A Test of the Intention-Behaviour Relationship

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Abstract

According to Ajzen's theory of planned behaviour, a person's intention to perform, or not perform, a behaviour is viewed as the immediate determinant of the action. The study reported here considered the predictive ability of Ajzen's model, comparing behavioural intention measures and actual behaviour measures, in the context of predicting blood donation behaviour. The findings indicated that behavioural intention to donate blood was a poor predictor of actual behaviour. Moreover, the reliability of behavioural intention measures to predict corresponding behaviour decreased as the time interval between stated intentions and the behaviour increased.

Introduction

Self-reported intention measures have been widely used in academic and commercial research because they represent easy-to-collect proxies of behaviour (Chandon, Morwitz and Reinartz, 2005). Research in the area of blood donation is no exception; findings often report the use of behavioural intention as a surrogate measure of actual behaviour (Sarason, Sarason, Pierce, Shearin and Sayers 1991; Giles and Cairns, 1995; Reid and Wood, 2002). In fact, Barkworth, Hibbert, Horne and Tagg (2002) note a criticism of previous blood donation research is researchers' reliance on measures of intention to predict behaviour, as very few studies have used actual donation as an outcome measure. They caution the problem with such studies is that although intention is correlated with behaviour it is not the same as actual donation behaviour.

Many previous blood donation studies are based on a conceptual framework developed by Ajzen and Fishbein, within which it is assumed that a behavioural intention is the immediate determinant of the corresponding overt behaviour. Ajzen's (1985) theory of planned behaviour (TPB) (see Figure 1), which is an extension of Fishbein's 1963 expectancy-value model, is one of the most widely applied behavioural prediction theories for a range of behaviours, including blood donation (see, for instance, Sheppard, Hartwick, Warshaw, 1988; Ajzen, 1991; Madden, Ellen and Ajzen, 1992; Eagly and Chaiken, 1993; Godin and Kok, 1996; Conner and Armitage, 1998; Sheeran and Orbell, 1999).

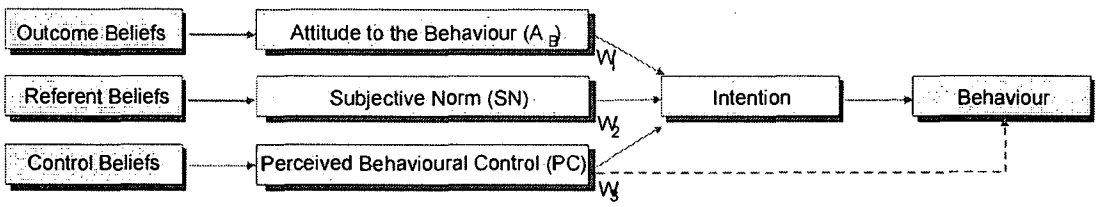


Figure 1 Model of the Theory of Planned Behaviour

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Ajzen (1985) contends that, as a general rule, the more favourable the attitude toward the behaviour and the stronger the subjective norm (the internalised influence of people who are important to a respondent) with respect to a behaviour, and the greater the perceived behavioural control (a person's self-perceived ability to take some action if he or she wants to take that action), the stronger an individual's intention to perform the behaviour under consideration will be. Intentions are assumed to capture the motivational factors that have an impact on behaviour. Assuming the behaviour is under volitional control, people can be expected to do what they intend to do. Expressions of behavioural intention should thus permit a highly accurate prediction of corresponding volitional action (Ajzen, 1988). Hence, a strong assumption of behaviour research is that intention is the immediate antecedent to actual behaviour.

Whilst Ajzen and Fishbein's conceptual framework is credited with advancing the accuracy of behavioural predictions, Foxall (1986, 1997) draws attention to an important weakness with their approach. He cautions researchers to appreciate that whilst behavioural intentions are often used to predict behaviour, accurate prediction of behaviour is possible only within relatively short time intervals. He also notes that the limitations of their approach are made explicit by Ajzen and Fishbein themselves, in terms of the specific circumstances in which their models will predict; however, researchers by and large appear to have overlooked these caveats.

