; Richard et al., 1995). In fact, Xie et al. (2013) state that attitudes and AEs intervene differently when making decisions. These authors claim that AEs are dynamic, situation-specific, changeable and focussed on the consequences of an action, whereas attitudes tend to be stable, are passive predispositions and reflect judgements and feelings learned from previous evaluation processes. For these reasons, both constructs, besides being discriminant and requiring different measurements, might have different effects on intention.

Secondly, the literature identifies different ways of including attitude and AEs jointly in behavioural research models. Most works have shown that both constructs are independent direct predictors of intention (e.g. Kim et al., 2013), being very scarce those works showing the existence of positive correlations (e.g. Richard et al., 1996) or causal relationships, direct or indirect, between attitude and AEs (e.g. De Pelsmaeker et al., 2017; Hunter, 2006). As regards the latter, Fazio (1990) exhaustively assesses the existing relationship between attitude and behaviour, which could be affected by multiple moderating variables such as situational factors, personality and attitude accessibility (e.g. previous knowledge, experience). Fazio (1990) analyses two type of models of the attitude-behaviour process according to the extent in which decision-making in a particular situation implies deliberation: the spontaneous processing model and the deliberative processing model. According to this dichotomy, the literature has considered blood donation as a deliberative process (Conner et al., 2013; Faqah et al., 2015; J. L. France et al., 2014; Giles et al., 2004; Godin et al., 2005) because donating blood requires reflection. However, Fazio (1990) proposes that mixed models might also occur; that is, in a substantially deliberative attitude-behaviour process, components originally

found in the spontaneous model might intervene, and vice versa. In this process, immediate perceptions towards the object/situation evaluation play a relevant role as a mediator between attitude and behaviour, especially when attitude is not easily accessible. If attitude is highly accessible (which is achieved e.g. throughout experience or repetitive exposition to the evaluation object/situation), perceptions arise from attitude (which is recovered automatically from memory), and therefore it is more likely that attitude and behaviour are congruent. On the contrary, if attitude is not that accessible, perceptions arise automatically from the most salient characteristics of the object/situation evaluation, and therefore it is possible that attitude and behaviour are not congruent.

Based on the above, considering that AEs could match immediate perceptions, and given that AEs are prefactual emotions that, although referred to future events (prospective nature), occur in the present, it is hypothesised that attitude is an antecedent of AEs:

H3: Attitudes towards blood donation positively influence AEs motivating donation and negatively influence AEs motivating non-donation.

2.3. Motivations and attitude towards donation as antecedents of intention

In the literature about blood donor behaviour, there are numerous studies supporting the idea that both donation motivations and attitude directly influence donation intention. Although the relationship between attitude towards donation and donation intention has been widely demonstrated, with findings showing that a positive or favourable attitude towards donation has additive effects on donation intention, and vice versa (Bednall et al., 2013; Masser et al., 2008), the relationship between donation motivations and donation intention requires further empirical research. Most studies testing behavioural models include motivation-based constructs as antecedents of intention (e.g. Faqah et al., 2015; Godin et al., 2005). However, works considering the reasons to donate as direct antecedents of donation intention are scarce (e.g. Ferguson et al., 2008; Martín-Santana and Beerli-Palacio, 2013; Schlumpf et al., 2008). This is due to the fact that donation motivations, as explicit reasons to donate, have been analysed from a descriptive perspective, and to a much lesser extent, from a causal perspective. In other words, the prevalence of some motivations according to donor characteristics and

types is analysed. Whether these motivations lead to a higher or lower donation intention, however, is not covered. For this reason, this relationship should be further researched.

To that end, the following hypothesis and their corresponding sub-hypotheses are established:

H4: Motivations towards blood donation positively influence donation intention.

H4a: Altruism positively influences donation intention.

H4b: Motivations related to self-interest positively influence donation intention.

H4c: Motivations related to a response to direct or social appeal positively influence donation intention.

Behavioural predictive models applied to blood donation have consistently shown the relationship between attitude towards donation and donation intention (e.g. Conner et al., 2013; Faqah et al., 2015; Godin et al., 2007).

Having said that, the following hypothesis is formulated:

H5: Attitude towards blood donation positively influences donation intention.

2.4. The type of donor as a moderating variable

Since blood donation motivations and attitude differ among individuals, their behaviour should be analysed differentially in order to develop specific strategies and actions (Sundermann et al., 2017). This is the case especially if we consider that blood donation generates positive and negative emotions which depend on the individual's experience as a donor (Conner et al., 2013; C. R. France et al., 2014).

The scientific literature has not paid attention to the specific circumstances that can shape the influence of AEs on decisions. However, in the consumption context, decisions might not only be based on AEs, since they also depend on specific conditions (Pollai et al., 2011). Studies have been made in this area. For instance, Hunter (2006) proposes a relationship between AEs and consumer experience. Bagozzi et al. (2016), additionally, suggest studying the role of AEs depending on

purchase frequency. The authors indicate that, in certain situations (e.g. products bought frequently), people buy things instinctively without AEs being necessarily involved. Fong and Wyer (2003) state that personal experience in a specific situation (or behaviour) can help interpret the effects of decisions more easily and consider AEs in such decisions. Finally, according to the findings of Brown and McConnell (2011, p. 1094) in the context of goal-directed behaviour, 'anticipated feelings became more accurate with experience'. Authors such as Ng et al. (2013) illustrated in their study that emotions derived from past behaviour influence AEs affecting current behaviour. This evidence has been verified in different experimental contexts. For instance, Carrera et al. (2011) address this issue in risk situations, pointing out that, the greater the experience, the greater the effect of AEs on behavioural expectation. With regard to AEs that tourists experience related to environmental risks, Böhm and Pfister (2008) found that tourists learn from their experience, and therefore adjust their AEs according to their previous travel experiences. In the context of using technological innovations, where there is no previous user experience, Piçarra and Giger (2018) consider that AEs may provide the necessary starting point and an anchoring mechanism. Emotion anticipation processes based on past behaviour are addressed by van der Schalk et al. (2015, pp. 1–2), who state that 'the experience of, say, guilt arising from the realization that one has harmed another person shapes future behaviour by leaving an "affective residue" that is activated when similar circumstances arise in the future'.

Therefore, we can infer from the above that the subject's experience, past behaviour or behaviour frequency can moderate the relationships established in the proposed model. If in the blood donation field these variables could correspond to status or donor type (active donors - individuals who had donated blood at least once in the last two years -, inactive donors - individuals who had donated blood before, but had not donated in the last two years -, and non-donors - individuals who have never donated blood -), the present work proposes that the type of donor could play a moderating role in the relationships established in the proposed research model. For this reason, this last hypothesis is formulated:

H6: The type of donor moderates relationships between motivations, AEs, attitude towards donation and donation intention.

Figure 1 schematically shows the proposed model, aimed at explaining donation intention using AEs, motivations and attitude towards donation as antecedents.

