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Douglas Adam  
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**AN INVESTIGATION OF A THEORETICAL MODEL OF WILLINGNESS TO  
DONATE BLOOD**

**By**

**DOUGLAS ADAM**

**B.Comm. (Honours) Curtin University of Technology**

**A Thesis presented in partial fulfillment of the requirements for the award of:**

**Master of Business (Marketing)**

**at the Faculty of Business, Edith Cowan University.**

**Date of Submission: May 21st, 1997**

### **Abstract**

The Australian Red Cross Blood Transfusion Service (ARCBTS) in Western Australian faces a major problem with periodic shortages of blood components. These shortages are expected to become more frequent and severe as demand continues to increase at a faster rate than supply. Given that only five percent of the population is registered as blood donors, clearly, the challenge for the ARCBTS is to encourage more people to become regular blood donors. The current study was undertaken to assist the ARCBTS in achieving this goal, by identifying and investigating the factors that influence people's willingness to donate blood.

Based on the findings of a literature review and focus groups, a conceptual model of "willingness to donate blood" was developed. The model included personal values, knowledge about blood donation, perceived risks associated with donating blood, and attitudes towards blood donation, as antecedents to willingness to donate.

The data were collected from a sample of 2000 households in the Perth metropolitan area of Western Australia. This sample was randomly selected using Oz on Disk, a CD-ROM version of the White Pages telephone directory. A self-administered, structured questionnaire was used, which was sent to each household in the sample, together with a reply paid envelope for the return of completed questionnaires. A total of 516 completed questionnaires were returned, of which 513 were useable, resulting in a response rate of 27%.

The model was assessed using the "AMOS" software package. This was selected because of its ability to simultaneously estimate multiple interrelated dependence relationships and its capacity to accommodate unobserved variables with multiple indicators. A two stage procedure was used where the first stage assessed the component of the model relating to the fit of the observed variables to the latent variables (measurement model) and the second assessed the component of the model that relates to the structural relationships between the latent variables (structural model).

The results suggested that willingness to donate blood declined as the perceived health risk associated with blood donation increased. The perceived risk of reaction influenced willingness to donate indirectly through its effect on attitudes regarding psychological fears associated with donating blood. As the perceived reaction risk increased, attitudes became less favourable, leading to a reduction in willingness to donate. Knowledge had a negative influence over both types of perceived risk, meaning that levels of perceived risk declined as knowledge about blood donation increased. Further, knowledge also had a direct positive influence over willingness to donate, meaning that willingness to donate increased as knowledge increased. Values played an important role in the development of attitudes towards blood donation as a duty or responsibility to replace used blood and assure future supplies. More specifically, as the values relating to self-fulfillment, being well-respected, self-respect, and a sense of

accomplishment became more important, these attitudes became more favourable, leading to an increase in willingness to donate.

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
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- (iii) contain any defamatory material.

Signed:

Douglas Adam



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## **Chapter One**

### **Introduction**

#### **1.1 Problem Definition**

The Australian Red Cross Blood Transfusion Service (ARCBTS) in Western Australia faces a major problem in coping with the demand for blood components. Currently less than five percent of the State's population is registered as blood donors (Australian Red Cross, 1993), a situation that leads to shortages of various blood components. While these periodic shortages are a serious problem, the situation is expected to worsen for a number of reasons.

Firstly, the demand for blood components is rising steadily, fueled by population growth; the aging of the population; and an increase in the number of surgical procedures being performed (Pyndick et al, 1987; Australian Red Cross Blood Transfusion Service, 1992). Secondly, the current and often inadequate supply of blood components is under threat. By far the most significant of these threats has been the advent of HIV and AIDS (Lobello, 1990; Oswalt and Gordon, 1993). This threat is significant because it affects supply in a number of different ways, namely:

- (1) As health authorities have battled to contain the spread of the disease, a number of potential donors have been excluded from the donor pool because they are considered to be "high risk:" (Pillaiavin, 1990), and

(2) Concerns over donor safety during the donation process have led some blood donors to stop providing donations, and have made it difficult to recruit new donors (Lipsitz et al, 1989).

It can be seen that, while demand for blood components is rising, supply is under threat. These trends in a situation in which current demand sometimes exceeds available supplies suggest blood shortages will become more common in the future, unless something is done to restore the balance between demand and supply.

While these facts paint a bleak picture, the situation is far from hopeless. On the positive side, the fact that less than five percent of the population are donors means that there is a large untapped market of suitable potential donors. The challenge facing the ARCBTS is to find ways to encourage more non-donors to become donors.

## **1.2 Purpose and Significance of the Study**

The purpose of the present study was to develop and empirically examine a conceptual model of people's willingness to donate blood, using data collected from a random sample of the population of the Perth metropolitan area in Western Australia.



The results of the study should provide authorities with an understanding of the factors that influence willingness to donate blood, as well as of the nature of the relationships between these variables.

In addition to these general benefits, which will be of value to all blood collection agencies, the study should provide local authorities with specific information about the characteristics of the local population. This information should enable authorities to develop more effective marketing strategies, aimed at increasing the number of blood donors.

### **1.3 Specific Research Objectives**

The research objectives for the present study were to:

1. Identify those factors that have a significant impact on willingness to donate.
2. Develop and empirically examine a conceptual model, incorporating these factors.

These objectives were accomplished by initially reviewing the existing literature (outlined in Chapter 2) and undertaking focus groups to develop a better understanding of the relevant issues (outlined in Appendix A). Based on the literature review and the focus groups, a conceptual model of "willingness to donate blood" was developed. This model is outlined in Chapter 3, together with the specific hypotheses that were tested in the present study. The methodology used to test the model is outlined in

Chapter 4, while Chapter 5 presents the results of the preliminary data analysis.. Chapter 6 discusses the estimation of the model while Chapter 7 outlines the conclusions, limitations and implications of the study.

## **Chapter Two**

### **Literature Review**

#### **2.1 Blood Donation Behaviour**

A major assumption of many of the models that have been developed to explain behaviour is that people's decision making has a strong cognitive base. More specifically, these models assume the process is initiated through the acquisition and evaluation of information that leads to the formation of attitudes that, in turn, lead to the development of behavioural intentions and behaviour (Bagozzi, 1981). The process is commonly termed the learning hierarchy model of decision making and is considered to be appropriate for decisions that are important to the decision maker and that are made where there are few time or external pressures (Zajonc, 1980; Horton, 1984). As researchers have found empirical support for such models of behaviour for blood donation (e.g. Bagozzi, 1981; Allen and Butler, 1993) and the related decision to sign an organ donor card (Horton and Horton, 1991), the learning hierarchy model was the underlying basis for the current study.

The remaining sections of this chapter discuss the constructs in the model, beginning with the dependent variable of willingness to donate blood, followed by its antecedents, namely knowledge; values; perceived risk and attitudes.

## **2.2 Willingness to Donate**

### **2.2.1. The Importance of Willingness to Donate**

The significance of behavioural intentions can be seen in Fishbein and Ajzen's (1975) theory of reasoned action, in which they suggested intentions were the best predictors of behaviour. Triandis (1977) took a similar view in his theory of behavioural prediction, in which he argued that behaviour could best be predicted by intentions and past behaviour. Fishbein and Ajzen's (1975) theory of reasoned action has been the most frequently used model in subsequent research into behavioural prediction and has proven to be successful. For example, a meta-analytic review of 85 studies using the model found a mean correlation of 0.67 between intentions and behaviour (Sheppard et al, 1988). More specifically, intentions have been found to be significantly correlated with behaviours in a range of domains, including family planning (Davidson and Jaccard, 1979); adolescent alcohol use (Schlegel, Crawford and Sanborn, 1977); and voting on a nuclear power plant initiative (Bowman and Fishbein, 1978). Further, studies have found that intentions have a causal influence over behaviours such as blood donation (Bagozzi, 1981; Giles and Cairns, 1995) and the signing of an organ donor card (Horton and Horton, 1991). Clearly, there is evidence supporting the usefulness of intentions as predictors of behaviour.

### **2.2.2 The Measurement of Willingness to Donate**

While behavioural intentions have been measured in many different ways, the approaches can be classified under one of two broad headings. One involves asking people about their intentions or plans to engage in a given

behaviour (Bagozzi, 1981; Burnkrant and Page, 1982; Allen and Butler, 1993; Andaleeb and Basu, 1995; Giles and Cairns, 1995) while the other asks people about their estimated probability of engaging in a given behaviour (Juster, 1966; Bonfield, 1974; Bagozzi, 1981; Sweeney, 1995).

Estimated behaviour probabilities seem to provide a more reliable predictor of subsequent behaviour than statements about intentions or plans. Indeed, Juster (1966) suggested that a major failing of intention or plan questions was that they classified many respondents as non-intenders when their behaviour probability was greater than zero. He suggested the main reason for this was that, while stated intentions were a reflection of the a person's estimated behaviour probability, people would only classify themselves as intenders if their behaviour probability was high enough to make a "yes" response more accurate than a "no" response. In other words, while the non-intenders group included respondents with no probability of engaging in a given behaviour, it also included those who felt their behaviour probability was too low or too uncertain to justify a "yes" response, even though it was greater than zero. In his study, which compared the predictability of both methods, Juster (1966) found this was the case and that questions about behaviour probability were able to overcome this problem.

Given these findings, the current study used probability statements to measure respondents' willingness to donate blood. The question relating to this construct used both adjectives and specific probabilities to describe

each response category in an effort to reduce the risk that respondents may be unclear as to the precise meaning of each of these categories.

## **2.3 Antecedents to People's Willingness to Donate Blood**

### **2.3.1 Knowledge**

#### **2.3.1.1 Knowledge Defined**

While there is no generally accepted definition of knowledge (Alba and Hutchinson, 1987; Allen and Butler, 1993), most researchers view knowledge in essentially the same way. Brucks (1985) proposed that knowledge can be classified and measured by its content, and a review of the literature showed that attempts to classify knowledge content have produced surprisingly similar results. An early study developed a typology of knowledge content with three broad dimensions, namely knowledge of specifics; knowledge of ways and means of dealing with specifics; and knowledge of universals and abstractions in a field (Bloom et al, 1956). Anderson (1976) proposed that knowledge has two broad dimensions; declarative knowledge (knowledge about concepts, objects , or events) and procedural knowledge (knowledge of rules for taking action). Similarly Alba and Hutchinson (1987) identified two dimensions, which they called familiarity and expertise, where the first relates to knowledge about the object and the latter to knowledge regarding beliefs about object attributes and decision rules for acting on those beliefs. In addition, Brucks (1985) developed and empirically examined a typology of knowledge content that had three dimensions, namely knowledge about the object; knowledge regarding the object's terminology; and knowledge of procedures.

