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Predicting intentions to donate blood among non-donors in Australia: An extended
Theory of Planned Behavior

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Abstract

BACKGROUND: With an increasing demand for blood and blood products in Australia, there is a continual need to recruit blood donors. As such, it is important to investigate the factors that impact on non donors' decision-making processes with regard to donating blood for the first time. Previous research has established the efficacy of the Theory of Planned Behavior (TPB) in predicting blood donor intentions. The current research aimed to test a TPB model augmented with constructs implicated in previous blood donor research; specifically descriptive norm, moral norm, anticipated regret and donation anxiety.

STUDY DESIGN AND METHODS: Participants completed measures assessing the standard TPB variables of attitude, subjective norm, and perceived behavioral control as well as descriptive norm, moral norm, donation anxiety and anticipated regret. Path analysis examined the utility of the augmented TPB model to predict 195 non-blood donors' intentions to donate blood.

RESULTS: A final revised model provided a very good fit to the data and included attitude, perceived behavioral control, moral norm, descriptive norm, anticipated regret and donation anxiety as direct predictors of intention, with these factors accounting for 70% of the variance in intentions to donate blood.

CONCLUSION: A revised TPB model provided a more efficacious predictor of non-donors' intentions to donate than the standard TPB model and highlights the role that norm-based factors and affective-laden constructs play in predicting non-blood donors' intentions to donate.

KEYWORDS: Theory of planned behavior, intentions, blood donation, first-time donors, descriptive norm, moral norm, anticipated regret, donation anxiety.

ABBREVIATIONS: TPB = Theory of Planned Behavior; PBC = Perceived behavioral control.

INTRODUCTION

Within Australia and internationally, there is a continual need to maintain a safe, secure and sufficient supply of blood and blood products. This need occurs whilst only 3.5% of the age-eligible Australian population donates blood or blood products.^{1,2} Increased stringency in donor eligibility pre-requisites, a general overall decline in volunteering,^{3,4} and the demand for blood and blood products in Australia and elsewhere all contribute to the growing need to expand the existing blood donor population. In accordance with this aim, most blood donation campaigns target prospective donors; however, the factors that motivate these non-donors to give blood for the first time are poorly understood.⁵ This lack of understanding is further perpetuated by the use of mixed samples in the literature comprising both donors and non-donors for predictive analyses.^{6,7} It is, therefore, of critical importance to determine the specific factors that impact on non-donors' (i.e., those individuals without a prior donation history) decisions to donate blood for the first time.

Although several studies have examined non-donors' beliefs about blood donation and suggest that negative beliefs stemming from anxiety,^{7,8,9,10} physiological effects (e.g., fainting, dizziness, nausea, pain)^{7,8,11,12,13,14} and/or inconvenience¹⁰ may serve to act as barriers that prevent blood donation, surprisingly few studies have employed a theoretical framework to specifically examine the predictors of the decision to donate blood amongst non-donors (cf.,^{9,15}). As such, we employed a decision-making framework successfully used in the study of the motivational determinants of blood donation amongst donors and mixed samples of donors and non-donors (e.g.,^{15,16,17,18}), the Theory of Planned Behavior.

The Theory of Planned Behavior

The Theory of Planned Behavior (TPB, Figure 1)¹⁹ specifies intention (internal declarations to act) as the main antecedent to behavioral performance. Intention, in turn, is preceded by attitudes (positive or negative evaluations of performing a behavior), subjective norms (perceived social pressure to perform or not perform a behavior) and perceived behavioral control (PBC; perceived control over or ability to perform a behavior, also proposed to be a direct predictor of behavior). Support for the TPB model has been demonstrated in a number of meta-analyses including Armitage and Conner's²⁰ study which found that the TPB accounted for an average of 39% of the variance in intentions and 27% of the variance in behaviour. Within the context of blood donation, the TPB model has successfully explained between 31% and 72% of the variance in blood donation intentions and 54% and 56% in blood donation behavior.^{6,7,8,9,18,21} However, in studies that have sampled exclusively donors, or a mix of donors and non-donors,^{6,7,8,16,17,21} there has been varying degrees of support for each of the predictors within the TPB model, with attitudes and PBC, rather than subjective norm, emerging as consistent predictors of intention (see Ferguson et al.²² and Masser et al.¹⁸ for reviews). Where non-donors' have been examined specifically, subjective norm,⁹ attitude and PBC^{9,15} have all been found to predict non-donors' intentions to donate blood.