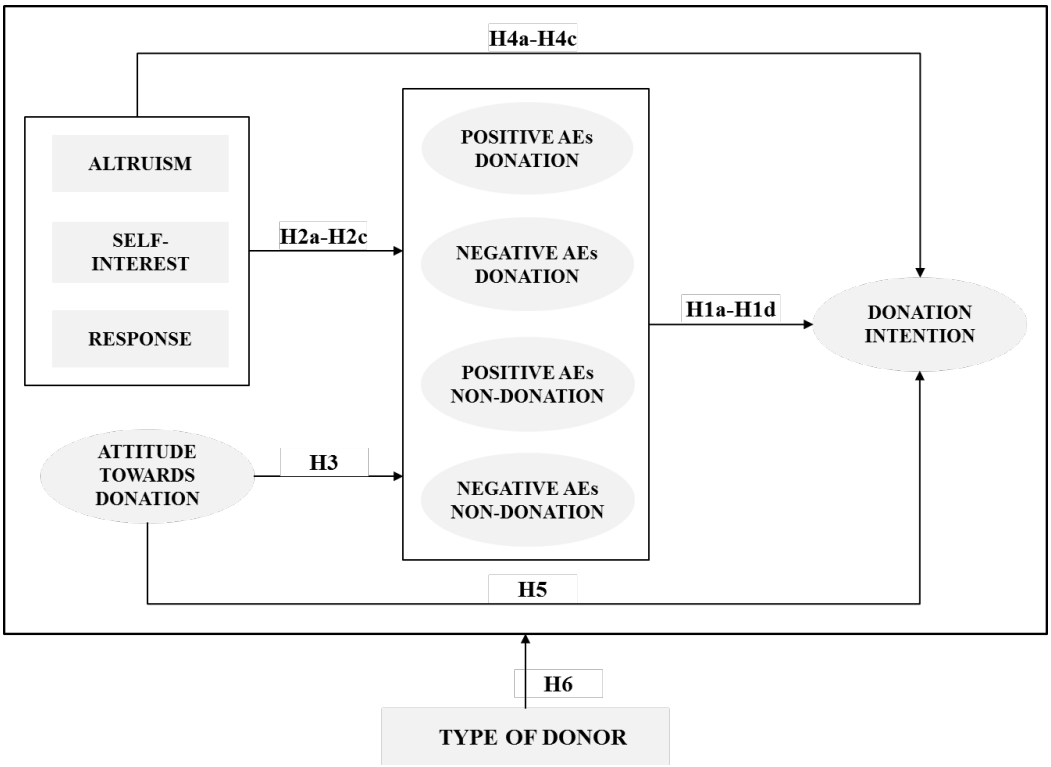


Figure 1. Proposed model

3. MATERIALS AND METHODS

3.1. Sample design and data collection

The population was comprised of active donors (individuals who had donated blood at least once in the last two years), inactive donors (individuals who had donated blood before, but had not donated in the last two years) and non-donors. Data was collected through an online self-administered questionnaire from March to September 2018. 14 of the 17 regional blood transfusion centres in Spain and some public and private universities participated in the data collection process.

Blood transfusion centres sent their registered donors an e-mail with the URL of the online platform that hosted the questionnaire. They also spread the URL of the questionnaire along with an invitation message through their main social media accounts (especially Facebook and Twitter) and their own platforms (e.g. official website, newsletter, blog). Additionally, universities also spread the

invitation to the whole university community through their institutional e-mail service. The questionnaire was presented as research on factors influencing blood donation.

The initial sample comprised 42,657 participants. However, due to unfinished questionnaires, the sample was reduced to 35,982 individuals, which represents a questionnaire completion rate of 84.4%. Of this final sample, 85.1% were active donors, 8.3% were inactive donors and 6.6% were non-donors. Moreover, of this final sample, 81.1% came from blood transfusion centres' databases, 10.6% came from social media and 8.4% came from universities.

The sociodemographic profile of sample (see Table 1) was characterised as being both sexes, older than 35 years old (59.9%) and having university education (53.3%). Most of them were employed and their monthly income was less than 2,000 euros.

Characteristics	N	%
Sex		
Male	16,087	44.7
Female	19,895	55.3
Age (years)		
18-25	6,898	19.2
26-35	7,500	20.8
36-45	9,731	27.0
>45	11,853	32.9
Education		
No formal education or Primary	4,171	11.6
Secondary	12,623	35.1
University	19,188	53.3
Employed		
Yes	27,518	76.5
No	8,464	23.5
Total monthly income (euros)		
≤2,000	19,469	54.1
2,001-4,000	12,775	35.5
>4,000	3,738	10.4
Total	**35,982**	**100.0**

Table 1. Sample profile

3.2. Measures

Anticipated emotions (AEs). A scenario-based question was used. This formula has been used in previous works on AEs (Bagozzi et al., 2016; Escadas et al., 2019). It 'helps to standardize the social stimulus across respondents and at the same time makes the decision-making situation more

real' (Alexander and Becker, 1978, p. 103). The scenario was defined as follows: 'Imagine that you are now in front of a mobile blood donation unit and the promoter invites you to donate'. Then, two possible decisions were presented: 'If you decided NOT TO DONATE…' and 'If you decided TO DONATE…'. A series of positive and negative AEs were included for each decision ('not to donate' and 'to donate'), and were measured using a 7-point Likert scales where 1 meant 'strongly disagree' and 7 meant 'strongly agree'. Positive AEs of donation (posAEd) were happy, proud and satisfied. Negative AEs of donation (negAEd) were worried, regretful and anxious. Positive AEs of non-donation (posAEnon-d) were satisfied with my decision and calm. Negative AEs of non-donation (negAEnon-d) were disappointed, guilty and angry at myself. The decision to measure positive and negative AEs, both related to donation and non-donation, separately was taken because they are two different psychological systems instead of opposite sides of a single construct (e.g. Perugini and Bagozzi, 2001; Xie et al., 2013; Zampetakis et al., 2016).

To adapt the scales, first we extracted the emotions included in the classic AE scales (Bagozzi et al., 2016; Bagozzi and Dholakia, 2006b; Perugini and Bagozzi, 2001). Then, these were compared to the emotions which have been studied specifically in the blood donation field (e.g. Conner et al., 2013).

Motivations. The motivations scale was initially made up of 25 dichotomous items adapted from the literature (Beerli-Palacio and Martín-Santana, 2015; Charbonneau et al., 2015; Gonçalez et al., 2013; Hupfer et al., 2005; Karacan et al., 2013; Martín-Santana and Beerli-Palacio, 2008; Shaz et al., 2010; Solomon, 2012; Yuan et al., 2011). Given the length of this scale, which aimed to explore every possible donation motivation identified in the literature, dichotomous items were used with a twofold aim: firstly, to guarantee the highest questionnaire completion rate and, secondly, to avoid the occurrence of a central tendency bias, which has been well documented in data obtained using Likert-type scales (Douven, 2018).

Attitude towards donation. Cognitive and affective attitudes towards donation were measured with five semantic differentials previously used in the blood donation literature (Faqah et al., 2015; Godin et al., 2007; Masser and France, 2010). These items were scored between 1 and 7. In the final model, the 'Frightening/Not frightening' item was removed because its factor loading was much

lower than the recommended by the literature, and its removal did not affect the content validity of the construct, which included the two dimensions of attitude: cognitive and affective (two items each).

Donation intention. A 7-point Likert scale of two items measured donation intention (Godin et al., 2014; Masser et al., 2012). Also in this scale, 1 indicated a strong disagreement and 7 indicated a strong agreement. Donation intention, and not donation behaviour, was included in the model because, due to the Spanish Data Protection and Digital Rights Guarantee Act, blood transfusion centres are not authorised to provide any sort of personal information about their donors. Additionally, the methodology did not allow the linkage of completed questionnaires to registered donors. However, as mentioned in the Conceptual background and hypotheses section, the stated donation intention might be a useful proxy measure for donor behaviour when the latter is not available or cannot be determined.

Appendix 1 shows the final items in the scales. All measurement scales were pre-tested by 14 experts belonging to Spanish blood transfusion centres. These experts validated the content of the scales, and its suitability for the blood donation context.

4. RESULTS

4.1. Validation of the measurement model

The measurement models were validated in two steps. Firstly, a principal component analysis was performed to validate the scale for donation motivations and confirm the three-dimensional structure of the scale, as proposed by Gonçalez et al. (2013). Both Stata (StataCorp. College Station, TX) and SPSS 26 (IBM Corp. Armonk, NY) were used to perform the statistical analyses. Given the dichotomous nature of the motivation items, the tetrachoric correlation matrix was used as input (Debelak and Tran, 2013). In addition, the KR-20 coefficient was calculated to test the reliability of the global scale, and of each resulting factor as well. KR-20 is equivalent to Cronbach's alpha and it is specific for dichotomous variables (Nunnally and Bernstein, 1994). Lastly, to determine the number of factors to extract, the latent root criterion was followed. Thus, the factors extracted were only those with eigenvalues greater than 1 (Hair et al., 2014).