It can be argued that knowledge content consists of knowledge about specific facts in the domain, as well as knowledge about procedural facts that help to make decisions or take action.

### **2.3.1.2 The Importance of Knowledge**

There have been many studies of knowledge and its effect on the way people make decisions and behave. It seems that an individual's level of knowledge can affect behaviour by influencing the way people respond to certain stimuli, as well as how they search for and interpret new information (Bettman, 1979; Alba, 1983; Johnson and Russo, 1984).

Several recent studies that are particularly relevant for the current research have examined knowledge and its relationship to behaviour in the related areas of blood donation and organ donation. One such study found a strong positive correlation between knowledge about blood donation and donation behaviour (Chliaoutakis et al, 1994). Another assessed the effect of knowledge on intentions to donate blood using causal path analysis and found that knowledge played an important role in the development of intentions to donate blood, but only through the mediating variable of perceived risk (Allen and Butler, 1993).

In a related study of organ donation behaviour, Horton and Horton (1991) investigated a causal model of the decision to sign an organ donor card. They found that knowledge played an important role in that decision, both

directly and indirectly through its influence on attitudes, which subsequently led to the development of intentions, leading to the signing of the card.

It should also be noted that a large number of studies have identified significant deficiencies in public knowledge about blood donation issues. Most of these studies were conducted as a direct consequence of the advent of HIV, and their main objective was to assess public knowledge about the virus. While these studies assessed knowledge levels in different countries, including New Zealand (Chetwynd, 1991); Ireland (Fogarty, 1990); America (Jones et al, 1989); and France (Dab et al, 1989), a common finding was that there were significant misconceptions among the public regarding blood donation and transfusion and the risk of contracting the virus.

Clearly, given the importance of knowledge to behaviour, coupled with the fact that there are deficiencies in knowledge about important aspects of blood donation, it can be argued that any attempt to model the process leading to willingness to donate blood should include this construct.

#### **2.3.1.3 The Measurement of Knowledge**

It has been suggested that there is a conceptual distinction between objective and subjective knowledge and that each may affect behaviour in different ways (Brucks, 1985). Objective knowledge relates to what an individual knows, whereas subjective knowledge relates to a person's perception as to how much they know. The distinction between the two lies



in the fact that measures of subjective knowledge include an indication of a person's self-confidence in their knowledge and, as such, subjective knowledge may affect behaviour in a different way to objective knowledge (Park and Lessig, 1981; Brucks, 1985). It can be argued that it may be useful to measure both types of knowledge since this would highlight the size of the gap between what people think they know and what they actually know, as well as enabling the investigation of the relationship between the size of this gap and subsequent behaviour.

Objective knowledge is generally measured using structured questions with true, false and don't know response categories (Brucks, 1985; Horton and Horton, 1990; Allen and Butler, 1993; Chliaoutakis et al, 1994), while subjective knowledge is generally measured by asking the respondents to indicate their perceived level of knowledge using a Likert type scale (Brucks, 1985; Allen and Butler, 1993). The current study employed both subjective and objective knowledge measures, using a Likert type scale; and true, false, don't know type questions.

The results from focus groups and the literature review suggested that items measuring knowledge of procedural facts should address knowledge regarding who can donate; how often they can donate; where they can donate; time required to donate and so on, while those measuring knowledge of specific facts should address knowledge of such factors as collection and testing procedures; the need for various blood types; religious support for blood donation; and whether payment of blood donors

is permitted. Full details of the relevant literature used to develop the knowledge items are shown in Appendix B.

### **2.3.2 Values**

#### **2.3.2.1 Values Defined**

Values have also been defined in many different ways (e.g. Pepper, 1958; Williams, 1968; Baier, 1969;), such as:

(Values are) "a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available means and ends of action" (Kluckhohn, 1951, p.395).

(Values are) "the desirable end states which act as a guide to human endeavour or the most general statements of legitimate ends which guide social action" (Smelser, 1967, p.8).

(Values are) "a centrally held, enduring belief which guides actions and judgements across specific situations and beyond immediate goals to more ultimate end-states of existence" (Rokeach, 1968, p.161).

(Values are) "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p.5).

Despite these many definitions, Schwartz and Bilsky (1987) noted that there are common threads and that it is possible to identify five important

characteristics of values, namely that values are: (1) concepts or beliefs; (2) about desirable end-states or behaviours; (3) that transcend specific situations; (4) guide selection or evaluation of behaviour and events; and (5) are ordered by relative importance.

### **2.3.2.2 The Importance of Values**

Rokeach (1973, p.3) highlighted the importance of values to human behaviour, noting that "the consequences of human values will be manifested in virtually all phenomena that social scientists might consider worth investigating and understanding".

It should also be noted that, when Baier (1969) talked about the "consequences" of values, he argued values have a causal influence over behaviour. Indeed, he argued that values are determinants of attitudes and behaviour since they occupy a more central position than attitudes in a person's personality and cognitive system (Rokeach, 1973). Homer and Kahle (1988) seem to view values in the same way, describing values as the prototypes from which attitudes and behaviours are manufactured.

Empirical research has added support to the theoretical importance of values. A number of studies have found significant relationships between values, and attitudinal and behavioural outcomes for a range of domains, including cigarette smoking (Grube et. al, 1984), charity contributions (Manzer and Miller, 1978), religious activities (Rokeach, 1969; Feather,

1984), participation in civil rights activities (Rokeach, 1973) and attitudes toward the poor (Rokeach, 1973).

While most of these findings relate only to correlational relationships, the results of some recent studies provide empirical support for the notion of the causal role played by values. However, it should be noted that these studies found that values influence behaviour indirectly through attitudes. For example, Homer and Kahle (1988) found that the effects of values on shopping behaviour were mediated by attitudes regarding shopping, while Horton and Horton (1991) made similar comments about the relationships between attitudes towards organ donation and the signing of an organ donor card. Again, it seems vital that a model of blood donation includes a values construct.

### **2.3.2.3 The Measurement of Values**

A number of methods have been used to measure values, including rank ordering (Catton, 1954; Rokeach, 1973), asking respondents to choose the value or values that are most important to them (Kahle, 1983), paired comparison (Allport and Vernon, 1931; Reynolds and Jolly, 1980) and rating scales (Rankin and Grube, 1980; Horton and Horton, 1991).

One of the best known and most frequently used is the Rokeach Value Survey (RVS) (Rokeach, 1973). The instrument contains a list of 36 values made up of 18 terminal values and 18 instrumental values. Terminal values relate to desirable end-states of existence, such as a sense of

accomplishment or social recognition, while instrumental values relate to desirable modes of conduct, such as being courageous or logical, that are instrumental to the attainment of these end-states.

While the RVS has made a significant contribution to the study of values, there have been a number of criticisms leveled at the instrument. The most significant of these relate to the length of the instrument and, therefore, the time taken to complete it, as well as the questionable relevance of some items to people's everyday lives (Beatty et al, 1985).

A more recent measure is the List of Values (LOV), developed by Kahle (1983). This instrument is based on Rokeach's terminal values (Rokeach, 1973) and Maslow's (1954) hierarchy of needs, and is a list of nine values. It has been suggested that this instrument is superior to the RVS for a number of reasons. First, since it contains a smaller number of items, it is quicker and easier to administer (Kahle and Kennedy, 1988; Grunert et al, 1989). Second, it is argued that, despite the reduced size of the instrument, it captures most of the RVS constructs and contains values that are relevant to everyday life (Beatty et al, 1985; Homer and Kahle, 1988). In other words, the instrument is more parsimonious than the RVS, yet captures the essence of those values relevant to people in their day to day lives.

While both measures were initially developed to collect ordinal level data using rankings, it was argued that this limited their effectiveness by

restricting any subsequent analysis to those techniques suitable for this level of data (Rankin and Grube, 1980; Kahle and Kennedy, 1988). Researchers have overcome this problem by modifying the instruments to enable the collection of interval level data by using rating scales (Munson and McIntyre, 1979; Miethe, 1985), thereby increasing the range of possible statistical techniques that can be used, including causal path analysis (Homer and Kahle, 1988; Horton and Horton, 1991).

In an effort to limit the survey to a reasonable length and to make the task of completion as easy as possible, the current study used the LOV instrument, primarily as it was shorter. Further, since causal path analysis was to be used, Likert type rating scales were used in its measurement.

### **2.3.3 Perceived Risk**

#### **2.3.3.1 Perceived Risk Defined**

The concept of perceived risk was first introduced into marketing by Bauer, who suggested that "consumer behaviour involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant" (Bauer, 1960: p.24). Bauer (1960) conceptualised perceived risk in terms of uncertainty and adverse consequences. Kogan and Wallach (1964) agreed, suggesting that perceived risk possesses two facets, where one relates to a "chance" aspect where the focus is on probability; and the other to a "danger" aspect, where the emphasis is on severity of negative consequences. The

widespread acceptance of this two dimensional view of risk is evidenced by the fact that it has been adopted in most subsequent research involving perceived risk (e.g. Ross, 1975; Dowling, 1986). It should also be noted that perceived risk is not the real or actual risk inherent in a given transaction or behaviour, but rather it is subjective, relating to an individual's perceptions of this risk (Cunningham, 1967; Ross, 1975; McClain, 1983).

While this provides a general definition of perceived risk, it does not provide information about the specific content of the construct. It seems there is more than one type of risk. Cunningham (1967) proposed that the consequences aspect of perceived risk was multidimensional, consisting of performance and psychosocial risks. Since then, a number of different types of risk have been identified and investigated, including social risk, financial risk, risk of physical danger, risk of loss of time, psychological risk, performance risk and ego risk (Cunningham, 1967; Perry and Hamm, 1969; Roselius, 1971; Jacoby and Kaplan, 1972; Yavas et al, 1993). Cunningham (1967) also suggested that perceived risk is situation-specific and there is support for this notion as specific types of risk have varied across a range of different domains, including information acquisition (Lutz and Reilly, 1973), product purchase (Kaplan et al, 1974), choice of childbirth service (McClain, 1983), money donation behaviour (Yavas et al, 1993) and blood donation behaviour (Allen and Butler, 1993).