While generally a robust theoretical framework for understanding blood donation decisions, a number of revisions to the model have been proposed to incorporate other factors particularly relevant to the context of blood donation, including an affective component (e.g., anticipated regret),^{15,17} and the perception that one has a moral obligation to donate blood (i.e., moral or personal norm).^{6,15,17} In addition to these revisions relevant specifically to the blood donation context, other researchers in the broader context of TPB research have proposed a revision of the

subjective norm component to increase its predictive utility in the model.^{23,24,25} Such revisions of the subjective norm component are also relevant in the blood donation context given the inconsistent contribution of the subjective norm construct.^{18,26} Therefore, in the current study we proposed the inclusion of four additional components to the TPB model, donation anxiety, anticipated regret, moral norm, and descriptive norm, and we briefly review each in turn.

Anticipated Affective Consequences

In general, there are two affect-based constructs that have been explored in the blood donation literature, donation anxiety (anxiety about donating blood in the future related to concern about needles, exposure to blood, or pain)^{6,8,27} and, from a TPB perspective, anticipated regret (an expectation about the future experience of regret in response to anticipated future action or inaction).^{15,28} These two affect-based constructs reflect how affective reactions can both promote and inhibit blood donation. On the one hand, anxiety about the consequences of donating blood (i.e., donation anxiety) may function as a major deterrent to donation,¹⁶ particularly for those who have not donated in the past.²⁹ On the other hand, the anticipated feeling of regret at not donating blood in the future may strengthen blood donation intentions and encourage both donors and non-donors to avoid the negative emotional burden of regret at failing to donate blood.^{13,15} While the influence of donation anxiety, in the TPB model, on non-donors' intentions has yet to be explicitly tested, two studies have demonstrated a direct effect for anticipated regret on non-donors'¹⁵ and new donors'¹⁷ blood donation intentions, suggesting that anticipated regret may also be a relevant predictor of intentions to donate blood for the first time.

Moral Norm

Rather than a consideration of affective consequences, moral norm reflects feelings of personal responsibility or duty to perform a behavior.³⁰ In samples of donors and mixed samples of donors and non-donors, moral norm has been demonstrated as a direct predictor of blood donation intentions^{6,17} and behavior,¹⁷ as well as an indirect (via attitude) predictor of intentions.¹⁶ For non-donors, the impact of moral norm on the intention to donate blood has been less consistent. Lemmens et al.⁹ found moral norm to be a significant direct predictor of non-donors' blood donation intentions whereas Godin et al.¹⁵ did not find moral norm to be a significant predictor of intentions for non-donors. Furthermore, in testing the differences in the predictive power (i.e., unstandardized beta weights) of significant variables in the model, it has been suggested also that moral norm may be more important for the maintenance of blood donation behavior (i.e., donors) rather than behavior initiation (i.e., non-donors).^{13,15,17} For instance, in evaluating the differences in predictors of donation intentions between donors and non-donors, McMahon and Byrne¹³ observed that donors perceived a stronger moral obligation to donate than non-donors.

Descriptive Norm

In comparison to moral norm which represents a person's perceived moral duty to donate blood and subjective norm which reflects perceived pressure from others important to the self to perform a behavior, descriptive norm involves a consideration of what important others actually do.²³ Descriptive norms have particular relevance for the context of blood donation as the act of donation can be considered as a public action, the decision-making process can occur in collaboration with other people such as work groups and friendship groups (e.g., meeting one's friends at the donation setting³¹), and these social networks can be used in the recruitment of blood donors.³² Previous research has found that knowing other people

who donate blood,³³ and particularly knowledge of family and friends donating³⁴ acts to increase the likelihood of donating blood both for the first-time and continuing to donate in the future.

The Current Research

Given the paucity of research about non-donors and the need to understand the motivations underlying non-donors' decisions to donate blood, we employed an extended TPB model to predict non-donors' intentions to donate blood for the first time. Although not a measure of behavior, intentions are the most consistent predictor of behavior particularly for new and less experienced donors,^{22,35,36} and a suitable proxy measure for behavior when actual behavior cannot be measured.^{16,37} The augmented TPB model assessed non-donors' blood donation intentions as well as the standard (attitude, subjective norm, and PBC) and extended (donation anxiety, anticipated regret, descriptive norm, personal norm) TPB constructs. In a similar method to France et al.,¹⁶ we used structural equation modeling to represent the relationships between the variables and, based on previous research¹⁵ and TPB model specifications,¹⁹ we hypothesized that all factors would be direct predictors of non-donors' intentions to donate blood for the first time.