Table 2 shows the results of the PCA. From these, the following conclusions can be made: (1) the PCA can be considered satisfactory, given that its results explained 61.75% of the total variance; (2) factor loadings were satisfactory, as they were higher or close to 0.7 (Hair et al., 2014); (3) most communalities were higher than 0.5, which means that more than half of the variability of the respondents' answers was explained (Hair et al., 2014); and (4) KR-20 values were higher or very close to 0.7 (except factor 1 only), which means that the proposed scale is reliable. After validation, three items of the original scale were removed.

The PCA confirmed Gonçalez et al. (2013)'s 3-category proposal for the motivation scale used in this work. Factor 1 corresponds to Altruism, and it encompasses both pure altruism and warm-glow (Andreoni, 1990) motivations. Factor 2 corresponds to Self-interest, and it includes various forms of donation incentives (e.g. reputation-building, medical incentives, tangible rewards). Lastly, factor 3 corresponds to Response to a social or direct appeal, and it includes items related to marketing stimuli carried out by blood transfusion centres and requests from friends/relatives in need for blood. Three new variables were created from these results to be included as indicators (observed variables) in the SEM model to test the hypotheses. Each of them corresponds to the sum of the affirmative answers given by the respondents to the motivations belonging to the same factor, knowing that an affirmative answer takes the value of 1, and a negative one takes the value of 0.

Motivations	**Communalities**	**Factor loadings**		
		Factor 1: Altruism	**Factor 2: Self-interest**	**Factor 3: Response to a direct or social appeal**
MOT5	0.816	**0.828**	0.211	0.295
MOT4	0.691	**0.812**	0.077	0.163
MOT1	0.847	**0.810**	0.042	0.435
MOT2	0.677	**0.809**	0.111	0.096
MOT6	0.615	**0.704**	0.335	0.084
MOT3	0.446	**0.647**	-0.120	0.110
MOT12	0.724	0.101	**0.842**	0.070
MOT13	0.694	-0.057	**0.817**	0.149
MOT14	0.679	-0.013	**0.812**	0.142
MOT9	0.664	0.200	**0.777**	0.143
MOT10	0.654	0.216	**0.765**	0.151
MOT11	0.641	0.233	**0.741**	0.195
MOT7	0.647	0.365	**0.716**	-0.026

MOT15	0.447	-0.125	**0.543**	0.369
MOT8	0.521	0.506	**0.372**	0.356
MOT17	0.722	0.299	0.049	**0.794**
MOT18	0.639	0.304	0.237	**0.701**
MOT16	0.443	0.070	0.217	**0.625**
MOT21	0.492	0.234	0.218	**0.624**
MOT20	0.547	0.329	0.268	**0.606**
MOT22	0.495	0.275	0.230	**0.605**
MOT19	0.484	0.359	0.040	**0.595**
Eigenvalue		3.316	8.567	1.701
% explained variance (total)			61.75	
% explained variance (partial)		21.29	23.59	16.87
KR-20 (global scale)			0.822	
KR-20 (factor)		0.681	0.799	0.695

Table 2. PCA of the motivation scale

The second step in the validation process was validating the scales for AEs, attitude towards donation and donation intention by means of a confirmatory factor analysis, for which the maximum likelihood estimation method was used. AMOS 26 (IBM Corp. Armonk, NY) was the statistical software used.

The resulting model was statistically significant [χ^2 (104)=10,783.659, p=0.000]. Considering that this χ^2 value is sensitive to sample size, other fit indexes were used to assess the fit of the model. These indexes showed a good goodness-of-fit (CFI=0.963; NFI=0.963; TLI=0.946; RMSEA=0.053), hence this model adequately reproduced the covariance matrix. Following recommendations by Mathieu and Taylor (2006), the fit of the model was satisfactory, because the CFI value was higher than 0.95 and the RMSEA value was lower than 0.08. All individual reliabilities were above or close to the value recommended by the literature. Also, the relationship between each item and its dimension was significant, as the *t*-statistic values show (see Table 3). These results showed that all composite reliabilities (CR) and all average variance extracted (AVE) were above or close to the values recommended. Finally, the values of Cronbach's alpha indicated that the five scales of AEs were reliable. For all the aforementioned reasons, the measurement model was reliable, although it is necessary in future research to include new indicators in the attitude and intention scales to improve their psychometric results.

Causal relationships			Standardised estimates	*t*	*p*	Composite reliability
AE1	←	posAEd	0.899	210.799	0.000	CR=0.903
AE2	←	posAEd	0.856	199.857	0.000	AVE=0.757
AE3	←	posAEd	0.854			α=0.899
AE4	←	negAEd	0.858			CR=0.827
AE5	←	negAEd	0.810	141.065	0.000	AVE=0.617
AE6	←	negAEd	0.678	125.760	0.000	α=0.811
AE7	←	posAEnon-d	0.820	132.888	0.000	CR=0.872
AE8	←	posAEnon-d	0.936			AVE=0.774 α=0.868
AE9	←	negAEnon-d	0.825	212.614	0.000	CR=0.915
AE10	←	negAEnon-d	0.920	256.991	0.000	AVE=0.783
AE11	←	negAEnon-d	0.907			α=0.914
ATT1	←	ATT	0.440			CR=0.703 AVE=0.390 α=0.667
ATT2	←	ATT	0.645	70.634		
ATT3	←	ATT	0.858	70.894		
ATT4	←	ATT	0.463	60.123		
DI1	←	DI	0.598			CR=0.688
DI2	←	DI	0.840	55.820	0.000	AVE=0.532 α=0.648

Table 3. Confirmatory factor analysis of AEs, attitude towards donation and donation intention

4.2. Hypothesis-testing

Before testing the research hypotheses, the existence of common method variance (CMV) was analysed in order to determine whether there was spurious internal consistency. With that end, Harman's single-factor test was applied, which is a very widespread technique to address the issue of CMV (Podsakoff et al., 2003). This method was applied to determine the existence of a single factor or several through an exploratory factor analysis. Six factors were obtained, which explained 67.93% of the variance. These results indicated that there was not CMV in this work because the first factor only explained 23.66% of the variance, while the other factors explained 44.27%.

To test the research hypotheses, structural equation modelling (SEM) was carried out, using the maximum likelihood method. The results indicated that this was an acceptable model [$\chi^2(143)=25{,}833.466$, $p=0.000$; CFI=0.918; NFI=0.917; RMSEA=0.071] because the CFI value was between 0.90-0.95 and the RMSEA matches the threshold of 0.08 (Mathieu and Taylor, 2006), except χ^2 statistic, which is a sensitive indicator of sample size. As shown in Figure 2, these results demonstrate, firstly, that all AEs have a positive and significant effect on donation intention, except