### **2.3.3.2 The Importance of Perceived Risk**

In his review of perceived risk, Ross (1975) noted that there had been growing support for the hypothesis that the level of perceived risk inherent in a given transaction is inversely related to the likelihood of engaging in that transaction. For example, Arndt (1967) found that those who perceived high levels of risk were less likely than low risk perceivers to adopt a new brand of coffee, while Cunningham (1967) found similar results for the adoption of headache remedies and fabric softeners. Given these results, together with Bauer's (1960) suggestion that individuals would typically try to reduce the level of perceived risk of a given transaction, a great deal of subsequent research focused on risk reduction strategies. More specifically, researchers have investigated the relationships between specific types of risk and specific risk relievers. For example, Roselius (1971) investigated the relationships between time risk, ego risk, hazard risk and money risk and eleven types of risk relievers, including word-of-mouth, brand loyalty and endorsements. Similarly, Lutz and Reilly (1973) investigated the relationships between social and performance risk and information acquisition. A recent study investigating perceived risk and intended risk-handling activity demonstrates the continuing interest in this area (Dowling and Staelin, 1994).

While this research is of value, as it works towards providing a better understanding of the methods used by consumers to reduce perceived risk, it does not address questions about the specific role played by perceived risk in the decision to engage in a given transaction. Recent studies,



however, have begun to consider this question, by including perceived risk as an explanatory variable in empirical research on consumer behaviour. For example, Srinivasan and Ratchford (1991) included perceived risk in a causal model of the external search for automobiles, while Allen and Butler (1993) included it in a model of people's intentions to donate blood.

A significant finding of this recent research has been that perceived risk mediates the relationship between the level of knowledge, and both intentions and behaviour (Butler, 1990; Srinivasan and Ratchford, 1991; Allen and Butler, 1993). It is also interesting to note that, contrary to what might be expected, Allen and Butler (1993) found a positive relationship between the two constructs. More specifically, it has been argued that individuals may seek information as a means of reducing the level of perceived risk in a given transaction, and as such, an inverse relationship between knowledge and perceived risk would be expected (Capon and Burke, 1980; Schaninger and Sciglimpaglia, 1981). As mentioned, this was not found to be the case in Allen and Butler's (1993) study of blood donation and they suggested some possible explanations. First, as individuals learn more about blood donation, they may also learn more about the potential risks associated with donation. Second, it may be that the decision making process is different for blood donation than for "less risky" products and services. Clearly, there is a need for further research to replicate the finding and, should this occur, to better identify and explain the reasons for this outcome. Perceived risk has an important role to play in consumer

behaviour in general and in blood donation in particular and needs to be included in the model being developed.

### **2.3.3.3 The Measurement of Perceived Risk**

As mentioned previously, the majority of research on perceived risk has adopted a two dimensional conceptualisation of the construct (Bauer, 1960; Ross, 1975; Dowling, 1986). Generally speaking, there are two approaches to the operationalisation of perceived risk. One is based on Bauer's (1960) conceptualisation and includes uncertainty and adverse consequences components. The other was popularised by Peter and Tarpey (1975) and includes probability of loss and importance of loss components. Early researchers obtained an overall score for perceived risk by combining the two components multiplicatively (e.g. Cunningham, 1967; Zikmund and Scott, 1973), an approach that is most likely based on probability theory (Peter and Ryan, 1976). While this approach has been criticised for a number of reasons, including the suggestion that it overcomplicates consumer decision processes (Wright, 1973), it has become the most widely accepted and used method of calculating overall perceived risk (Dowling, 1986; Srinivasan and Ratchford, 1991; Yavas et al, 1993).

The current research therefore adopted a two dimensional conceptualisation of perceived risk, operationalised by the likelihood of adverse consequences associated with donating blood and the importance of these consequences. These components were combined multiplicatively to obtain an overall perceived risk score.

In regard to the types of risk that may be relevant for the domain of blood donation, a review of the literature, together with the results of the focus groups, suggested there were four types of risk relevant to blood donation, namely (1) social risk; (2) psychological risk; (3) physical risk; and (4) the risk of loss of time. As a result, items designed to measure these types of risk as they related to blood donation were included in the questionnaire. Appendix B outlines the literature used to identify the relevant types of risk and to develop these items.

### **2.3.4 Attitudes**

#### **2.3.4.1 Attitudes Defined**

While the study of attitudes has been a critical part of social psychology since the 1920's (McGuire, 1986; Rajecki, 1990), there is still no universally accepted definition of the construct (Olson and Zanna, 1993). One of the major reasons is disagreement among researchers about their structure, an issue that continues to receive a great deal of attention (McGuire, 1986).

Initially, attitudes were viewed either as a unidimensional construct, where they were regarded as an affective orientation towards the attitude object (e.g. Fishbein and Ajzen, 1975), or as a multidimensional construct with affective, cognitive and behavioural components (e.g. Katz and Stotland, 1959), each of which varies along an evaluative dimension. While several studies have used causal path analysis to determine which model of attitudes is the most appropriate (e.g. Bagozzi, 1978; Bagozzi and Burnkrant, 1979; Breckler, 1983; Dillon and Kumar, 1985), the results have been

mixed. Chaiken and Stangor (1987) suggested that the differences in results may be in part attributable to variations in the sophistication of the software used by the researchers and, as such, that it would be unwise to suggest a definitive conclusion as to which model was the best.

It should be noted, however, that, while the multidimensional perspective views affect, cognition and behaviour as components of attitudes, researchers have recently begun to think of these as correlates of attitudes, rather than components. For example, some researchers have suggested that attitudes are evaluations of an attitude object and that the outcomes of these evaluations are expressed by affective, cognitive and behavioural responses (Ajzen, 1984; Breckler, 1984; Davis and Ostrom, 1984). Further, Zanna and Rempel (1988) have referred to attitudes as evaluations that can be based on affective, cognitive or behavioural information.

Despite the various views of attitudes, Olson and Zanna (1993) have argued that it is possible to identify a number of aspects that would be accepted by most attitude theorists, namely: (1) that evaluation is central to attitudes; and (2) that it is possible to identify affective, cognitive and behavioural antecedents to, and consequences of these evaluations. Olson and Zanna (1993 p.120) suggested that "the affective-cognitive-behavioural framework provides a useful heuristic for thinking about both the antecedents and consequences of attitudes, but these domains will not necessarily all apply to a given attitude".

While there is not a universally accepted definition of attitudes, it seems that most researchers view attitudes not as a construct with affective, cognitive and behavioural dimensions, but rather as a construct that is the outcome of an evaluation of an attitude object that can have affective, cognitive and behavioural antecedents and consequences. This conceptualisation of attitudes was adopted in the current study.

#### **2.3.4.2 The Importance of Attitudes**

The importance of attitudes rests on the assumption that people tend to behave in accordance with their attitudes and that, as such, attitudes can be useful predictors of behaviour. This assumption of attitude-behaviour consistency was generally accepted by social psychologists and, as Cooper and Croyle (1984) pointed out, it was the main motivating factor underlying most of the early attitude studies. However, there were also those who questioned this assumption so that, by the late 1960's, the usefulness of attitudes as predictors of behaviour was thrown into doubt as reviewers such as Wicker (1969) began to bring together a growing amount of evidence suggesting that attitudes and behaviour were often inconsistent. In fact, Wicker (1969) identified over thirty studies that found attitudes were poor predictors of behaviour for a range of different behaviours, including absenteeism (Bernberg, 1952) and cheating on self-graded exams (Corey, 1937).

In response to these criticisms, researchers took up the challenge of investigating the link between attitudes and behaviour. One perspective that

emerged was that the problem of attitude-behaviour inconsistency was a methodological problem, a view articulated by Ajzen and Fishbein (1977) when they argued that the problem was not with the conceptual link between attitudes and behaviour, but rather with the way these constructs are measured. In their review of attitude-behaviour research Ajzen and Fishbein (1977) concluded that attitudes were good predictors of behaviour only when measures showed a high degree of correspondence. In other words, when both attitudes and behaviour were measured at the same level of specificity. They concluded that a specific attitude would be a better predictor of a specific behaviour (single-act criterion) than would a general attitude and that a general attitude would be a better predictor of general behavioural tendencies (multiple-act criterion) than would be a specific attitude. So, if the intention is to predict a specific behaviour, then an attitude measure should be specifically developed for that behaviour. Alternatively, if the intention is to measure general behavioural tendencies, a general attitude measure should be used. A number of studies have provided empirical support for this proposition. For example, Fishbein and Ajzen (1974) found that, while general attitudes towards religion were good predictors of general religious behavioural tendencies, they were poor predictors of specific religious behaviours. Similarly, Heberlein and Black (1976) found that, while a general attitude was a poor predictor of the specific act of purchasing lead-free gasoline, a specific attitude was a good predictor of that behaviour.

It should be noted that, while these studies found significant correlations between attitudes and behaviour, some researchers, such as Fishbein and

Ajzen (1975) and Triandis (1977) have argued that attitudes influence behaviour indirectly and that their influence is mediated by behavioural intentions. Several studies, using causal path analysis, have provided evidence supporting this proposition. For example, Burnkrant and Page (1982) and Bagozzi (1981) found that attitudes were determinants of intentions to donate blood, while Horton and Horton (1991) made similar findings in regard to intentions to sign an organ donor card. Further, Bagozzi (1981) and Horton and Horton (1991) found that these intentions were predictors of behaviour.

There is clearly evidence to support the notion that attitudes are a useful predictor of behaviour and that they have an influence through their effect on behavioural intentions. As a result, the current study included people's attitudes towards blood donation as an antecedent to people's willingness to donate blood.

#### **2.3.4.3 The Measurement of Attitudes**

As already mentioned, the current study adopted the view that an attitude is the outcome of an evaluation of an attitude object. The most common method used to measure such attitudes is a series of self-report responses about the attitude object.

A number of scaling methods have been developed to measure attitudes, including Thurstone, Likert, Guttman and semantic differential scaling. While these scales have performed well in terms of their measurement of

attitudes, the Thurstone and Guttman scales are relatively cumbersome and time-consuming to construct (Himmelfarb, 1992). Further, the semantic differential scaling technique cannot be applied across each of the three classes of attitudinal indicators (affective, cognitive and behavioural) but rather, can only be applied to cognitive indicators (i.e. beliefs) (Himmelfarb, 1992). Consequently, and given the success of Likert type scales as a measure of attitudes in a wide range of domains, the current study used Likert scales to measure attitudes toward blood donation.