MATERIALS AND METHODS

Participants and Design

Participants were 195 (147 female, 43 male, 5 undisclosed) residents of Queensland, Australia who self selected to participate in this study. These participants, from a total of 820 who responded to an initial request distributed to 5,466 randomly selected residents of Queensland, met the eligibility requirement of having not donated blood prior to the commencement of the study, and believing themselves eligible to donate blood. Participants received a survey, an accompanying

covering letter outlining the purpose of the study, and an invitation to enter into a prize draw and/or receive information about the findings of the study. An additional reminder card and the chance to win one of ten \$50 gift vouchers were used to increase the response rate. Throughout the survey, the target behavior of blood donation was defined as visiting a blood collection site (e.g., a blood bank or a mobile van) with the intention of donating blood, regardless of whether a blood donation was actually made. Survey responses were collected between December, 2005 and May, 2006. Of the 195 respondents, the majority were married (67.2%), had either finished high school or attended college or University (86.7%), and had a median age of 35-44 years (with 65% of respondents aged 25-54 years).

Measures

Participants completed a questionnaire including the 28 measures directly relevant to the current study. The items of direct relevance to this study, and reported below, were interspersed among items unrelated to the current study. Standard (attitude, subjective norm, PBC, intention) TPB measures were based on guidelines specified by Ajzen.¹⁹ All measures had good internal reliability (all α s > .81) and composite scores were created so that higher scores equated to stronger levels of the construct. In addition to the measured constructs, a range of demographic questions focusing on age, gender, marital status, level of education and self-reported blood donor eligibility (*yes, no, or don't know*) were included in the survey.

Intention. Intention to donate blood was assessed using three items: “I would like to donate blood in the next 3 months” scored 1 (*strongly disagree*) to 7 (*strongly agree*), “I intend to donate blood in the next 3 months” scored 1 (*strongly disagree*) to 7 (*strongly agree*), and “I will donate blood in the next 3 months” 1 (*very unlikely*) to 7 (*very likely*).

Attitude. Six 7-point semantic differential items assessed attitude towards engaging in blood donation in the next 3 months: *unpleasant/pleasant, bad/good, unsatisfying/satisfying, pointless/worthwhile, unrewarding/rewarding, and stressful/relaxing.*

Subjective norm. Subjective norm was measured using three items: “People who are important to me would recommend that I donate blood” scored 1 (*strongly disagree*) to 7 (*strongly agree*), “People who are important to me would think that I should donate blood” 1 (*strongly disagree*) to 7 (*strongly agree*), and “If I were to donate blood, people who are important to me would –” scored 1 (*strongly disapprove*) to 7 (*strongly approve*).

Perceived behavioral control. Four items measured PBC: “I have complete control over whether I donate blood or not in the next 3 months” scored 1 (*strongly disagree*) to 7 (*strongly agree*), “How much control do you have over whether you donate blood or not in the next 3 months” scored 1 (*no control*) to 7 (*complete control*), “It would be easy for me to donate blood in the next 3 months” scored 1 (*strongly disagree*) to 7 (*strongly agree*), and “I am confident that I will be able to donate blood in the next 3 months” scored 1 (*not confident at all*) to 7 (*very confident*).

Descriptive norm. For descriptive norm,²⁵ participants responded to three items assessing perceptions of “how likely it is that the following people or groups of people will donate blood in the next 3 months”: a) family, b) employer and c) friends and colleagues, scored 1 (*Very Unlikely*) to 7 (*Very likely*).

Moral norm. Four items served as a measure of moral norm^{6,9}: “I believe I have a moral obligation to donate blood”, “It is in line with my principles to donate

blood”, “My personal values encourage me to donate blood”, “I have a responsibility to donate blood”, all scored 1 (*strongly disagree*) to 7 (*strongly agree*).

Anticipated regret. Anticipated regret¹⁵ was measured using three items, all with the stem of “In the future if I did not donate blood”: “I would regret it”, “It would bother me”, and “I would be disappointed”, all scored 1 (*very unlikely*) to 7 (*very likely*).

Donation anxiety. Donation anxiety was assessed using two items with the stem: “In the future if I donate blood, I would feel:” a) distressed, and b) anxious, both scored 1 (*not at all*) to 7 (*very much*). These two items were correlated at, $r = .81$.