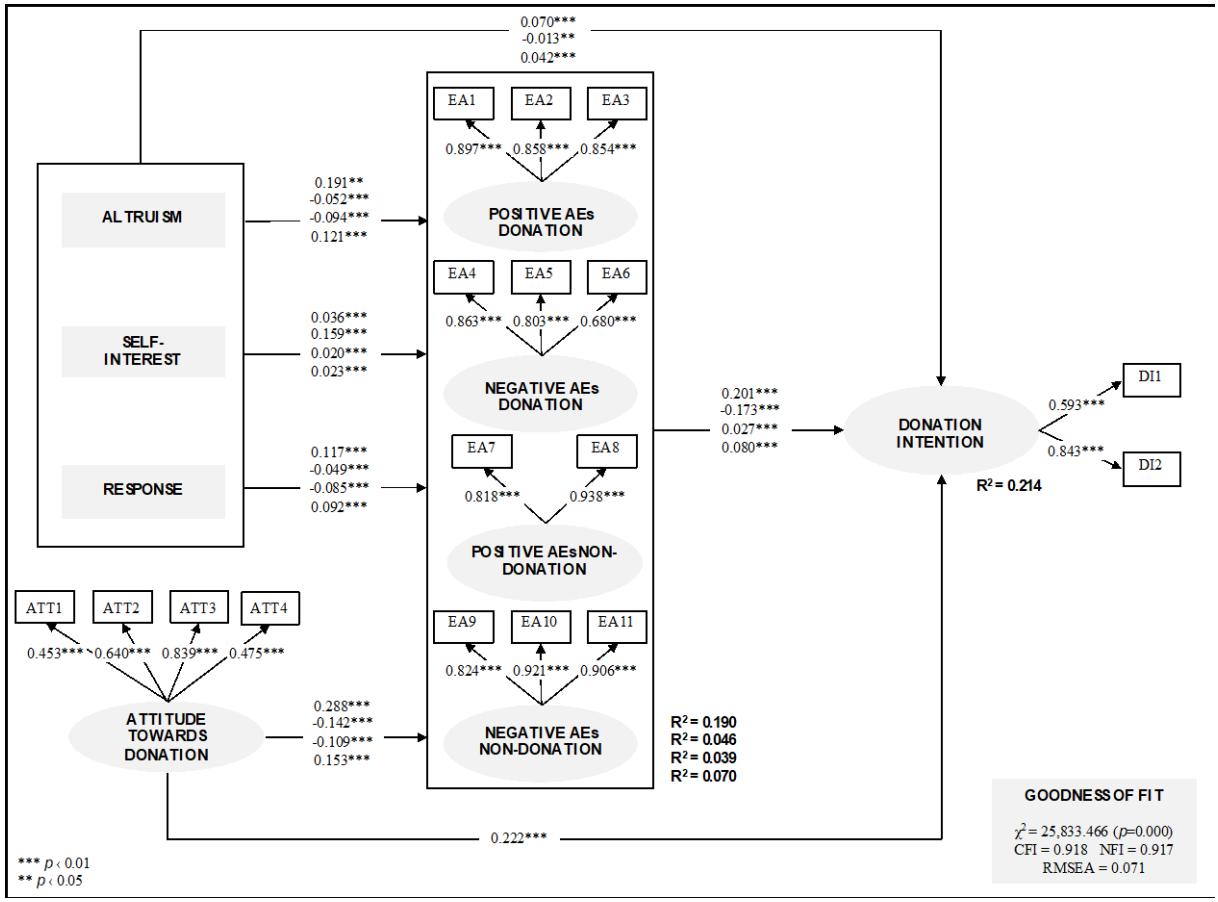
for negative AEs of donation, as expected. However, positive AEs of non-donation have a valence that is contrary to previous expectations. These results are confirmed by the literature which states that both categories of AEs motivating donation (posAEd and negAEnon-d) increase donation intention, whereas only one category of AEs motivating non-donation (negAEd) reduces donation intention. Among all AEs, it is positive AEs of donation that have the most powerful influence on donation intention (β=0.201; *t*=27.199; *p*=0.000). It can be concluded, therefore, that H1a, H1b and H1d find empirical support, but not H1c.

Secondly, the results show that motivations related to altruism and to response to direct or social appeal influence all AEs, increasing AEs motivating donation (posAEd and negAEnon-d) and lowering AEs motivating non-donation (negAEd and posAEnon-d), as envisioned in our initial hypotheses. As a consequence, H2a and H2c find empirical support. With regard to motivations associated with self-interest, a significantly positive influence over AEs motivating donation (posAEd and negAEnon-d) has been observed. However, the influence of such motivations over AEs motivating non-donation has not been as expected. That is, they have the opposite of the expected effect on negative AEs of donation (β=0.159; *t*=26.113; *p*=0.000) and on positive AEs of non-donation (β=0.020; *t*=3.400; *p*=0.000). Thus, H2b finds partial empirical support. On the other hand, regarding the relationship between motivation and donation intention, motivations related to altruism and response to direct or social appeal increase intention, but self-interest motivations reduce it (β=-0.013; *t*=2.069; *p*=0.039). The results point out that altruistic motivations have the greatest direct effect on donation intention (β=0.070; *t*=10.488; *p*=0.000). Thus, H4a and H4c are supported, but not H4b. However, after analysing the total effects of motivations on donation intention (direct and indirect effects through AEs), we can hierarchically organise the three motivation categories based on their explanatory capacities. Thus, the total effect of altruism is the greatest in size (0.124), followed by motivations related to response to direct or social appeal (0.079), and finally motivations of self-interest, which have almost no effect (-0.031).

As regards attitude towards donation, this work has found that this is a direct antecedent of the

four types of AEs. It positively influences AEs motivating donation (posAEd and negAEnon-d), and negatively AEs motivating non-donation (negAEd and posAEnon-d), as it was expected. Therefore, these results support H3. Furthermore, as also expected, attitude towards donation has a significant and positive effect on donation intention. Thus, H5 is supported.

As last remarks, the AEs that this proposed model best explains are the positive AEs of donation (19.0%), and from a global perspective, the model explains 21.4% of the donation intention variance. In this regard, it should be considered that there are other determining factors influencing donation intention.



Note: Values above the arrows are standardised estimates. Asterisks correspond to their level of significance.

Figure 2. Results of proposed model

To test H4, a multigroup SEM was used. According to Byrne (2004), before testing the moderating effect of a variable through multigroup SEM, it is necessary to analyse whether the constructs have the same significance for the three types of donors (active, inactive and non-donors).

For this, the existence of form invariance was analysed by adjusting the measurement model to each type of donor independently. The goodness-of-fit indexes for the three types of donors [active: $\chi^2(143)=19{,}947.425$, $p=0.000$; CFI=0.923; NFI=0.923; RMSEA=0.067; inactive: $\chi^2(143)=1{,}889.816$, $p=0.000$; CFI=0.930; NFI=0.924; RMSEA=0.064 and non-donors: $\chi^2(143)=2{,}173.240$, $p=0.000$; CFI=0.900; NFI=0.894; RMSEA=0.077] indicated that the fit was good in the three groups, therefore assuming that there was form invariance.

The results of the multigroup SEM, showed in Figure 3, lead to the following observations. In the first place, that the fit of the model was acceptable [$\chi^2(429)=24{,}010.677$, $p=0.000$; CFI=0.922; NFI=0.921; RMSEA=0.039].

Regarding the relationship between donation motivations and AEs, this analysis shows that, on the one hand, independently from type of donor, altruistic motivations bolster AEs motivating donation (posAEd and negAEnon-d) and lower AEs motivating non-donation (negAEd and posAEnon-d), with non-donors being influenced less. In active and inactive donors, altruistic motivations have a greater influence on positive AEs of donation ($\beta_{active}=0.191$ and $\beta_{inactive}=0.193$), whereas in the non-donors have a less influence on positive AEs of donation ($\beta_{non\text{-}donors}=0.132$). On the other hand, in motivations related to self-interest, no common pattern has been found with regard to influence on AEs among the three donor groups. Such motivations influence all AEs among active donors (posAEd, negAEd, posAEnon-d and negAEnon-d), two AEs among inactive donors (negAEd and posAEnon-d) and two AEs among non-donors (posAEd and negAEd). The unexpected positive influence of self-interest motivations on negative AEs of donation among all groups may be due to the type of product that is being studied (blood donation), since said motivations can be contrary to motivations that are more deeply rooted in society. This can provoke a personal conflict, as indicated by the previous literature (Niza et al., 2013; Promberger and Marteau, 2013). In addition, influence levels are greater among active donors, followed by inactive donors and, finally, non-donors. Lastly, concerning motivations related to response to direct or social appeal, it can be observed among all groups that such motivations increase AEs motivating donation (posAEd and negAEnon-d) and reduce AEs motivating non-donation (negAEd and posAEnon-d), with active donors being influenced the least. It is in this motivation category where the most remarkable differences in the estimators can be

seen among the three groups of donors. The present results are consistent with the findings of previous studies (Glynn et al., 2002; Nilsson Sojka and Sojka, 2008).