Fishbein and Ajzen (1975) explain that the intervening timeframe between the stated intentions and the actual time of the act can disrupt the intention-behavioural relationship. Since it is often impossible or impractical to measure a person's intention immediately prior to performance of the behaviour, the measure of intention obtained at one time may not be representative of the person's intention at the time of the behavioural observation (East, 1990). This is due to the fact that behavioural intentions are affected by many situational factors that may intervene and disrupt the attitude-behaviour relationship. In turn this leads to a situation where behavioural intentions do not correspond well with actual behaviour. For example, Fishbein and Ajzen (1975) explain that if a person states an intention to buy a car in three months time, any change in his or her financial position, the price of the car, or the availability or price of petrol may influence that stated intention. Put simply, in the intervening time between stating their intentions and the time of the action, people may change their intentions in response to new information or a change in personal circumstances. Interestingly, Sutton (1998) suggests, all things being equal, longer time intervals allow more opportunities for a behaviour to be performed, and would thus tend to increase the intention-behaviour correlation, rather than reduce it. However, this view is not widely supported by empirical evidence.

Two meta-analyses, involving samples of 87 and 98 studies, respectively found average correlations of .53 and .45 between intention and action across a wide range of behaviours (Sheppard, *et al.*, 1988; Randall and Wolff, 1994). This review suggests relatively low correspondence occurs between measures of behavioural intention and subsequent behaviour. Thus, researchers should demonstrate a greater willingness to question the intention-behaviour assumption than has been evident in published findings to date.

The aim of this study was to investigate the extent to which measures of respondents' behavioural intention to donate blood correspond with their actual (self-reported) blood donation behaviour, by applying Ajzen's (1985) theory of planned behaviour methodology.

Questionnaire Design and Methodology

The study was conducted in two stages. First, a pilot study involving 100 respondents was undertaken for the purpose of testing the research methodology. The pilot study was followed by a major study in which data were collected from a sample of 1262 students and staff from four New Zealand university campuses at which regular blood collections are made. The theory of planned behaviour questionnaire was designed according to conceptual and methodological considerations specified by Ajzen (http://www.people.umass.edu/aizen/tpb.html).

To assess willingness to donate blood, respondents were asked to state their intention to donate blood when the New Zealand Blood Service's (NZBS) mobile drive visited their campus. Interviewing for the pilot study took place one week prior to the NZBS's visit. This timeframe mirrored the methodology reported in an earlier blood donation study by Giles and Cairns (1995). However, a framework that is limited to short range predictions is, arguably, of marginal practical value (Ryan and Bonfield, 1980; Liska, 1984; Randall and Wolff, 1994). For this reason, for the major study, the time interval between obtaining stated intentions and reported donation behaviour was extended from one week to four weeks. This allowed for the predictive ability of the TPB to be tested using a timeframe with greater practical value for the purpose of decision-making. Following the mobile drive, respondents who had provided contact details were asked whether they had donated blood, or attempted to donate blood, when the NZBS had visited the campus. This gave a sample size of 1008 for analysing actual (self-reported) behaviour.

A limitation of this study was that self-reports of blood donation behaviour were obtained, rather than actual blood donation behaviour. Cooperation with the New Zealand Blood Service (NZBS) was sought for the purpose of matching respondents' intentions to donate blood with their actual donation behaviour, however, due to ethical concerns this was not achieved. Instead, after obtaining respondents' stated intentions to donate blood, respondents were contacted directly to obtain their reported donation behaviour. It is not possible to quantify the potential sensitising effect on behaviour the request for contact details and the subsequent follow up contact with those willing to participate in the survey may have had. However, anecdotal evidence from this study suggests that respondents were truthful in their responses. Many non-donors volunteered information regarding their failure to donate. This was particularly apparent with those who had indicated a strong likelihood of donating blood and then wanted to explain the reason for their failure to act, even though this information was not directly sought. Moreover, in a similar study, Pomazal and Jaccard (1976) obtained intentions to donate blood, and one week after a blood drive contacted all respondents by phone to ask if they had donated blood. They then compared self-reports of behaviour with a list of persons who had donated blood, compiled by the blood collection agency officials. Pomazal and Jaccard reported no discrepancy at all between self-reports of behaviour and actual behaviour. Their finding offers support for the methodology used in this study.

Results and Discussion

The ability of Ajzen's (1985) theory of planned behaviour to predict both behavioural intention to donate and actual (self-reported) blood donation behaviour was investigated using OLS regression, and logistic regression, respectively. The correlation between the two

dependent variables, intention and behaviour, was r = .32. Though this correlation is significant ($p < .01$), it is not a strong relationship.