The results of the focus groups, together with the findings of the literature review, were used to identify relevant issues about attitudes to blood donation. These results suggested that attitudes towards blood donation were multidimensional and that relevant dimensions may relate to such factors as blood donation as an act of altruism or humanitarianism; the replacement of blood and assurance of the blood supply; incentives to donate; apathy regarding blood donation; fears associated with donation, both physical and psychological; suitability to donate; inconvenience of donation; and social and religious issues relating to donation. The full details of the literature used to identify these dimensions and to assist in the development of scale items are shown in Appendix B.



## **Chapter Three**

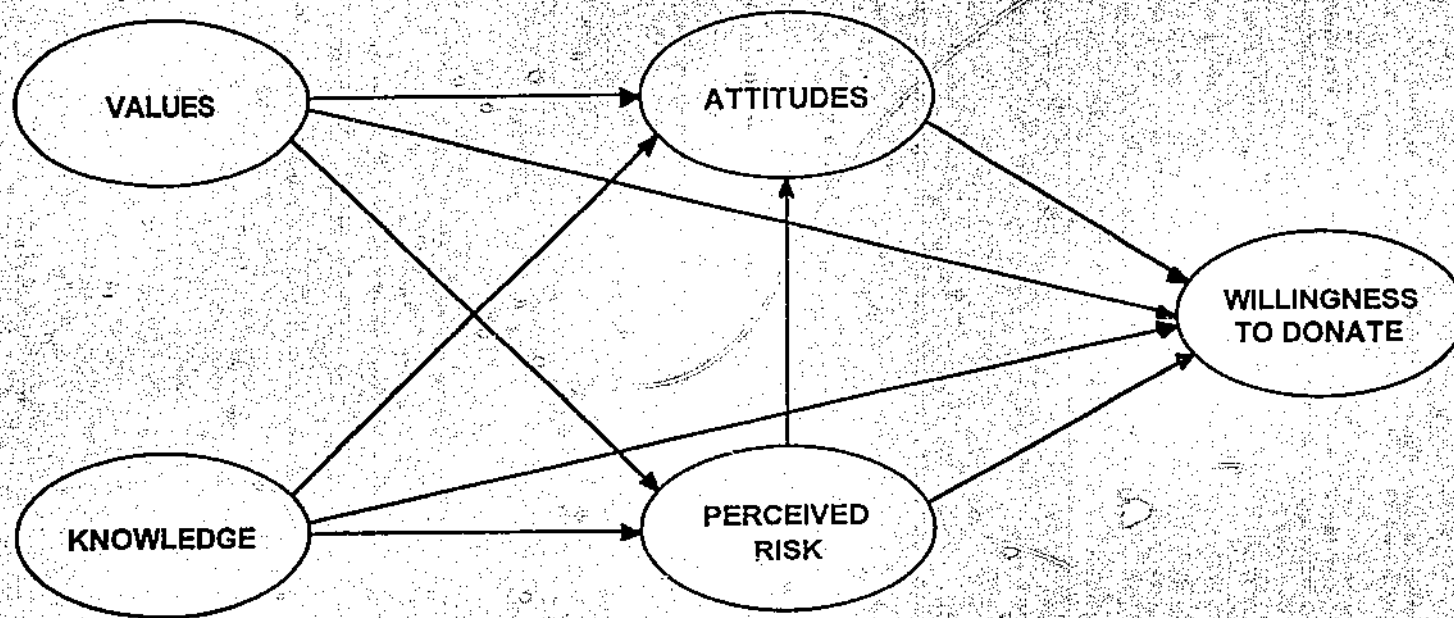
### **Model and Hypotheses**

#### **3.1 The Model**

The model proposed for the current study represents a conceptualisation of the process leading to the development of an individual's intentions to donate blood, termed "willingness to donate" in the model.

As mentioned in section 2.1, the model is based on the learning hierarchy model of decision making, which is considered to be appropriate where the decision is important to the decision maker and where there are few time and external pressures (Zajonc, 1980; Horton, 1984). Since it has been argued that these are the conditions under which the decision to donate blood are made, the model is appropriate for this study. The theory underpinning this model assumes the decision maker follows a process that moves from cognition, to the development of attitudes, leading to behavioural intentions and then, finally, to behaviour.

While this explains the general theoretical framework, more specifically, the current model was based on Horton and Horton's (1991) model of the decision to sign an organ donor card and, to a lesser extent, on Allen and Butler's (1993) model of intentions to donate blood. The model is shown in Figure 3.1.



**Figure 3.1 Model of Willingness to Donate Blood**

### **3.2 Hypotheses**

This section outlines the hypotheses tested in the present study and provides a summary of the theory underlying each of these. A more complete review of the relevant theory was presented in Chapter Two.

Values have been suggested as having a causal influence over attitudes and behaviour. For example, Rokeach (1973) suggested that "values occupy a more central position than attitudes within one's personality and cognitive system, and they are therefore, determinants of attitudes as well as behaviour". Similarly, Homer and Kahle (1988) described values as the prototypes from which attitudes and behaviour are manufactured. Empirical evidence exists to support the notion that values have a causal influence over attitudes. However, it may be that values influence behaviour indirectly, through their effect on attitudes. For example, Homer and Kahle (1988) found that attitudes mediated the relationship between values and shopping behaviour, while Horton and Horton (1991) made similar findings in regard to signing an organ donor card. Further, while the relationship between values and perceived risk has not been investigated, it was proposed that values influence perceived risk. This suggests:

- H1 *Values influence attitudes towards blood donation.*
- H2 *Values influence the level of perceived risk associated with blood donation.*
- H3 *Values influence willingness to donate.*

Several studies have linked knowledge to behaviour. Chliaoutakis (1994) found a strong positive correlation between the level of knowledge regarding blood donation issues and subsequent blood donation behaviour. Horton and Horton (1991) used causal path analysis to investigate the decision to sign an organ donor card, and found that knowledge influenced the signing of the card both directly and indirectly, through the mediating variables of attitudes and behavioural intentions. In a similar study of intentions to donate blood, Allen and Butler (1993) found that the relationship between knowledge and intentions to donate blood was mediated by perceived risk. It is important to note that, contrary to what was expected, this study found a positive relationship between the level of knowledge and perceived risk. More specifically, since it has been shown that individuals tend to seek out information as a means of reducing the level of perceived risk associated with a given transaction (Capon and Burke, 1980; Schaninger and Sciglimpaglia, 1981), it would seem reasonable to expect the level of perceived risk to decline as the level of knowledge increases. As mentioned, this was not the case for the Allen and Butler's (1993) study of blood donation. The researchers propose two possible explanations for this. First, as individuals learn more about blood donation, they may also learn more about the potential risks associated with donation. Second, it may be that the decision making process is different for blood donation than for less risky consumer products and services, the area where most of the other studies have been conducted. In summary, perceived risk and attitudes have both been found to mediate the relationship between knowledge, and intentions and behaviour. While the relationship between

attitudes and perceived risk is not clear, due to the lack of studies that have considered both at the same time, the current study proposed that perceived risk mediates the relationship between knowledge and attitudes. Further, it was proposed that knowledge also has a direct influence over willingness to donate, suggesting:

- H4 *As the level of knowledge about blood donation increases, so too will the level of perceived risk associated with blood donation.*
- H5 *As the level of knowledge about blood donation increases, attitudes towards blood donation will become more favourable.*
- H6 *As the level of knowledge about blood donation increases, so too, will willingness to donate.*
- H7 *As the level of perceived risk associated with blood donation increases, attitudes towards blood donation will become less favourable.*

It has been found that attitudes influence behaviour indirectly, through the mediating variable of behavioural intentions. For example, in their studies of blood donation behaviour, Burnkarnt and Page (1982) and Bagozzi (1981) found that intentions mediated the relationship between attitudes and blood donation behaviour, while Horton and Horton (1991) made similar findings when investigating the behaviour of signing an organ donor card. Further,

Allen and Butler (1993) found a significant relationship between the level of perceived risk associated with blood donation and intentions to donate, suggesting:

H8 *As attitudes towards blood donation become more favourable, willingness to donate will increase.*

H9 *As the level of perceived risk associated with blood donations increases, willingness to donate will decline.*

In conclusion, it was hypothesised that values and knowledge will both be determinants of attitudes towards blood donation, but that the relationship between knowledge and attitudes will be mediated by perceived risk. These attitudes will, in turn, be determinants of people's willingness to donate blood.

## **Chapter Four**

### **Methodology**

#### **4.1 Research Design**

The study included two distinct stages. The first was qualitative in nature and involved the use of focus groups to assist in developing an understanding of those factors that influence people's willingness to donate blood. The focus group results, together with findings from the literature, were used to develop the conceptual model of willingness to donate blood outlined in Chapter 3.

The second stage was quantitative in nature and its purpose was to test a series of hypotheses about the relationships between the factors in the model. This stage of the study was cross-sectional and data were collected in a non-contrived setting using a structured questionnaire. Given the objectives of the study, the data were collected and analysed at an individual level.

#### **4.2 Sample**

The sample population consisted of households in the Perth metropolitan area with publicly listed telephone numbers. A sample of 2000 households was randomly selected using Oz on Disk, a CD-ROM version of the white pages telephone directory.

### **4.3 Data Collection**

#### **4.3.1 Pilot-Testing**

There were two pilot tests in the study. The purpose of the first test was to assist in the development of the attitude scale used in section three of the questionnaire and the second was used to test the draft questionnaire prior to its use in the full-scale survey. Full details of the results of these tests are provided in Appendices C and D respectively.

#### **4.3.2 The Questionnaire**

The final questionnaire consisted of 20 sections and is shown in Appendix E. Sections 1 and 2 were concerned with respondents' knowledge about blood donation issues. Section 1 measured subjective knowledge by asking respondents to indicate their agreement with a series of Likert type statements about blood donation and related issues. Section 2 included an inventory of statements designed to measure aspects of objective knowledge of blood donation (e.g. procedural and specific facts). This was achieved by asking respondents to indicate whether they believed the statements were true or false. A "don't know" response category was also provided. The specific items used were based on the literature review and the focus groups, which suggested that such questions should assess procedural knowledge about who can donate; how often they can donate; where they can donate; the time required to donate and so on, as well as knowledge about specific facts such as collection and testing procedures; the need for various blood types; religious support for blood donation; and whether payment of blood donors is permitted. The full details of the



literature used to assist in developing the questionnaire items are outlined in Appendix B.