As regards AEs and donation intention, the results of the multigroup SEM shows that, among the three groups, AEs motivating donation (posAEd and negAEnon-d) bolster donation intention, although with different intensities. Among active donors, we can identify that positive AEs of donation generates greater donation intention. As regards AEs motivating non-donation, different patterns can be observed among the three subject groups, because the existence of these AEs among non-donors causes a sharper fall of donation intention. However, focusing now on donation motivations, their effect on donation intent differs by group. Thus, in the inactive and non-donor groups, response motivations hold the greatest influence over donation intention, whereas it is altruism in the active donor group. Although, self-interest motivations are not relevant among inactive donors and non-donors, active donors are slightly influenced by them, although negatively, which is further evidence of personal conflict as already mentioned. Moreover, when we take into account the total effects of the three motivation categories over donation intention based on type of donor, differences can be found among the three donor groups, mainly as regards altruism and response motivations (see Table 4). Thus, the greatest total effects in both categories can be observed among inactive and non-donors. On the other hand, among active donors, altruism is the main motivation, which is consistent with the results of Martín-Santana and Beerli-Palacio (2013), and Steele et al. (2008).

Motivations	**Effect**	**Type of donor**		
		Active	Inactive	Non-donors
Altruism	Direct	0.065	0.077	0.094
	Indirect	0.053	0.081	0.034
	Total	0.118	0.158	0.128
Self-interest	Direct	-0.035	0.012	0.015
	Indirect	-0.006	-0.024	-0.012
	Total	-0.042	-0.012	0.002
Response	Direct	0.007	0.142	0.193
	Indirect	0.033	0.070	0.050
	Total	0.040	0.212	0.243

Table 4. Direct, indirect and total effects of motivations over donation intention

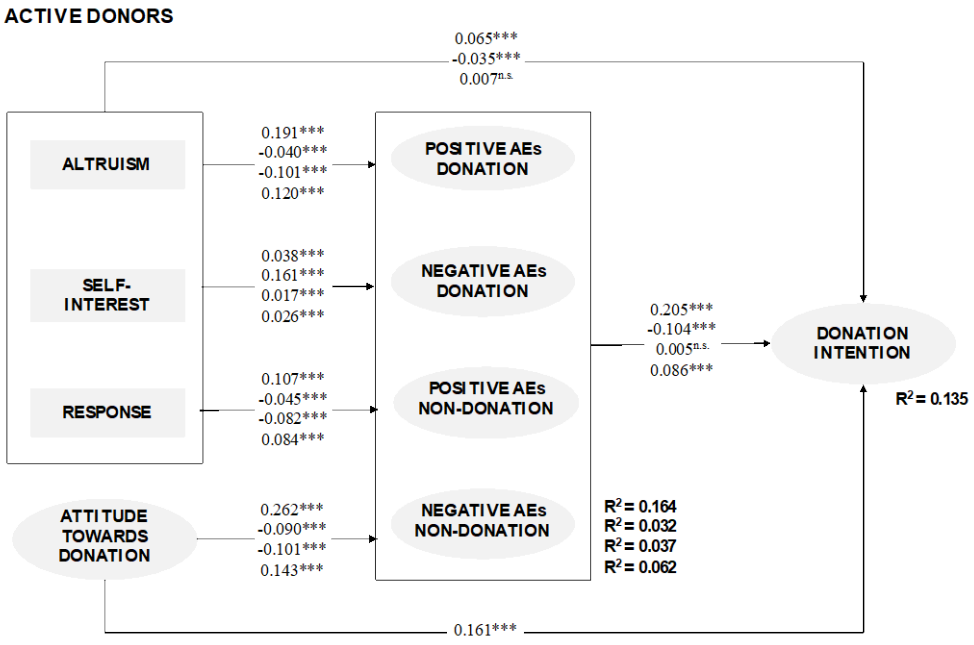
Considering now attitude towards donation, its overall effect on donation intention is very different among the three groups analysed, being much higher in non-donors and lower in active donors (see Table 5).

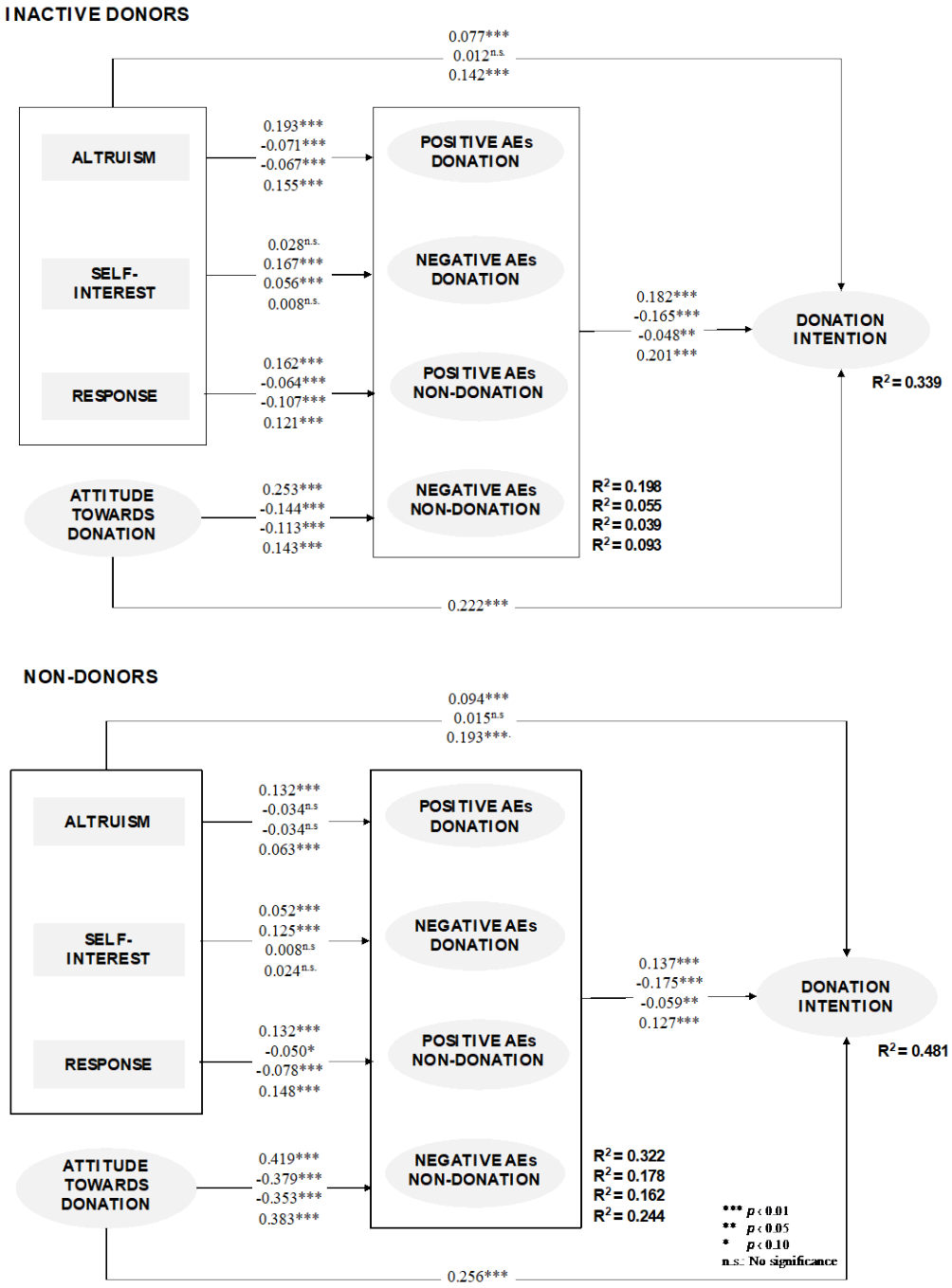
Effect	Type of donor		
	Active	Inactive	Non-donors
Direct	0.075	0.222	0.256
Indirect	0.161	0.104	0.193
Total	0.235	0.326	0.450

Table 5. Direct, indirect and total effects of attitude towards donation over donation intention

The last finding arising from the multigroup analysis is that the proposed model explained only 13.5% of donation intention for active donors, 33.9% for inactive donors and 48.1% for non-donors. These results highlight the significance of AEs as donation intention generators among non-donors, as well as the important role that motivations and attitude towards donation have as behaviour antecedents.