Statistical analysis

Initial examination of the data involved an analysis of the correlational relationships between the measured variables and intentions to donate blood. Structural equation modelling (SEM) analyses were then performed using AMOS 7.0.0 to assist in a nested comparison of the standard and proposed extension of the TPB model. A number of fit indices are utilised in AMOS in order to determine the goodness of fit of the proposed model to the data. A satisfactory fit is obtained when the chi-square test is non-significant. The maximum likelihood robust estimation procedure was used in the SEM analyses to obtain the χ^2 statistic.³⁸

Due to the dependence of chi-square tests on sample size and the number of variables included in the model, other indices were also examined. The fit of the models were also evaluated with the comparative fit index (CFI), the root mean square error of approximation (RMSEA) and Bentler-Bonett normed fit index (NFI). A good fit is obtained when the CFI is above .95 and the RMSEA is below .06.³⁹ Path coefficients and R^2 values were also inspected to evaluate the predictive power of the model.

One of the main principles frequently applied in SEM analyses is the assessment of model parsimony. Parsimony is assessed via a ratio of degrees of freedom in the model in comparison to degrees of freedom in the null model. Thus, for two models with comparable overall model fit indices, the preferred model is the one with fewer free parameters (i.e., more degrees of freedom).⁴⁰ The Akaike Information Criterion (AIC) is an indicator of parsimony in model fit which allows the comparison of alternative models that are not hierarchically related.⁴¹ A lower AIC level indicates a more parsimonious model fit (i.e., model has fewer parameters and greater degrees of freedom). It should be noted that SEM was not used in its full form in the following models due to the constraint of sample size. Rather than enter the measured items into the model to form latent constructs, it was considered best for these constructs to be entered as composite variables. Further, as in France et al.,¹⁶ predictors in the models were allowed to correlate freely.

RESULTS

Correlational Analyses

As shown in Table 1, correlational analyses revealed that all of the measured variables were significantly related to intentions to donate blood for the first time (all $ps < .01$). Anticipated regret revealed the strongest positive association to intention to donate blood for the first time in the next 3 months, followed by moral norm, attitude, subjective norm, descriptive norm and PBC. Anxiety toward donating blood had a significant negative relationship with intention to donate blood for the first time, suggesting that donation anxiety is a construct independent of anticipated regret ($r = -.40$).

Tests of the Models

First, the proposed model (Figure 2) which included attitude, subjective norm, PBC, moral norm, descriptive norm, anticipated regret and donation anxiety as direct predictors of non-donors' intentions to donate blood for the first time was analyzed to investigate whether it improved upon the standard TPB model (Figure 1). In accordance with the procedure adopted by France et al.,¹⁶ the comparison between the standard TPB model and the proposed model was achieved by specifying the standard TPB model as a nested model of the proposed model. Thus, the regression weights of the paths between descriptive norm, moral norm, anticipated regret, donation anxiety, and intention in the proposed model were set to 0. The results of the goodness-of-fit tests for the tested models are presented in Table 2. As the standard TPB model is a nested model of the proposed model, analyses to test the significance of the difference in the chi-square were conducted. The analysis indicated that the proposed model provided a significantly better fit to the data than the standard TPB model, χ^2 difference (4) = 97.14, $p < .001$.

Correlations amongst constructs for the TPB-based models were computed and examined. Using AMOS 7.0.0, a proposed model based on the theory of planned behavior¹⁹ incorporating standard TPB items (attitude, subjective norm and PBC), descriptive norm, moral norm, anticipated regret and donation anxiety was constructed (Figure 2). As shown in Table 2, the SEM analysis demonstrated that this model provided a significantly better fit to the data than the standard TPB model and provided a good fit to the data on all fit indices, with the AIC index measuring model parsimony reduced to 69.13. All predictor variables except subjective norm demonstrated a significant relationship with intention and in total the predictors accounted for 70% of the variance in non-blood donors' intentions to donate blood for the first time.

In the interest of improving model parsimony, and on the basis of the modification indices, the proposed model was revised. The non-significant path between subjective norm and intention was removed and the model re-run (see Figure 3). As shown in Table 2, the revised model provided an improved fit to the data and also accounted for 70 % of the variance in non-blood donors' intentions to donate blood for the first time. The AIC index indicated that the revised model (AIC = 49.47) was more parsimonious than the proposed model. All predictor variables demonstrated a significant relationship with intention (see Figure 3). Moral norm was the construct with the largest beta weight in the model ($\beta = .32, p < .001$), followed by anticipated regret ($\beta = .29, p < .001$), attitude ($\beta = .28, p < .001$), PBC ($\beta = .18, p < .001$), donation anxiety ($\beta = -.17, p < .001$) and descriptive norm ($\beta = .13, p = .02$).

DISCUSSION

The current study used an extended TPB model to explore the determinants of non-donors' intentions to donate blood for the first time given the identified need to understand the motivations of those who have never previously donated blood.⁵ The proposed model incorporating standard (attitude, subjective norm, PBC) and extended (descriptive norm, moral norm, anticipated regret, and donation anxiety) TPB constructs as direct predictors of non-donors' intentions to donate blood for the first time was contrasted with the standard TPB model, and later revised, informed by the model modification indices to further improve the parsimony of the model.