Section 3 included 37 items designed to measure attitudes towards blood donation. The procedures used to develop and refine these items are outlined in Appendix C. Respondents were asked to indicate their level of agreement with each of these statements on a 7 point Likert type agree / disagree scale. The items used were developed from the literature review and the focus groups, that suggested any measure of attitudes towards blood donation should address such things as: blood donation as an act of altruism or humanitarianism; the replacement of blood and assurance of the blood supply; incentives to donate; apathy regarding blood donation; fears associated with donation, both physical and psychological; suitability to donate; inconvenience of donation; and social and religious issues relating to donation. The full details of the literature used to assist in developing the questionnaire items are shown in Appendix B.

The fourth section measured respondents' values and used the list of values (LOV) scale developed by Kahle (1983). Respondents were asked to indicate the importance of each of these items in their daily lives, using a 7 point scale, ranging from 1 (not at all important) to 7 (very important).

Sections 5 and 6 combined to provide a measure of perceived risk. More specifically, section 5 asked respondents about their perceived likelihood of various consequences occurring as a result of donating blood, using a 7

point scale ranging from 1 (highly unlikely) to 7 (highly likely). Section 6 asked respondents to indicate how important these consequences were to them, using a 7 point scale ranging from 1 (not at all important) to 7 (very important). A review of the literature, together with the results of the focus groups, suggested four types of risk relevant to blood donation, namely: social risk; psychological risk; physical risk; and the risk of loss of time. As a result, items designed to measure these types of risk, as they related to blood donation, were included in the questionnaire. Appendix B outlines the literature used to identify the relevant types of risk and to develop the items.

Section 7 asked respondents about their media use. Once again, a 7 point scale was used, ranging from 1 (no use at all) to 7 (very frequent use). Sections 8 and 9 measured respondents' actual and intended blood donation behaviour respectively. Section 8 used a simple nominal scale, while section 9 used an 11 point interval scale based on Juster's (1966) behavioural intentions scale.

Section 10 included a series of statements about respondents' willingness to accept blood donations, while section 11 asked respondents to indicate their views about the perceived effectiveness of blood transfusions. Both questions used 7 point scales, with section 10 ranging from 1 (not at all willing) to 7 (very willing) and section 11 ranging from 1 (extremely low) to 7 (extremely high).

The remaining sections of the questionnaire asked about a series of demographic and background variables, including gender, age, marital status, education, employment status, occupation, income, country of birth (both of the respondent and their parents) and religious faith.

#### **4.3.3 Field Procedures**

The data were collected using a self-administered, structured questionnaire. Each household in the sample was sent a package containing the questionnaire, together with a reply paid envelope for the return of completed questionnaires. A cover letter accompanying the questionnaire requested that it should be completed by that member of the household who was aged 16 or over, and who had most recently celebrated a birthday.

#### **4.4 Response Rate**

Of the 2000 questionnaires sent out, 65 were returned to sender, as the intended recipients no longer resided at those addresses. A total of 516 were completed and returned from the remainder of the sample, of which 513 were useable, resulting in a response rate of 27%. Given the length and detailed nature of the instrument, this was considered to be a good result. Many respondents made favourable comments about the purpose of the study, a fact that may have contributed to the response rate.

#### **4.5 Data Analysis**

Since the first objective of data analysis was to develop a feel for the data and the nature of the sample, a range of descriptive statistics were obtained including frequency distributions, measures of central tendency (mean scores) and measures of dispersion (standard deviations).

The next objective of the present analysis was to determine the dimensionality of the model constructs prior to the specification and evaluation of the model and therefore, a series of factor analyses were undertaken to achieve this.

The remainder of the analysis was concerned with evaluating the model and testing the causal hypotheses. In order to achieve this, a causal path analysis package known as "AMOS" (Arbuckle, 1997) was used. Amos was used because of its ability to simultaneously estimate multiple interrelated dependence relationships and its capacity to accommodate unobserved variables with multiple indicators. First, the validity of the model constructs was assessed by undertaking a confirmatory factor analysis on all items in the model. Since this indicated that the model had a poor fit, each construct of the model was assessed separately using one factor congeneric models for unidimensional constructs and confirmatory factor analyses for those with multiple dimensions. This method is consistent with the two-step approach that has been proposed in the literature where the component of the model relating to the fit of the observed variables to the latent variables (measurement model) is assessed before the component of the model that

relates to the structural relationships between the latent variables (structural model) is assessed (James, Mulaik and Brett, 1982; Mulaik et al, 1989; Sweeney, 1995). Joreskog and Sorbom (1993, p.113) outlined the rationale behind this approach when they stated "the testing of the structural model, i.e., the testing of the initial theory, may be meaningless unless it is first established that the measurement model holds...Therefore, the measurement model should be tested before the structural relationships are tested". Those models with poor fits were improved by deleting items with low reliability scores. Once a good fit had been achieved for each model construct, the full model was estimated. Since this initially had a poor fit, a number of theoretically justifiable changes were made to the model specification, resulting in a good fitting, theoretically sound model.

## **Chapter Five**

### **Preliminary Data Analysis**

#### **5.1 Descriptive Statistics**

In an effort to examine the nature of the sample and to develop a feel for the data, a range of descriptive statistics, including frequency distributions, means and standard deviations were obtained for the variables measured in the questionnaire. The following sections discuss the sample in terms of demographic characteristics, blood donation patterns, knowledge about blood donation, attitudes towards blood donation, values, and perceived risk associated with donating blood.

##### **5.1.1 Demographics**

The sample was slightly biased in favour of females, with that group accounting for 56% of the sample.

The sample was biased in favour of those aged between 30 and 59, and against those aged between 15 and 29. More specifically, although 30 to 59 year olds account for 50% of the population (ABS, 1991), they made up 64% of the sample, while 15 to 29 year olds made up 19% of the sample compared with 32% of the population (ABS, 1991).

Respondents who were married or living in a defacto relationship were overrepresented, accounting for 66% of the sample, compared with 55% of the population (ABS, 1991), while those who had never married were underrepresented, accounting for only 19% of the sample compared with

30% for the population (ABS, 1991). This was not very surprising given that the sample included more older people than the population as a whole, and that older people are more likely to be, or to have been married (Engel, et al, 1990).

The composition of the sample differed from that of the population in terms of education, with 26% of the sample having attained a Bachelor's degree or higher, while only 8% of the population have attained this level of education (ABS, 1991). Once again, this may be attributable in part, to the older nature of the sample. However, the nature and content of the survey instrument may also be have been partly responsible for this "education" bias.

A larger proportion of the sample were full-time employed, and there was a smaller proportion of unemployed respondents in the sample. Given that younger people were underrepresented in the sample and the relatively high rates of unemployment among this group, this was not surprising.

As would be expected, given the education levels of the sample, more respondents worked in professional and management positions and less in manual and unskilled positions than is the case for the population.

Once again, education levels among respondents is likely to be a major reason for the composition of the sample in regard to income earned, with 29% earning more than \$40,000 per annum, compared with only 7% for the population (ABS, 1991).

Generally, the sample was representative of the population in regard to birthplace of the respondent, with the majority of respondents being born in Australia (66%). The exception was for respondents born in the United Kingdom (21% in the sample compared with 15% for the population (ABS, 1991)).

The sample was representative of the population, although Catholics were slightly underrepresented while Anglicans were slightly overrepresented. More specifically, 23% of the sample were Catholics, compared with 27% for the population, and 31% were Anglicans, compared with 26% for the population (ABS, 1991).

Generally speaking, the sample was representative of the Perth metropolitan population. However, the sample had a slightly higher proportion of females, as well as more older people than the population, a fact that may have contributed to the higher proportion of married people in the sample. Further, the education level of the sample was higher than for the population, leading to differences in occupation and income level.



### **5.1.2 Blood Donation Patterns**

#### **5.1.2.1 Past Donation Behaviour**

A large proportion of respondents indicated that they had donated blood at some time (50%), suggesting that the sample was biased in favour of blood donors. However, it was considered more useful to look at the proportion of those that had donated during the past twelve months, since this would give a more accurate indication of the proportion of respondents who are currently registered blood donors. This revealed that 33% of those, or 17% of the total sample, had donated during the past twelve months. Given that less than 5% of the population are registered blood donors (Australian Red Cross, 1993), the suggestion that the sample was biased in favour of registered blood donors seems reasonable.

#### **5.1.2.2 Intended Donation Behaviour**

While 50% of respondents indicated that they had never donated blood, the same proportion indicated that there was very little chance of their donating in the next twelve months, with 30% indicating 1 chance in 100 and 20% indicating 1 chance in 10. However, 32% indicated that there was a fairly good possibility (5 chance in 10) or better, of their donating during the next twelve months, with 17% indicating that there was at least 8 chances in 10 that they would donate.

### **5.1.3 Knowledge About Blood Donation**

As mentioned in section 4.3.2, the current study measured subjective and objective knowledge. The first assessed respondents' perceived level of knowledge of blood donation and the second assessed respondents' actual level of knowledge about blood donation. A composite score was calculated for objective knowledge by summing the scores given for each statement, with correct answers given a score of 1 and incorrect and don't know responses given a score of 0.

The mean score for the question relating to perceived knowledge was 3.9 on the seven point scale, suggesting that respondents did not regard themselves as being particularly knowledgeable about blood donation. Further, the standard deviation was 1.7, suggesting there was not a great deal of variation about the level of perceived knowledge. The mean score for actual knowledge supported this perception. Specifically, mean objective knowledge score was 52%, with only 40% of respondents scoring more than 50%.

The questions used to measure objective knowledge are shown in Table 5.1, together with details of the correct answer for each and the percentage of respondents who answered correctly. The results revealed a number of important points in relation to people's knowledge of blood donation issues.