As a consequence of the above, there is empirical support for H4, which stated that the type of donor moderated the cause-effect relationships formulated in the model.





Note: Values above the arrows are standardised regression weights. Asterisks correspond to their level of significance.

Figure 3. Results of multigroup model

After contrasting the last hypothesis (H4), it was deemed appropriate to carry out an one-way ANOVA to find out whether there were differences between the average values of the constructs analysed (motivations, AEs, attitude towards donation and donation intention) among the three types

of donors. Table 6 shows that important differences can be found among all constructs among the three groups, with negAEnon-d being the lowest (F=3.916; p=0.020).

As regards motivations, active donors show the highest scores among the three categories. Having said that, according to the results of the Tukey statistical test, there are differences in altruism among non-donors, who register the lowest levels (M=5.80), versus groups with donation experience (active and inactive donors). On the other hand, difference in self-interest and response-related motivations can be found among active donors, who produce higher levels (M=2.94 and M=5.24, respectively).

Donor groups show different AE patterns. Thus, with regard to AEs of donation (posAEd and negAEd), there are significant differences among the three types of donors according to the Tukey statistical test, with active donors showing the greatest levels of positive AEs of donation and the lowest levels of negative AEs of donation. Concerning positive AEs of non-donation**,** although the result might seem incoherent, the greater strength of these emotions among donors with experience of donating (active and inactive donors) may be motivated by the reaffirmation of the decision they have taken by circumstances that are beyond their control or are situational in nature (medical reasons, negative experiences, lack of time, etc.).

Inactive donors present the lowest levels of positive AEs of non-donation most probably because their previous decision to abandon the system reaffirms the existence of these emotions.

Lastly, among the three groups, significant differences can be observed as regards attitude towards donation and donation intention, with active donors having the highest score (M=6.30 and M=6.40, respectively) and non-donors having the lowest (M=5.68 and M=4.22, respectively).

In order to know the size of these effects, the *Cohen's d* statistic has been used. There is general agreement on the interpretation of its values, so an effect size of between 0.2-0.3 could be considered small; between 0.5-0.8, a medium effect, and from 0.8 onwards, a large effect, considering that *Cohen's d* can reach values greater than 1. While the results of *Cohen's d* in Table 6 are consistent with those of the *Tukey* test, the effect sizes allow us to conclude that: (1) altruism is the motivation that evidences the main difference between active and inactive donors versus non-donors; (2) AEs of donation (posAEd and negAEd) mark the main differences between the three groups, mainly between

active donors and non-donors; (3) there are relevant differences in the attitude towards donation between the three groups, being very marked between active and inactive donors versus non-donors; and finally, (4) there are differences in the donation intention between the three groups, being very marked among active donors compared to the other two groups.

	Constructs	Means and standard deviations				*F* (*p*)	*Tukey* (*p<0.01*)	Effect sizes: *Cohen's d*		
		Total	Active (1)	Inactive (2)	Non-donors (3)			1-2	1-3	2-3
Motivations	Altruism	6.13 (1.32)	6.16 (1.31)	6.09 (1.28)	5.80 (1.44)	86.306 (0.000)	1-3 2-3	0.054	0.262	0.213
	Self-interest	2.91 (2.26)	2.94 (2.27)	2.72 (2.15)	2.81 (2.22)	14.942 (0.000)	1-2	0.100	0.058	0.041
	Response	5.21 (1.74)	5.24 (1.73)	4.99 (1.74)	4.98 (1.78)	50.266 (0.000)	1-2 1-3	0.144	0.148	0.006
AEs	posAEd	6.33 (1.04)	6.38 (1.00)	6.20 (1.15)	5.95 (1.32)	212.644 (0.000)	1-2 1-3 2-3	0.167	0.367	0.202
	negAEd	1.86 (2.61)	1.74 (2.56)	2.05 (2.73)	3.09 (2.82)	307.509 (0.000)	1-2 1-3 2-3	0.117	0.501	0.375
	posAEnon-d	3.75 (2.13)	3.76 (2.16)	3.84 (2.02)	3.57 (1.82)	11.341 (0.000)	1-3 2-3	0.038	0.095	0.140
	negAEnon-d	4.41 (2.03)	4.42 (2.05)	4.31 (1.97)	4.40 (1.86)	3.916 (0.020)		0.055	0.010	0.047
Attitude towards donation		6.24 (0.86)	6.30 (0.82)	6.08 (0,94)	5.68 (0.99)	647.698 (0.000)	1-2 1-3 2-3	0.250	0.682	0.414
Donation intention		6.14 (1.2)	6.40 (0.99)	5.07 (1.53)	4.22 (1.73)	5,784.645 (0.000)	1-2 1-3 2-3	1.032	1.547	0.520

Note: Altruism: scale from 0 to 6; Self-interest: scale from 0 to 9; and Response: scale from 0 to 7.

Table 6. Differences in average values based on type of donor

On the other hand, considering Fazio's (1990) work, among active donors, in contrast to the other two donor groups, a higher congruence between attitude towards donation and donation intention should be observed, because in this donor group the attitude is highly accessible. Therefore, AEs arise from said attitude. The results in Table 6 confirm this, given that the difference between the mean values of attitude and intention is lower in active donors (-0.1) than in the other two groups (1.01 and 1.46 in inactive donors and non-donors respectively).

These results lead to consider a binary logistic regression analysis, in which type of donor was the dependent variable (active donor versus inactive donor or non-donor), and the nine variables included in the research model were independent variables. By performing this analysis, it is attempted to assess the predictive power of the proposed variables when classifying an individual as an active donor. However, taking into account that there are some works in the literature which confirm the influence of sociodemographic characteristics on type of donor (e.g. Germain et al., 2007; Veldhuizen et al., 2009; Volken et al., 2015; Weidmann et al., 2012; Wittock et al., 2017), the regression analysis followed a two-step approach. In the first step, sociodemographic characteristics were introduced, in order to assess their predictive power. In the second step, the nine model variables were introduced.

The results show that Model 1 significantly predicted type of donor ($\chi^2(8)=30.867$, $p<0.001$), but only explained 5.0% of the variance (Nagelkerke R^2). Nonetheless, when all nine variables were introduced in Model 2, the explanatory power increased considerably ($\chi^2(8)=164.136$, $p<0.00$, Nagelkerke $R^2=32.9\%$).

The results of Model 1 show that all sociodemographic characteristics were significant predictors of type of donor, with age being the most significant (β=0.202, Wald=187.227, $p<0.00$) (see Table 7). Model 2 indicates that the nine variables were significant predictors of type of donor, except 'posAEd' (β=-0.032, Wald=2.756, $p=0.097$). The most significant variables were donation intention, attitude towards donation, response to a direct or social appeal motivations, posAEnon-d, and self-interest motivations. Lastly, this model showed that 87.0% of cases were correctly classified.