The results revealed that the proposed model incorporating additional variables provided a better fit to the data than the standard TPB model. Specifically, as predicted, attitudes, PBC, descriptive norm, moral norm, donation anxiety and anticipated regret had a direct relationship with intention to donate. In contrast to predictions, but consistent with previous blood donation^{6,18} and broader TPB

research,^{20,23} subjective norm was not a significant direct predictor of intention to donate for the first time.

Anticipated Affective Consequences

In attempting to account for the emotional or affective aspects of blood donation identified in previous literature that may be particularly relevant for non-donors,^{7,8,9,10} the current study investigated the addition of donation anxiety and anticipated regret to the TPB model. As hypothesised, non-donors' expectations about affective experiences related to donating blood play an important role in the formation of intentions to donate blood for the first time with both donation anxiety and anticipated regret emerging as direct predictors of intentions.

In line with previous research highlighting the importance of affective reactions as barriers to blood donation,^{27,29} those who did not anticipate experiencing anxiety or distress in relation to blood donation in the current study were more likely to intend to donate blood. Thus, potential recruitment strategies for non-donors contemplating the commencement of their donor career may include promoting blood donation as a positive experience (e.g., using donor testimonials),^{11,42} communicating ways to overcome anticipated affective or physiological reactions (e.g., hydration, applied muscle tensing techniques)^{43,44} or making blood donation a more attractive option by highlighting the longer term benefits of donation.⁴² As France et al.⁴⁵ recently demonstrated, participants exposed to a brochure containing information about how to overcome common affective (e.g., anxiety) and physiological (e.g., vasovagal reactions) responses demonstrated improvements in attitude, anxiety, efficacy and intentions to donate blood. Given the positive correspondence between pre-donation anxiety and ratings of post-donation symptoms,^{46,47} reducing pre-

donation anxiety may also increase the likelihood that non-donors giving blood for the first time will return to give subsequent donations in the future.

In accordance with previous research with donors^{13,15,17} and specifically with non-donors,¹⁵ anticipated regret improved the predictive utility of the TPB model and emerged with the second largest beta weight for the prediction of non-donors' intentions to donate blood. In essence, those non-donors who wanted to avoid the negative emotional consequence of regret at failing to donate blood formed stronger intentions to donate blood in the future. Consequently, future promotional campaigns should emphasise the negative emotions one may feel at the prospect of failing to donate blood in the future (e.g., disappointment and regret).¹⁵

Moral Norm and Descriptive Norm

The current study also examined the role of moral norm and descriptive norm in predicting non-donors' intentions to donate blood. As hypothesised, moral norm emerged as a direct predictor of intentions and demonstrated the largest beta weight of all the predictors. The emergence of moral norm as a significant and direct predictor of non-donors' intentions is consistent with the findings of Lemmens et al.⁹ but is in contrast to Godin et al.'s¹⁵ finding of a non-significant contribution of moral norm to non-donors' intentions. In addition, this result is contrary to the suggestions by other researchers that moral norm may be more important for donor behaviour maintenance rather than the initiation of donation behavior.^{13,15,17} This difference in findings may be due to the self-selected nature of participants who opted to take part in this study and should be confirmed by future research. Nevertheless, the important role of moral norm for non-donors' intentions in the current research suggests that future recruitment efforts targeted towards non-donors should focus on tapping into an individual's personal feelings of responsibility or moral obligation to donate blood.

Considering the inconsistent performance of subjective norm in previous research, the current study sought to incorporate descriptive norm as a proposed revision of the normative component (see ^{20,24,25}). Previous research has suggested that social networks may play an important role in the recruitment of new donors ³² and that knowing important others such as family and friends actually donate blood may increase non-donors' intentions to donate.^{33,34} The findings of the current study revealed a non-significant path for subjective norm on intention, but a significant path for descriptive norm on intention (albeit a modest effect given that descriptive norm had the smallest significant beta weight). This finding supports previous literature proposing a revision or extension of the normative component in the TPB (e.g.,^{24,25}), and suggests that for first time donors it may be useful to emphasize the role of the actual behavior of close referents such as friends, family, or work colleagues who are blood donors,³¹ rather than perceptions of pressure or approval from significant others for donating blood (i.e., subjective norm). Future donor recruitment campaigns should continue to focus on highlighting the actions of significant others with an emphasis on the potential donor's inaction as incongruent with that of the people important to them.³¹