For behavioural intention, the variance explained by the TPB variables, estimated by the adjusted R^2, was 52%. The finding that the variables explained approximately 50% of the variance in intention to donate blood is consistent with previous TPB studies suggesting that the model can account for 40% to 50% of the variance in intentions (Godin and Kok, 1996; Sutton, 1998). Moreover, two recent blood donation studies by Giles and Cairns (1995) and Armitage and Conner (2001), using similar methodology, report similar findings.

For reported behaviour variance in behaviour explained by the TPB variables, estimated by Nagelkerke R^2, was 19%. Although the Nagelkerke R^2 value does not represent explained variance in the same way as R^2 in least squares regression, it does provide a model fit measure that is analogous to the R^2 value calculated from least squares regression (Pampel, 2000). Hence, the pseudo R^2 measure of explained variance in self-reported behaviour was lower than the corresponding adjusted R^2 measure of variance in behavioural intention, but within the range of 19% to 38% reported in previous studies (Godin and Kok, 1996; Sutton, 1998). This suggests that little correspondence existed between respondents' stated intentions to donate blood and their actual (self-reported) donation behaviour. This finding is important, especially given the widely accepted assumption that the closest prediction of behaviour is provided by measures of behavioural intention (East, 1997).

There has been no comparable TPB study in which actual donation behaviour was used as the dependent variable. A measure of respondents' self-reported blood donation behaviour was obtained by Giles, McClenahan, Cairns and Mallet (2004), during a recent study using an extended version of the TPB. Approximately one week prior to a university campus visit by the Blood Transfusion Service (BTS), Giles *et al.* obtained intentions to donate blood from a sample of 100 students. Follow up contact the week following the BTS visit was achieved with 52 respondents, of whom six reported that they had donated blood. However, no attempt was made by Giles *et al.* to compare actual and predicted behaviour (because their sample of donors was so small). Another blood donation study by Armitage and Conner (2001), also using an extended version of the TPB, reported an R^2 value of .54 for predictions of blood donation behaviour, which is higher than the .19 value obtained for this study. However, their study, based on a sample size of 89, used a pseudo measure of behaviour. Armitage and Conner obtained behavioural intentions and two weeks later respondents were contacted and presented with a scenario relating to an opportunity to donate blood, which was designed to provide an indication of 'behavioural enaction'. However, it cannot be assumed that respondents' responses to a blood donation scenario would necessarily mirror their actual blood donation behaviour.

Another important finding of this study is that the predictive ability of the TPB was affected by the time interval between stated intentions and performance of the behaviour. For the two research stages of this study, the time interval between stated intentions to donate blood and self-reported donation behaviour was one week for the pilot study and four weeks for the major study. Table 1 presents R^2 values for the two research stages of this study, comparing behavioural intention and actual (self-reported) behaviour measures.

Table 1 R^2 Values for the two Research Stages

Behavioural Intention		Behaviour	
Pilot Study	Major Study	Pilot Study	Major Study
.50	.52	.36	.19

An earlier blood donation study by Ferguson (1996) found that the predictive power of behavioural intentions reduced as the time interval between measurement and the recording of actual blood donor behaviour increased. For this study, the variance in behavioural intention explained by the TPB variables for both the pilot study and the major study was similar, as estimated by adjusted R^2 = .50 for the pilot study compared with adjusted R^2 = .52 for the major study.

However, the ability of the TPB to predict reported behaviour weakened as the time interval between measures increased. That is, the Nagelkerke R^2 value was lower for the major study (R^2 = .19), based on a four-week time interval between measures, than the corresponding value for the pilot study based on a shorter, one-week time interval (R^2 = .36). This observation is important as it indicates that findings that are derived from studies in which a short timeframe was used to test the predictive ability of a model are of questionable practical relevance.

Conclusion

Ajzen's TPB is widely used and is based on the assumption that behavioural intention, the 'output' of the model, is a good predictor of actual behaviour. However, this study found that little correspondence existed between respondents' stated intentions to donate blood and their self-reported donation behaviour. The measure of explained variance in actual (self-reported) behaviour was lower than the corresponding measure of variance in behavioural intention. This finding suggests that the basic premise upon which many research findings are based, namely that behavioural intention provides a highly accurate prediction of behaviour, is debatable. Researchers using the TPB model to predict behaviour are therefore advised to be cautious when estimating expected performance on the basis of measures of behavioural intention.

Another important finding of this study is that the predictive ability of the TPB was affected by the time interval between stated intentions and performance of the behaviour. The ability of the model to predict behaviour decreases as the time period of the prediction increases. This finding serves as a further caution to researchers not to assume that the predictive ability of the model extends beyond the timeframe tested.

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