Variables		Model 1					Model 2				
		β	SD	Wald	*p*	Expβ	β	SD	Wald	*p*	Expβ
Sex		-0.582	0.033	313.235	0.000	0.559	-0.507	0.039	169.871	0.000	0.602
Age		0.202	0.015	187.227	0.000	1.223	0.210	0.018	143.811	0.000	1.234
Education		-0.306	0.025	151.965	0.000	0.737	-0.148	0.028	27.213	0.000	0.863
Employed		-0.187	0.037	26.145	0.000	0.830	-0.098	0.042	5.374	0.020	0.907
Total monthly income		-0.045	0.023	3.755	0.053	0.956	0.003	0.027	0.015	0.903	1.003
Motivations	Altruism	---	---	---	---	---	-0.067	0.015	19.142	0.000	0.935
	Self-interest	---	---	---	---	---	0.038	0.009	19.187	0.000	1.039

	Variables	Model 1					Model 2				
		β	SD	Wald	*p*	Expβ	β	SD	Wald	*p*	Expβ
	Response	---	---	---	---	---	0.044	0.012	13.840	0.000	1.045
AEs	posAEd	---	---	---	---	---	-0.032	0.019	2.756	0.097	0.969
	negAEd	---	---	---	---	---	-0.049	0.007	55.920	0.000	0.952
	posAEnon-d	---	---	---	---	---	0.038	0.010	14.285	0.000	1.039
	negAEnon-d	---	---	---	---	---	-0.104	0.011	85.065	0.000	0.902
Attitude towards donation			---	---	---	---	0.147	0.019	58.611	0.000	1.159
Donation intention			---	---	---	---	0.862	0.014	4046.345	0.000	2.369
Constant		3.217	0.116	765.073	0.000	24.963	-2.646	0.210	158.151	0.000	0.071

Table 7. Results of binary logistic regression models

5. CONCLUSIONS

From a marketing perspective, the purpose of this study was to make further progress on the application of AE framework in a non-profit context by analysing how AEs work in the donation decision process, through the identification of their main antecedents and consequences.

The significance of this research lies in the fact that it has verified, firstly, the appropriateness of the AE framework in the non-profit context; secondly, the role of motivations and attitude towards donation as antecedents for both AEs and donation intention; and thirdly, the moderating role of donation experience in cause-effect relationships between motivations, attitude towards donation, AEs and intention.

AEs have traditionally been studied mainly in consumer behaviour literature in a fragmented manner. A limited number of emotions were used (e.g. risk, regret), and studies have viewed positive and negative emotions as opposite sides of a single dimension, instead of separate psychological systems as suggested by Zampetakis et al. (2016). In addition, AE practical applications have mainly been developed in for-profit contexts and with experimental designs. It is for these reasons that the present study has been carried out, in a non-profit context (blood donation) and with a real sample, in order to verify an AE model consisting of four categories measured through multiple items. These

categories can be useful for blood donation centres when designing communications aimed at encouraging blood donation and addressing reluctance to donate.

To achieve the objective of this work, a quantitative research was conceived, using an online self-administered questionnaire distributed among a sample of 35,982 subjects, who were active donors, inactive donors and non-donors. This has been done to draw conclusions that may be useful for blood transfusion centres when designing communication campaigns adapted to different targets. While the questionnaire was being designed, we took into account the proposal made by Bagozzi et al. (2016), concerning the dichotomy between positive and negative AEs associated to action and inaction. Moreover, we considered the different motivation categories that make people donate blood, as mentioned earlier.

5.1. Theoretical contributions

From an academic point of view, the first benefit of this work is in demonstrating the usefulness of AEs for non-profit organisations, since it has validated, by means of an explanatory model, that AEs are direct antecedents of donation intention, which at the same time is an antecedent of real donation behaviour (Masser et al., 2008). Another academic contribution to the field of AEs is to show the role of motivations and attitude towards donation as antecedents. The present study has also provided the necessary empirical evidence to support the hypothesis that it is important to consider the non-action perspective (positive and negative AEs motivating non-donation), and not only the action perspective (positive and negative AEs motivating donation), when a model is created about the influence of AEs on donation intention.

As regards donation motivations, considered under the reason-to-donate perspective, their role as AE antecedents has been demonstrated, thus contributing to the limited previous research that propose that motivation could act as an AE antecedent (Leone et al., 2005; Pham, 1991; Pollai et al., 2011). Altruism and response to a direct or social appeal increase AEs motivating donation and lower AEs motivating non-donation. On the other hand, it is necessary to highlight the motivation scale used in the present work, which can be considered itself another theoretical contribution. A scale of 25 different donation motivations was designed and validated. The validation, which reduced the original

amount of items to 23, confirmed the underlying structure proposed by Gonçalez et al. (2013), who stated that donation motivation could be grouped in three categories: altruism, self-interest and response to a direct or social appeal. This scale can be particularly useful if blood transfusion centres use it as a segmentation criterion because it better represents the conceptualisation of altruism in blood donation than Gonçalez et al.'s (2013) proposal. In this new scale, the altruism construct is formed by both pure altruism and warm-glow motivations.

Regarding the relationship between attitude and AEs, this work has demonstrated the role of attitude as an antecedent of AEs. Following Fazio's (1990) proposal, attitude and its accessibility from memory determine how AEs affect the attitude-behaviour relationship. According to the scenario proposed to measure AEs in this work ('Imagine that you are now in front of a mobile blood donation unit and the promoter invites you to donate'), when the attitude is highly accessible (which occurs to a greater extent in active and inactive donors), AEs are generated automatically from memory. As a consequence, it is more likely that, when holding a positive attitude towards donation, AEs motivating donating arise, thus causing a higher willingness to donate in the individual. On the contrary, if the attitude is not that accessible, the characteristics of situation (e.g. the waiting time to enter the mobile unit, the individual's physical condition) determine AEs. In this way, it is possible that, although showing a positive attitude towards donation, arising AEs could be those discouraging donation, which means that the individual might be less willing to donate. The results of this work show this phenomenon, because the congruence between attitude and donation intention is higher in active and inactive donors than in non-donors (see Means and standard deviations in Table 6). Considering the above, another theoretical contribution of this work is the testing of the positive causal relationship between attitude towards donation and AEs, which has been scarcely studied and tested in the literature. On the other hand, although the literature has considered blood donor behaviour as an eminently deliberative process (Conner et al., 2013; Faqah et al., 2015; J. L. France et al., 2014; Giles et al., 2004; Godin et al., 2005), the analysis of AEs as mediators in the attitude-behaviour relationship shows that original components of the automatic/spontaneous decision model might intervene, as Fazio's (1990) theoretical work suggests.

Another contribution that this study has made is to consider donation experience as a new variable that moderates relationships between motivations, attitude towards donation, AEs and intention. In this regard, it should also be noted that the present model has greater predictive capabilities in explaining almost 50% of donation intention variance among non-donors by taking into account motivations, attitude towards donation and AEs as antecedents. In this regard, it is important to note that, as stated in the literature, barriers to donation have a strong negative influence on the intention to donate, and therefore would contribute notably to explain donation intention.

Lastly, the results of this work allow to predict the most salient characteristics under an individual could be labelled as an active donor, which are an older age, donation intention, attitude towards donation, motivations related to both self-interest and response to a direct or social appeal, and positive AEs of non-donation. Therefore, these would be the most relevant factors to be considered by blood transfusion centres when designing their segmentation strategies.

Thus, we have expanded and delved into donor behaviour theory by identifying new variables that respectively predict and moderate behaviour.