**Table 5.1 Correct Knowledge Responses and Percent Correct Responses**

<b>Knowledge Statement</b>		<b>Correct Answer</b>	<b>Percent Correct</b>
2.1	It takes around three months for the body to fully replace donated blood.	T	31
2.2	People can donate blood up to the age of 70 and beyond, if approved by a medical officer.	T	64
2.3	All of the equipment used to take a blood donation is sterile and used only once, to ensure the safety of the donor.	T	89
2.4	It takes between 45 minutes and one hour to go through the full process of making a blood donation.	T	68
2.5	Blood donations would be accepted from people who have had their ears pierced within the last 12 months.	T	33
2.6	The blood bank tests all donated blood for HIV, regardless of the donor's background.	T	84
2.7	The blood bank always has adequate stocks of the common blood types.	F	72
2.8	Intravenous drug users, other than those using drugs prescribed by a physician, would not be allowed to donate blood.	T	75
2.9	All major religions, except for Jehovah's witnesses, support blood donation.	T	57
2.10	The blood bank recommends that average people can safely donate blood every 4 weeks.	F	35
2.11	All blood bank staff involved with taking blood donations have been fully trained to ensure the safety of the donor.	T	93
2.12	Legislation in Australia allows blood donors to be paid for blood in certain situations.	F	45
2.13	The blood bank always desperately needs donations of the rarer blood types.	T	88
2.14	Scientists have recently developed the technology to produce a substitute for blood in the laboratory.	F	25
2.15	People who have suffered from an infectious disease such as hepatitis or malaria, would never be allowed to donate blood.	F	8
2.16	The demand for blood is increasing at a faster rate than the supply of new donors, placing the State's blood supply under more and more pressure each year.	T	84
2.17	People who have been tattooed during the last 6 months would not be accepted as blood donors.	T	41
2.18	Homosexuals, who practice safe sex, would be accepted as blood donors.	F	28
2.19	The blood bank has three donor clinics in Perth, Fremantle and Hillarys, and sends mobile donor units to the suburbs at regular intervals.	T	74
2.20	People under the age of 18 cannot be blood donors.	F	18
2.21	Nobody in Australia has ever acquired AIDS by donating blood.	T	32
2.22	People who have had acupuncture during the last twelve months would not be allowed to donate blood.	F	30
2.23	The Australian Red Cross needs over 1 million blood donations each year to meet current demands.	T	44
2.24	People who have visited or lived in certain countries may be rejected as blood donors.	T	52
2.25	A local anaesthetic is available to all blood donors upon request.	T	31
2.26	Less than 5% of the State's population is registered as blood donors.	T	46

One of the most significant was that the proportions of correct responses given for questions relating to donor eligibility (2.5; 2.15; 2.17; 2.18; and 2.20) were relatively low, ranging from 8% to 41%. A possible consequence of this may be that people who are eligible to donate are not doing so,

because they believe they are ineligible. If this is true, it raises serious concerns, particularly given the extremely low proportion of respondents who knew that people under the age of 18 could donate blood (18%). This could mean that many people from this pool of healthy potential donors do not donate simply because they do not know they are able to do so.

It should also be noted that only 32% of respondents knew that nobody in Australia has ever acquired AIDS by donating blood. While this would suggest that people have doubts about the safety of procedures used during blood donation, the extremely high proportion of correct answers given for questions related to the safety of these procedures (2.3 and 2.11) suggest that this is not the case. It is reasonable to assume that concerns about safety as a result of donating blood are not related to deficiencies in knowledge regarding the procedures used to collect blood, but to something else. It may be that people have doubts as to whether these procedures are properly implemented.

Another important point is that there were very high proportions of correct answers to the questions relating to the need for all blood types (2.7; 2.13; and 2.16), suggesting that lack of awareness of the need for blood is not a major contributing factor to the low rates of donation. However, it should be noted that a very high proportion of respondents were unsure as to whether scientists could manufacture an artificial substitute for blood (2.14). While respondents may be aware of the need for blood, many may not actually

donate since they believe that this demand can be met by manufactured artificial blood.

Finally, it is interesting to note that only 31% of respondents were aware that a local anaesthetic is available to all blood donors on request (2.25). This may be significant since the fear of pain is often cited as a reason for not donating blood (Pillivain, 1990; Oswalt and Gordon, 1993).

#### **5.1.4 Attitudes Towards Blood Donation**

The items used to measure attitudes towards blood donation are shown in Table 5.2, together with their means and standard deviations. The following section highlights those items that had extreme mean scores, as well as those with relatively high standard deviations.

It is interesting to note that the statements with extreme mean scores seemed to represent four distinct aspects. Three of the items with relatively high mean scores suggested that respondents strongly agreed that apathy was a major reason for not donating (3.5; 3.20; and 3.30), while another four suggested that respondents agreed that blood donation was an altruistic or humanitarian act (3.6; 3.10; 3.21; and 3.25). Two of the items with relatively low mean scores suggested that respondents disagreed with the notion that people are at risk of contracting AIDS during the donation process (3.2 and 3.8), while another three items seemed to indicate respondents strongly disagreed that there were social, cultural and religious barriers to blood donation (3.15; 3.29; and 3.33).

**Table 5.2 Mean Scores and Standard Deviations<sup>1</sup> for Attitude Items**

<b>Attitude Statement</b>	<b>Mean</b>	<b>Std. Dev.</b>
3.1 People who have been saved by a blood donation have a duty to repay the debt by becoming blood donors.	4.2	1.9
3.2 Blood donors are at risk of contracting AIDS during the donation process.	2.1	1.6
3.3 Healthy people have a duty to donate blood.	4.3	1.7
3.4 People would be more willing to donate blood if they were asked personally.	4.9	1.6
3.5 Many supporters of blood donation simply never get around to making donations themselves.	5.7	1.3
3.6 Blood donations save lives.	6.7	1.0
3.7 I don't like the sight of blood.	3.0	2.1
3.8 People should not donate blood because of the risk of catching AIDS.	2.0	1.7
3.9 I am afraid of being rejected as a blood donor for some reason.	2.3	1.9
3.10 Blood donors provide a valuable service to the community.	6.6	1.2
3.11 I am afraid of needles.	3.2	2.2
3.12 People with others close to them who have received a blood transfusion should be willing to become blood donors themselves.	4.7	1.7
3.13 The risk of feeling weak after making a blood donation worries me.	2.8	1.9
3.14 I am afraid of hospitals.	2.5	1.8
3.15 Society does not approve of blood donation.	1.6	1.3
3.16 I am unsure whether I would be suitable as a blood donor.	3.0	2.1
3.17 Mass promotion would encourage many more people to become blood donors.	5.2	1.6
3.18 There is a high degree of risk associated with receiving a blood transfusion.	3.4	1.8
3.19 People who have received a blood transfusion should be willing to become blood donors themselves.	4.6	1.7
3.20 Many people are non-donors because they have never actually thought about the need for their blood.	5.5	1.4
3.21 Blood donations provide sick people with a chance at a better life.	6.3	1.2
3.22 Donating blood requires a lot of your time.	2.4	1.5
3.23 I am concerned about the safety of the medical procedures used by blood banks.	2.8	1.9
3.24 People who donate blood should be rewarded in some way for their efforts.	2.8	1.9
3.25 Donating blood is like giving an anonymous gift of life.	6.1	1.4
3.26 Blood donation is against my religion.	1.3	1.0
3.27 The offer of a free medical check-up would motivate people to donate blood.	4.8	1.8
3.28 Blood donation is not a painful procedure.	5.2	1.8
3.29 My culture does not approve of blood donation.	1.3	1.0
3.30 Sometimes the only thing that stops people from donating blood is a lack of motivation to actually get up and make the effort.	6.1	1.2
3.31 Blood donors are put to a great deal of inconvenience.	2.3	1.5
3.32 I am not afraid of the medical procedures involved in making a blood donation.	5.3	2.0
3.33 My friends object to blood donation.	2.0	1.5
3.34 People who receive blood transfusions should be worried about the risk of the blood being infected.	3.5	1.9
3.35 It is inconvenient to make blood donations.	3.1	1.7
3.36 I am concerned about the risk of fainting associated with donating blood.	2.7	2.0
3.37 I would not be suitable as a blood donor for medical reasons.	2.6	2.1
3.38 I am concerned about the effectiveness of safety procedures in place to protect people who receive blood transfusions.	3.2	2.0

<sup>1</sup> Scale of 1 to 7, where 1 = "Strongly Disagree" and 7 = "Strongly Agree".

The items with relatively high standard deviations suggest that there is variation in terms of respondents' attitudes about three distinct aspects of blood donation. More specifically, the scores on items 3.7; 3.11; 3.32; and

3.36 suggest there is a wide range of opinion among respondents about the fears associated with making a donation, while the standard deviations for items 3.16 and 3.37 suggest that this is also the case in terms of whether respondents believe they are suitable as donors. In addition, it seems that respondents had diverse views about the effectiveness of procedures in place to protect people who receive blood transfusions (3.38).

### **5.1.5 Values**

The List of Values (LOV) items used to measure values are shown in Table 5.3, together with mean scores and standard deviations for each. The mean scores for the items suggest that respondents place a great deal of importance on all of the values except excitement (4.2). In addition, it seems that there is little variation among respondents, as indicated by the low standard deviations.

**Table 5.3 Mean Scores and Standard Deviations<sup>1</sup> for Value Items**

<b><u>Value Statements</u></b>		<b><u>Mean</u></b>	<b><u>Std. Dev.</u></b>
4.1	Sense of belonging	5.9	1.3
4.2	Excitement	4.8	1.5
4.3	Warm relationships with others	6.3	1.0
4.4	Self-fulfillment	6.2	0.9
4.5	Being well respected	5.9	1.2
4.6	Fun and enjoyment of life	6.2	1.0
4.7	Security	6.2	1.0
4.8	Self-respect	6.6	0.7
4.9	A sense of accomplishment	6.3	0.9

<sup>1</sup> Scale of 1 to 7, where 1 = "Not at all Important" and 7 = "Very Important".

### **5.1.6 Perceived Risk Associated with Blood Donation**

The items used to measure the importance of various perceived risks associated with donating blood and the likelihood of these occurring are shown in Tables 5.4 and 5.5 respectively, together with the mean scores and standard deviations for each. This section discusses items with extreme mean scores and, or relatively high standard deviations.

#### **5.1.6.1 Importance Measures**

As with the attitude statements, those with extreme mean scores for the importance of perceived risk measures tended to represent various dimensions of perceived risk. More specifically, those with high scores suggested that respondents viewed the possible health risks associated with donation as more important than the other types of risk (5.1; 5.5; and 5.6), while those items with low scores suggested that respondents tend to consider the social and religious risks as less important (5.4; 5.9; 5.10; and 5.12).

It is interesting to note that, in addition to the relative importance of the perceived health risk associated with donation, the items relating to this type of risk had relatively high standard deviations (5.1 and 5.5). It seems that, while this risk tends to be more important, there is some disagreement on this point.