Conclusions

Overall, the current study extends previous blood donation research and contributes to the limited number of theory based explorations of the motivations of non-donors both within Australia and internationally.^{1,5} In addition to the standard TPB predictors, a role for both affective and normative influences was revealed in the current study. Together, these findings provide strong support for the utility of an augmented TPB framework to predict intention to donate blood for the first time and may assist in informing the development of future interventions designed to

strengthen the blood donation intentions and behavior of non-donors. Findings in the current study, however, should be interpreted in light of the study's limitations including the self-selection of participants into the study, the small sample size, the over-representation of females and median age range of the sample, and the lack of a prospective measure of blood donation behavior. Future studies, then, should continue to investigate the impact of both normative and affective influences on the blood donation decision-making process and extend the model identified in the current research to include an examination of the impact of the proposed predictors on actual blood donation behavior in a broader sample of participants. The adoption of a longitudinal perspective would be beneficial also to investigate how the motivations of non-donors evolve over time and whether they do or do not become blood donors in the future.

One additional limitation that should be noted relates to the two-item measure of donation anxiety. Although anxiety or distress about donation is an important consideration for both non-donors and donors alike,^{35,36} the donation anxiety items used in the present study did not incorporate an assessment of the physiological reactions (e.g., dizziness, nausea) that may be experienced when donating blood.²⁹ These physiological reactions have been demonstrated as an important factor in the decision to donate blood initially and to return for subsequent donations.^{46,48} Future research, then, should include an assessment of potential physiological reactions as well as donation anxiety. This may be achieved by using a broad range of items derived from the Blood Donation Reactions Inventory,^{16,29} which is a well established and validated scale of physiological reactions to donating. This approach would serve to further clarify the impact of affective influences on the decision to donate blood for the first time.

In the face of a simultaneous incline in the need for blood and blood products and decline in the proportion of volunteers in the community willing and able to donate blood, donor recruitment remains a key issue for Australia.² Thus, establishing the factors that influence non-donors to engage in blood donation for the first time is critical for the development of a reliable blood supply. The current research suggests that the decision-making process of new donors is influenced by a range of personal and social forces and that recruitment efforts targeted towards people who have not donated previously may benefit by adopting a TPB based perspective which incorporates additional normative and affective influences.

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Table 1.

Descriptive Data and Zero Order Correlations among Constructs for the Standard and Extended Theory of Planned Behavior Variables (N = 195)

	1	2	3	4	5	6	7	8
1. Attitude	-							
2. Subjective norm	.54**	-						
3. Perceived behavioural control	.08	.13	-					
4. Descriptive norm	.20**	.38**	.02	-				
5. Moral norm	.58**	.73**	.01	.34**	-			
6. Anticipated Regret	.57**	.62**	.01	.33**	.72**	-		
7. Donation anxiety	-.48**	-.31**	.04	-.13**	-.37**	-.40**	-	
8. Intention	.68**	.61**	.19**	.36**	.72**	.73**	-.52**	-
<i>M</i>	5.03	4.83	5.79	3.72	4.55	4.09	3.59	3.84
<i>SD</i>	1.22	1.41	1.67	1.25	1.57	1.85	1.86	1.71

** $p < .01$

Table 2.

Goodness-of-fit Test Result for Each Model

Model	χ^2 (d.f.)*	CFI†	RMSEA‡	NFI§	AIC††
Standard TPB Model	97.14 (4)	0.86	0.21	.85	158.27
Proposed Model	11.13 (7)	0.99	0.06	.99	69.13
Revised Model	5.472 (6)	1.00	0.00	.99	49.47

* A non-significant chi-square is desirable; † CFI = comparative fit index, with a range of 0.00-1.00. > .95 is acceptable; ‡ RMSEA = root mean square error of approximation. Lower limit is 0.00 and < 0.06 is acceptable; § NFI = Bentler Bonett normed fit index, with a range of 0.00-1.00, >.90 is acceptable; †† AIC = Akaike Information Criterion (AIC), a lower AIC level indicates a more parsimonious model fit.