5.2. Managerial implications

The present study draws a series of practical conclusions that are particularly relevant for blood transfusion centres when managing their communication strategies that must be adapted to the different types of donors (active, inactive and non-donors) in the context of loyalty, recovery and recruitment programmes, respectively. In the field of marketing the specific circumstances under which the individual's decisions are based on AEs are relevant insofar as they can be determined by context variables (e.g. communication) (Pollai et al., 2011; Rezvani et al., 2017). This is supported by the results of studies carried out by Bagozzi et al. (2016), and Gershoff and Koehler (2011), which suggest that AEs can be provoked and affected by external stimuli, such as commercial messages (Bagozzi et al., 2016). As Mellers and McGraw (2001) suggest, expected emotional outcomes are simple but useful guides to drive commercial messages towards a desired outcome.

One main conclusion is that AEs and attitude towards donation hold greater influence over donation intention than motivations, which are one of the variables most often used both in academic

and professional studies about blood donors (Bednall and Bove, 2011; C. R. France et al., 2014). In this work, a measurement model of positive and negative AEs has been validated from a dual perspective integrating action and non-action. This can be used by blood transfusion centres to tailor communication campaigns aimed at promoting donation and addressing resistance to donate.

In order to encourage people to give blood, communication must be based on positive AEs of donation and negative AEs of non-donation, i.e. it should emphasise emotions of happiness, pride and satisfaction derived from donation, as well as feelings of disappointment, guilt and anger at oneself caused by non-donation. In other words, and following Escadas et al. (2019), to inspire socially responsible and desirable behaviours, it would be recommendable to emphasise both their future emotional benefits (positive AEs) and costs (negative AEs). In addition, to reduce resistance to donation, communication must be focussed on negative AEs of donation; that is to say, it should reduce or eliminate emotions of worry, regret or anxiety that can be associated with blood donation. In addition, blood transfusion centres should also make efforts to generate a positive attitude towards donation in the reference population, given their influence on AEs and donation intention.

Obviously, these recommendations do not imply that blood transfusion centres should not consider motivations as important elements in communication, due to their direct and indirect influence on donation intention by means of AEs. In this regard, the total effects of the three motivation categories identified indicate that communication campaigns launched by blood transfusion centres should focus on enhancing only altruism and motivations related to response to direct or social appeal.

Another important conclusion drawn in this study is the fact that there are significant differences in the cause-effect relationships analysed according to type of donor (active, inactive and non-donors). According to the size of the total effects of the three motivation categories on donation intention according to donor type, we can infer the following practical implications: (1) transfusion centres' communication campaigns should not be based on self-interest motivations, regardless of donor type; (2) the great explanatory capabilities of donation intention among non-donors should allow transfusion centres to focus resources on promoting motivations and AEs, but the same does not happen with the other two groups. Therefore, transfusion centres should consider other variables that

can influence said groups' behaviour, such as donation barriers (Duboz and Cunéo, 2010; Romero-Domínguez et al., 2019), the perceived quality of the blood donation service or trust in the system (Melián-Alzola and Martín-Santana, 2020); (3) campaigns aimed at promoting donation on the basis of altruism should be targeted at the general public, whether they have donation experience or not, although their influence on non-donors might be greater. In parallel, said influence might be lower among active donors since they already donate blood out of habit (Ringwald et al., 2010), (4) campaigns targeting inactive donors and non-donors, besides appealing to their altruistic spirit, should appeal to immediate action in mass media. They should emphasise the need for blood, using a creative strategy based on testimonials, both made by spokespersons from pertinent social and reference groups, encouraging people to identify to said spokespersons (Martín-Santana et al., 2018). This would contribute to achieve the so much desired change in the donation behaviour; and (5) transfusion centres can complement campaigns aimed at inactive donors with direct marketing campaigns (Sundermann and Leipnitz, 2019), using their inactive donor databases, especially since these donors are already familiarised with the donation system and have already overcome many donation barriers or obstacles. This will make the system more efficient and effective, since recruiting from inactive donors requires less effort than recruiting entirely new donors.

5.3. Limitations and future research

The main limitation of this work is basically limited to the population under study - Spanish donors and non-donors. For this reason, this work should be replicated in other geographical areas. Along the same line, since volunteering is the only way to legally donate blood in Spain, it would be especially interesting, for comparative purposes, that the study be repeated in countries with different blood donation systems (e.g. remunerated or mixed systems).

In the context of blood donation, there are no organisations that can be identified as competitors in the market. Another line of research for the future would be to apply the proposed model in other non-profit contexts, where competition might play an essential role in consumers' decision-making. In this regard, it would be especially interesting to first validate this model among

non-governmental organisations, where consumers have to evaluate and analyse different alternatives before making an actual decision.

To increase the explanatory capabilities of the present model, it would be advisable to include other explanatory variables related to AEs or donation intention, such as barriers, perceived service quality, satisfaction with the last blood donation, etc. This rationale would contribute to compare the explanatory power of AEs on donation intention versus the power of these other variables. In addition, it would be relevant to analyse the moderating effect that people's social-demographical variables can have, as well as other variables related to their involvement in non-lucrative organisations or non-governmental organisations, be it paid or voluntary.

One last proposal regarding the study of attitude in the framework of the proposed model (as antecedent of AEs and also as direct antecedent of donation intention) is to analyse the adequacy of measuring individuals' implicit attitude towards donation by means of the sorting paired features task (Bar-Anan et al., 2009), because these authors state that this approach would contribute to increase the convergent and discriminant validity of the construct.

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APPENDIX 1. Final items of the scales

Code	Constructs
	Motivations
	Altruism:
MOT1	Human solidarity, helping someone or saving lives
MOT2	Fulfilling the social duty or moral obligation of helping other people
MOT3	Donating blood requires no effort
MOT4	Since blood cannot be artificially produced, we must all collaborate
MOT5	Personal satisfaction derived from helping others
MOT6	Donating blood makes me feel needed and useful to society
	Self-interest:
MOT7	Other people will have a good opinion of me
MOT8	I or my family could need blood in the future
MOT9	I can get my blood test results
MOT10	I can get to know if I suffer from an infectious disease
MOT11	I can get medical advice on my health status
MOT12	I can get social recognition if I give blood regularly (public act, diplomas, medals, certificates, etc.)
MOT13	I can get symbolic gifts if I donate (t-shirts, pins, towels, cups, etc.)
MOT14	They will reward my track record as a blood donor with symbolic gifts
MOT15	I can get 1-2 free hours at work to donate
	Response to direct or social appeal:
MOT16	My blood group is very rare or there is great demand for it
MOT17	An urgent call for blood
MOT18	I saw or heard an advertising campaign on TV, the radio or social media
MOT19	I got a call or a message from the donation centre
MOT20	I have heard or seen testimonials from people who have received a blood transfusion
MOT21	I found mobile donation venues near my house, my place of work/study or popular places
MOT22	I want to help a relative or a friend who needed blood
	Anticipated emotions (AEs)
	Positive anticipated emotions of donation (posAEd):
AE1	If I decided TO DONATE, I would feel happy
AE2	If I decided TO DONATE, I would feel proud
AE3	If I decided TO DONATE, I would feel satisfied
	Negative anticipated emotions of donation (negAEd):
AE4	If I decided TO DONATE, I would feel worried
AE5	If I decided TO DONATE, I would regret it
AE6	If I decided TO DONATE, I would feel anxious
	Positive anticipated emotions of non-donation (posAEnon-d):
AE7	If I decided NOT TO DONATE, I would be satisfied with my decision
AE8	If I decided NOT TO DONATE, I would feel calm
	Negative anticipated emotions of non-donation (negAEnon-d):
AE9	If I decided NOT TO DONATE, I would feel disappointed
AE10	If I decided NOT TO DONATE, I would feel guilty
AE11	If I decided NOT TO DONATE, I would feel angry at myself
	Attitude towards donation (ATT)
	Donating blood is….
ATT1	Harmful – Beneficial
ATT2	Unnecessary – Necessary
ATT3	Unsatisfactory – Satisfactory
ATT4	Unpleasant – Pleasant
	Donation intention (DI)
DI1	I am going to donate in the next four months
DI2	I would like to become a regular donor (twice or more times a year)