**Table 5.4 Mean Scores and Standard Deviations<sup>1</sup> for Importance of Perceived Risk Items**

<b>Perceived Risk Statements</b>		<b>Mean</b>	<b>Std. Dev.</b>
5.1	How important to you, is the risk of contracting AIDS when donating blood?	5.5	2.3
5.2	How important to you, is the risk of experiencing pain and discomfort when donating blood?	3.8	2.1
5.3	How important to you, is the risk of being rejected as a blood donor for some reason?	3.0	2.1
5.4	How important to you, is the risk that your religious community will object to you becoming a blood donor?	1.3	1.0
5.5	How important to you, is the health risk associated with donating blood, due to unsafe medical procedures?	5.2	2.3
5.6	How important to you, is the risk of passing on disease to others when donating blood?	5.9	1.9
5.7	How important to you, is the risk that donating blood will cause you inconvenience?	2.9	1.8
5.8	How important to you, is the risk that the blood bank will disclose your personal information to other parties, against your will?	4.6	2.5
5.9	How important to you, is the risk that your family will object to you becoming a blood donor?	1.6	1.3
5.10	How important to you, is the risk that your friends will object to you becoming a blood donor?	1.4	1.0
5.11	How important to you, is the risk that your donated blood will be given to someone who is unworthy of a blood donation?	1.8	1.5
5.12	How important to you, is the risk that donating blood will prevent you from taking part in the afterlife?	1.3	1.0
5.13	How important to you, is the risk of suffering from negative health effects, such as dizziness, as a consequence of donating blood?	3.0	2.0
5.14	How important to you, is the risk that donating blood will take up a lot of your time?	2.6	1.7

<sup>1</sup> Scale of 1 to 7, where 1 = "Not at all Important" and 7 = "Very Important".

#### **5.1.6.2 Likelihood Measures**

Given that the highest mean score was 2.9 on the 7 point scale, it is clear that respondents believe there is little likelihood of the perceived risks associated with donating blood occurring. In relative terms, however, respondents seemed to believe that there was relatively more chance of experiencing physical side effects as a result of donating (6.2 and 6.13), and of being rejected as a blood donor (6.3).

**Table 5.5 Mean Scores and Standard Deviations<sup>1</sup> for Likelihood of Perceived Risk Items**

<b>Perceived Risk Statement</b>		<b>Mean</b>	<b>Std. Dev.</b>
6.1	How likely are you to contract AIDS when donating blood?	1.8	1.3
6.2	How likely are you to experience pain and discomfort when donating blood?	2.9	1.6
6.3	How likely are you to be rejected as a blood donor for some reason?	2.8	2.0
6.4	How likely is it that your religious community will object to you becoming a blood donor?	1.2	0.7
6.5	How likely are you to face a health risk when donating blood, due to unsafe medical procedures?	2.2	1.6
6.6	How likely are you to pass on disease to others when donating blood?	1.8	1.4
6.7	How likely are you to experience inconvenience when donating blood?	2.7	1.6
6.8	How likely is the blood bank to disclose your personal information to other parties against your will?	2.1	1.5
6.9	How likely is your family to object to you becoming a blood donor?	1.3	0.9
6.10	How likely are your friends to object to you becoming a blood donor?	1.2	0.7
6.11	How likely is it that your donated blood will be given to someone who is unworthy of a blood donation?	2.4	1.9
6.12	How likely is it that donating blood will prevent you from taking part in the afterlife?	1.3	0.9
6.13	How likely are you to suffer from negative health effects, such as dizziness, as a consequence of donating blood?	2.9	1.8
6.14	How likely is it that donating blood will require a lot of your time?	2.5	1.5

<sup>1</sup> Scale of 1 to 7, where 1 = "Highly Unlikely" and 7 = "Highly Likely".

As with the mean scores, the standard deviations were generally low, suggesting that respondents tended to hold similar opinions about the likelihood of the various types of perceived risk occurring. One exception to this was the risk of being rejected as a blood donor (6.13), with the high standard deviation suggesting respondents held different opinions on this matter. This was not surprising, however, since there was also a wide range of variation in respondents' attitudes about their suitability to donate blood.

## **5.2 Exploratory Investigation of the Model Constructs**

As mentioned in section 4.5, it was necessary to determine the dimensionality of the constructs prior to specification and evaluation of the model. The following sections discuss the results of the factor analyses that were undertaken on the items measuring the attitude, perceived risk and values constructs to determine their dimensionality.

### **5.2.1 Attitudes**

Since the attitude scale had already been developed and tested in the early stages of this study (Appendix C), the major objective was to replicate this scale. Therefore, a principal components factor analysis was undertaken using the full set of items included in the questionnaire (Section 3). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970) was 0.74, which has been defined by Stewart (1981) as “middling”, suggesting the data matrix can be usefully factor analysed. This analysis found 4 factors with eigenvalues greater than one that explained 63% of the variance and the results are shown in Table 5.6. As shown in the table, all factors had acceptable reliabilities with coefficient alpha's of at least 0.60 (Nunnally, 1967). It should be noted that there were important differences between this scale and the original one, which need to be discussed.

First, while the original scale included factors relating to Altruism and Humanitarianism; Cultural , Religious and Social Barriers; Incentive; and Fear of Procedures, these did not emerge from the current analysis. However, the last of these factors, namely “fear of procedures” combined

with the "psychological fears" factor. While it is difficult to offer reasons for the discrepancies between the two scales, one may be the fact that the sample for the original scale consisted of university students and, as such, had a proportion of overseas members. The differences between this group and the sample used for the survey in terms of cultural, religious and background characteristics may have had an influence over responses. Further, differences between the two samples in terms of English speaking abilities may have resulted in differences in the interpretation of questionnaire items.

<b>Table 5.6 Factor Analysis of Attitude Items</b>				
<b>Factor/ Item</b>	<b>Eigen-value</b>	<b>Comm- unality</b>	<b>Loading</b>	<b>Coeff. Alpha</b>
<b>Replacement and Assurance</b>	3.06			0.84
3.19 People who have received a blood transfusion should be willing to become donors themselves.		0.76	0.87	
3.1 People who have been saved by a blood donation have a duty to repay the debt, by becoming blood donors themselves.		0.73	0.85	
3.12 People with others close to them who have received a blood transfusion, should be willing to become blood donors themselves.		0.65	0.80	
3.3 Healthy people have a duty to donate.		0.57	0.75	
<b>Psychological Fears</b>	2.64			0.70
3.11 I am afraid of needles.		0.71	0.84	
3.7 I don't like the sight of blood.		0.64	0.79	
3.14 I am afraid of hospitals.		0.52	0.71	
3.28 Blood donation is not a painful procedure.		0.43	0.48	
<b>Inconvenience</b>	1.65			0.74
3.31 Blood donors are put to a great deal of inconvenience.		0.75	0.86	
3.22 Donating blood requires a lot of your time.		0.63	0.78	
3.35 It is inconvenient to make blood donations.		0.61	0.77	
<b>Health Concerns</b>	1.45			0.63
3.8 People should not donate blood because of the risk of catching AIDS.		0.66	0.81	
3.2 Blood donors are at risk of contracting AIDS during the donation process.		0.64	0.79	
3.23 I am concerned about the safety of the medical procedures used by blood banks.		0.49	0.66	

### **5.2.2 Perceived Risk**

As mentioned in section 2.3.3.3, the overall perceived risk scores were calculated by multiplying the importance of the various types of risk associated with blood donation by the likelihood of those risks actually occurring.

A principal components factor analysis was undertaken using these overall perceived risk scores. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970) was 0.67, which has been defined by Stewart (1981) as "mediocre", although still acceptable for use in a factor analysis.

- The analysis found three factors with eigenvalues over one and acceptable reliabilities that explained 70% of the variance in the data, and the results are shown in Table 5.7.

<b>Table 5.7 Factor Analysis of Perceived Risk Items</b>				
<b>Factor/ Item</b>	<b>Eigen-value</b>	<b>Comm- unality</b>	<b>Loading</b>	<b>Coeff. Alpha</b>
<b>Inconvenience Risk</b>	3.08			0.79
pr7 Perceived risk that donating blood will cause inconvenience.		0.81	0.90	
pr14 Perceived risk that donating blood will take up a lot of time.		0.79	0.89	
pr13 Perceived risk of suffering from negative health effects, such as dizziness, as a consequence of donating blood.		0.52	0.66	
pr2 Perceived risk of experiencing pain and discomfort when donating blood.		0.57	0.65	
<b>Social Risk</b>	2.00			0.78
pr10 Perceived risk of friends objecting to becoming a blood donor.		0.83	0.91	
pr9 Perceived risk of family objecting to becoming a blood donor.		0.70	0.83	
pr4 Perceived risk of religious community objecting to becoming a blood donor.		0.65	0.80	
<b>Health Risk</b>	1.27			0.71
pr5 Perception of health risk associated with associated with donating blood, due to unsafe medical procedures.		0.75	0.85	
pr1 Perceived risk of contracting AIDS when donating blood.		0.74	0.84	

The first factor was named "inconvenience risk", since the high loading items related to some sort of inconvenience associated with making a donation. These items seem to suggest that respondents viewed inconvenience in a broader sense than location and time. More specifically, the inclusion of items relating to the risk of negative health effects, such as dizziness and pain and discomfort, may indicate that these are inconveniences associated with blood donation. The second factor related to the risk of respondents' friends, family and religious community objecting to their becoming blood donors and, as such, was named "social risk". The last factor was termed "health risk" as it related to the health risks associated with donating blood.

### **5.2.3 Values**

A principal components factor analysis was undertaken using the LOV items (Section 4). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970) was 0.81, which Stewart (1981) termed "meritorious". The analysis found a single factor that explained 47% of the variance in the data, and the results are shown in Table 5.8.