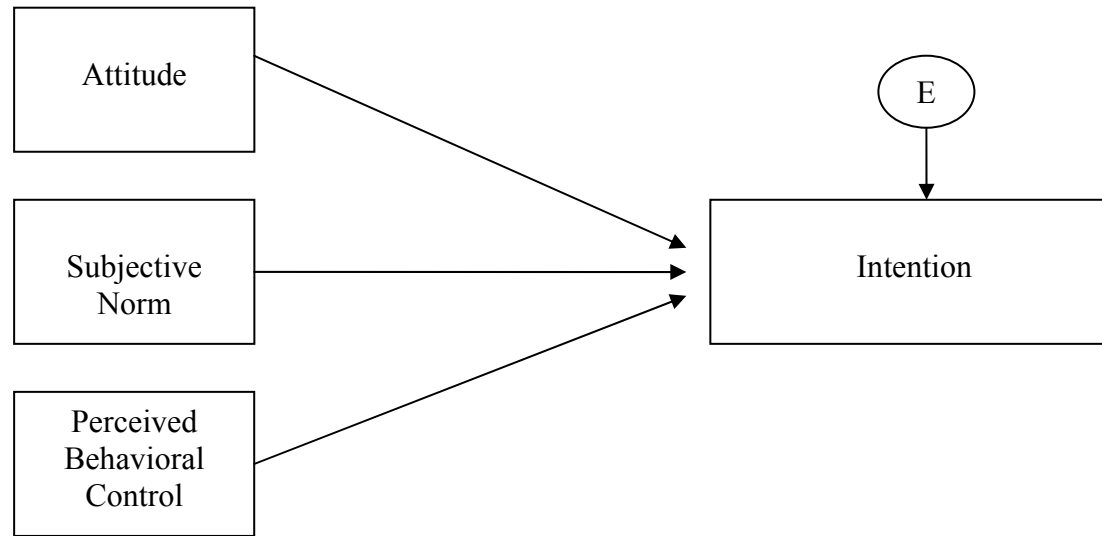


Figure 1. Standard Theory of Planned Behavior Model

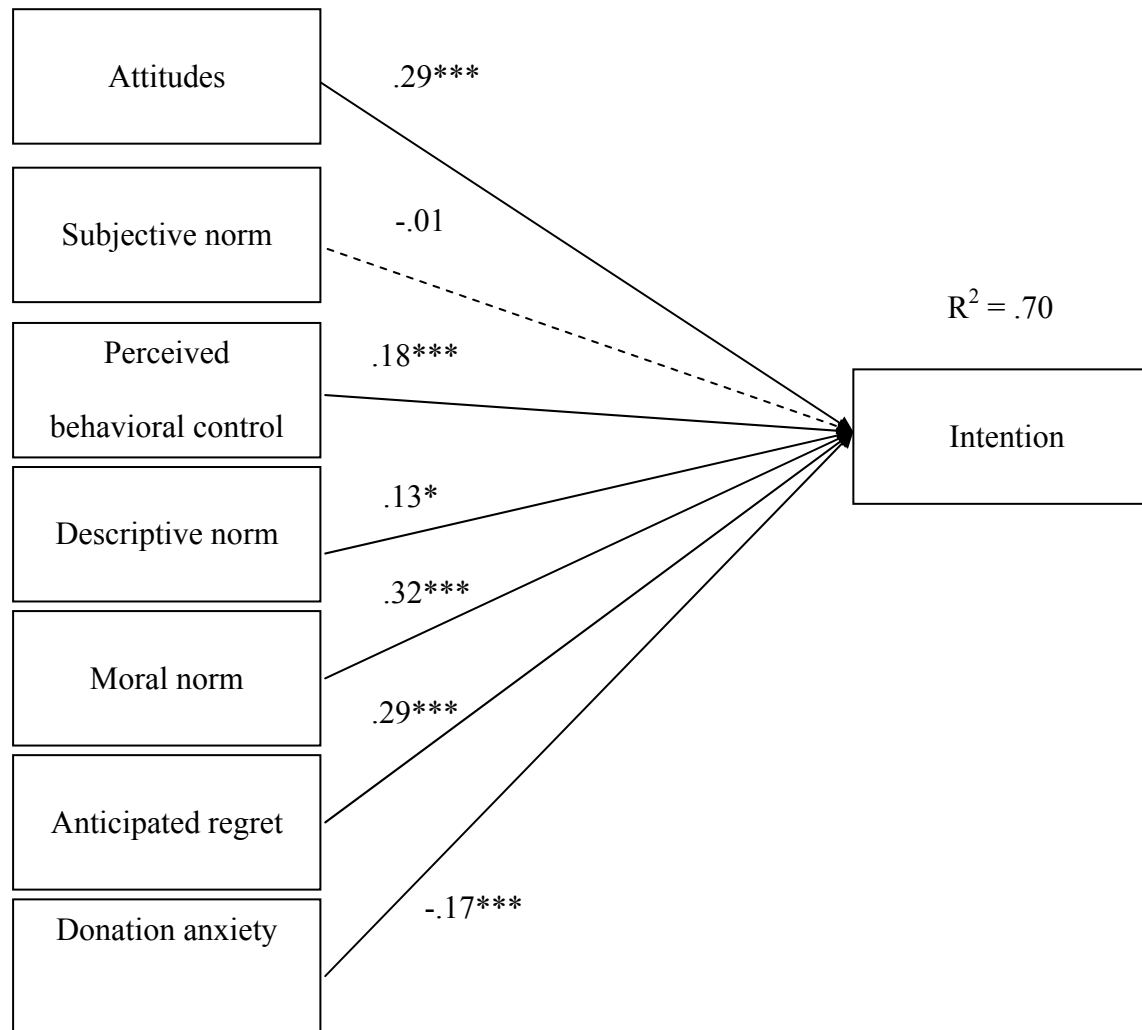


Figure 2. Theory of planned behavior model extended to include descriptive norm, moral norm, anticipated regret and donation anxiety (Proposed Model). * $p < .05$. * $p < .001$.**

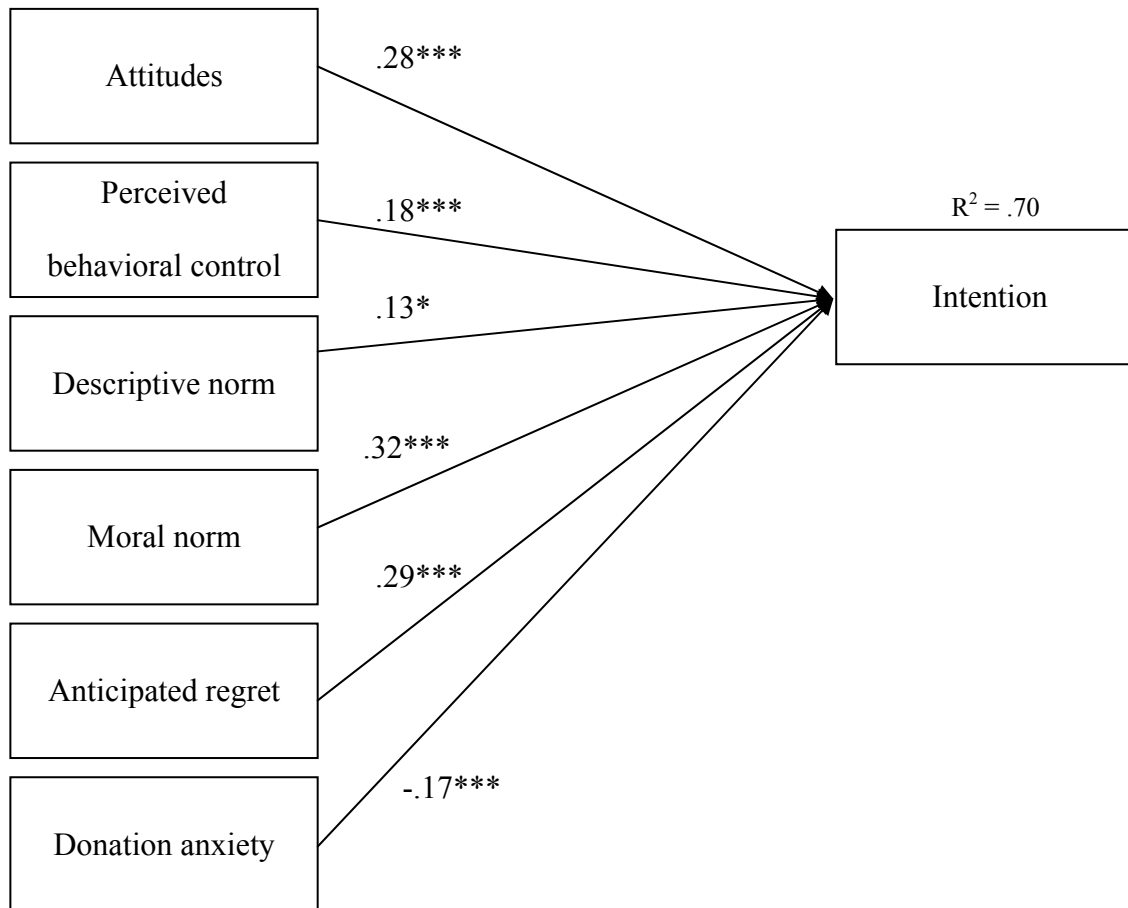


Figure 3. Theory of planned behavior model extended to include descriptive norm, moral norm, anticipated regret and donation anxiety (Revised Model). * $p < .05$. * $p < .001$.**