<b>Table 5.8 Factor Analysis of Value Items</b>				
<b><u>Factor/ Item</u></b>	<b><u>Eigen-value</u></b>	<b><u>Comm-unality</u></b>	<b><u>Loading</u></b>	<b><u>Coeff. Alpha</u></b>
<b><u>Values</u></b>	3.28			0.79
4.8 Self-respect.		0.59	0.77	
4.5 Being well respected.		0.55	0.74	
4.9 A sense of accomplishment.		0.51	0.71	
4.4 Self-fulfillment.		0.48	0.70	
4.7 Security.		0.44	0.67	
4.3 Warm relationships with others.		0.38	0.61	
4.1 Sense of Belonging.		0.32	0.56	

This result was surprising since values are often considered to be multidimensional. More specifically, several studies have found two underlying LOV factors, and that the distinction relates to internal or external locus of control (Rotter, 1966; Kahle, 1983). These studies found that the external dimension included items relating to a sense of belonging (4.1); being well respected (4.5); and security (4.7), while the internal dimension included the remaining items. However, it should be noted that not all studies have made similar findings. For example, Homer and Kahle (1988), identified three dimensions, as the internal dimension split into two, with one related to individual values, including self-fulfillment (4.4); excitement (4.2); sense of accomplishment (4.9); and self-respect (4.8), and the other related to interpersonal values, including fun and enjoyment in life (4.6) and warm relationships with others (4.3). This seems to add support to the suggestion that the factor structure of values may be contextual (Kahle et al, 1986). While the current study identified one dimension, it may be that this is typical of the value structure in peoples' minds when they are thinking about blood donation. It was interesting to note that the values omitted from the dimension related to fun and enjoyment of life and excitement, perhaps indicating the perceived gravity of the blood donation issue in peoples' minds. Given the general nature of the items loading on to the factor, it was named simply "values".

### **5.3 Confirmatory Investigation of the Model Constructs**

A confirmatory factor analysis was initially conducted, using all of the items representing each of the model constructs. The high chi-square value obtained indicated that the model's fit to the data was poor (chi-square = 1696.17,  $df = 427$ ,  $p = 0.00$ ). However, this statistic can be misleading because of its sensitivity to sample size (Bentler and Bonett, 1980; Joreskog and Sorborn, 1989). For instance, it has been suggested that, "in very large samples almost any model with positive degrees of freedom is likely to be rejected as providing a statistically unacceptable fit" (Long 1983, p.75). Further, it seems that a sample size of 200 is sufficient to reduce the risk of drawing erroneous conclusions (Boomsma, 1982). Since the sample used in the current study was over twice this size (513), it was concluded that the chi-square statistic might not be a reliable indicator of goodness of fit. Therefore, other goodness of fit indices that are not dependent on sample size were examined. These also indicated that the fit was poor, with the Adjusted Goodness of Fit Index (AGFI) the Normed Fit Index (NFI) having values of 0.79 and 0.74 respectively. Since models with overall fit indices of less than 0.90 are felt to not fit well and can usually be improved (Bentler and Bonett, 1980), it was clear that the model did not fit the data well.

As a result, each construct of the model was examined separately, using a one factor congeneric model for the unidimensional values construct and confirmatory factor analyses for the multidimensional perceived risk and attitudes constructs. As mentioned in section 4.5, this method is consistent with the two step-approach that has been proposed in the literature, where



the component of the model relating to the fit of the observed variables to the latent variables (measurement model) is assessed before the component of the model that relates to the structural relationships between the latent variables (structural model) is assessed (James, Mulaik and Brett, 1982; Mulaik et al, 1989; Sweeney, 1995). The purpose of these analyses was to assess the reliability of the items representing the model constructs and to examine the validity of these constructs.

### **5.3.1 One Factor Congeneric Model for the Values Construct**

The values construct did not seem to fit a one factor model, with both the AGFI and NFI having values of 0.86. An examination of the reliability scores for individual items suggested that a sense of belonging, warm relationships with others and security were creating the problems with reliability, with reliability scores ranging from 0.20 to 0.35. As these items seemed to represent another dimension of values relating to relationships with others, a confirmatory factor analysis was undertaken on a new model that had these items loading onto a second dimension of values. This model was also a poor fit, with AGFI and NFI values of 0.86 and 0.87 respectively. Further, some items still had low reliabilities, ranging from 0.26 to 0.39. These items were removed from the values scale and a one factor congeneric model was tested using the remaining items. This analysis suggested that the model fitted the data, with appropriate goodness of fit statistics including a non-significant chi-square value, as well as acceptable reliabilities, as shown in Table 5.9. The items in this model were used to represent the values construct in subsequent analysis.

**Table 5.9 One Factor Congeneric Model of Values**

<u>Item</u>	<u>Item Reliability</u>	<u>Scale Reliability</u>
4.4 Self-fulfillment.	0.57	
4.5 Being well respected.	0.53	
4.8 Self-respect.	0.60	
4.9 A sense of accomplishment.	0.62	0.76
<b><u>Goodness of Fit Measures</u></b>		
Chi-square	3.95	
Degrees of Freedom	2	
Probability	0.14	
Goodness of Fit Index (GFI)	0.99	
Adjusted Goodness of Fit Index (AGFI)	0.98	
Normed Fit Index (NFI)	0.99	

### **5.3.2 Confirmatory Factor Analysis of Attitude Items**

The acceptability of the model was borderline, with an AGFI of 0.92 and a NFI of 0.89. Therefore, the reliabilities of the individual items were used to determine whether their removal could improve the model's fit. This revealed five items with low reliabilities, ranging from 0.21 to 0.39 and these items were removed. In addition, the reliability scores for the scales representing each of the dimensions of attitudes were assessed. This analysis found that the scale measuring "health concerns" (q3.8 and q3.2) had a low reliability of 0.59 and these items were also removed.

A second confirmatory factor analysis was undertaken on the remaining items; the results of which are shown in Table 5.10. The model fitted the data well, with AGFI and NFI values of 0.97 and 0.98 respectively. Further, the reliabilities of the scales and the individual items were good. These items were, therefore, selected to represent attitudes in subsequent analysis.

<b>Table 5.10 Confirmatory Factor Analysis of Attitudes</b>		
<b>Factor/Item</b>	<b>Item Reliability</b>	<b>Scale Reliability</b>
<b>Replacement and Assurance</b>		
3.19 People who have received a blood transfusion should be willing to become donors themselves.	0.76	
3.1 People who have been saved by a blood donation have a duty to repay the debt, by becoming blood donors themselves.	0.68	
3.12 People with others close to them who have received a blood transfusion, should be willing to become blood donors themselves.	0.62	0.82
<b>Psychological Fears</b>		
3.11 I am afraid of needles.	0.53	
3.7 I don't like the sight of blood.	0.53	0.70
<b>Inconvenience</b>		
3.22 Donating blood requires a lot of your time.	0.55	
3.31 Blood donors are put to a great deal of inconvenience.	0.55	0.71
<b>Goodness of Fit Measures</b>		
Chi-square	21.39	
Degrees of Freedom	11	
Probability	0.03	
Goodness of Fit Index (GFI)	0.99	
Adjusted Goodness of Fit Index (AGFI)	0.97	
Normed Fit Index (NFI)	0.98	

### **5.3.3 Confirmatory Factor Analysis of Perceived Risk Items**

The model tested was a poor fit, with an AGFI value of 0.83 and a NFI value of 0.87. An examination of the reliabilities of the individual items found that two items (experiencing pain and discomfort; suffering from negative health effects, such as dizziness) had very low reliability scores (0.23 and 0.21 respectively). Since these items represented a separate dimension of perceived risk relating to physical reactions associated with blood donation, another confirmatory factor analysis was undertaken, with these items loading on to a separate dimension. The results of this analysis, that are shown in Table 5.11, suggested the model was a good fit, with a non-significant chi-square value, as well as high values for the AGFI and NFI. Further, the reliabilities of the scales and the individual items were

acceptable. Therefore, these items were used to represent perceived risk in subsequent analysis. A new "reaction risk" dimension was included.

<b>Table 5.11 Confirmatory Factor Analysis of Perceived Risk</b>			
<b>Factor/Item</b>		<b>Item Reliability</b>	<b>Scale Reliability</b>
<b>Inconvenience Risk</b>			
pr7	Perceived risk that donating blood will cause inconvenience.	0.83	
pr14	Perceived risk that donating blood will take up a lot of time.	0.83	0.90
<b>Health Risk</b>			
pr5	Perception of health risk associated with associated with donating blood, due to unsafe medical procedures.	0.56	
pr1	Perceived risk of contracting AIDS when donating blood.	0.56	0.71
<b>Social Risk</b>			
pr10	Perceived risk of friends objecting to becoming a blood donor.	0.77	
pr9	Perceived risk of family objecting to becoming a blood donor.	0.62	
pr4	Perceived risk of religious community objecting to becoming a blood donor.	0.56	0.78
<b>Reaction Risk</b>			
pr13	Perceived risk of suffering from negative health effects, such as dizziness, as a consequence of donating blood.	0.58	
pr2	Perceived risk of experiencing pain and discomfort when donating blood.	0.58	0.73
<b>Goodness of Fit Measures</b>			
Chi-square		20.43	
Degrees of Freedom		21	
Probability		0.50	
Goodness of Fit Index (GFI)		0.98	
Adjusted Goodness of Fit Index (AGFI)		0.95	
Normed Fit Index (NFI)		0.97	

### **5.3.4 Conclusion**

Generally, the confirmatory investigation of the model constructs supported the findings of the exploratory investigation relating to the dimensionality of these. However, the confirmatory investigation found that the dimension of perceived risk relating to "inconvenience" identified in the exploratory investigation was made up of two dimensions, with one relating to the perceived risk of inconvenience in terms of time and location and the other

relating to the perceived risk of reaction associated with blood donation. Further, the confirmatory investigation led to the removal of unreliable items, resulting in improved reliabilities for the factors used in subsequent analyses.

## **Chapter Six**

### **Model Evaluation**

#### **6.1 Model Evaluation**

The overall model that was investigated in the current study (Model A) was assessed using the AMOS software package (Arbuckle, 1997). Details of the model, together with the analysis results, are shown in Table 6.1. The initial model did not meet minimum AGFI and NFI requirements, with values of 0.89 and 0.90 respectively. An examination of the modification indices failed to identify any conceptually justifiable modifications to the model that would be likely to significantly improve the model fit. However, an examination of the regression weights revealed that there were no significant relationships between social risk and any other model construct. Therefore, these items were removed and a further analysis was undertaken using the reduced model (Model B). The results of this analysis, also outlined in Table 6.1, suggested that the model was a good fit. However, the significant relationships between the two knowledge measures and the other model constructs were conceptually confusing. Given this, two alternative models were developed. One included only perceived knowledge (Model C) while the other included only objective knowledge (Model D). These models were analysed and the results are also shown in Table 6.1. It was found that the models with single measures of knowledge had a better fit than the model with both knowledge measures, and had better conceptual validity. The objective knowledge model had the best fit. It also seemed reasonable that the availability of detailed information about objective knowledge (section 5.1.3) would make

the results of the objective model more useful than those of the perceived knowledge model, since perceived knowledge was measured by a single global indicator. The objective knowledge model was, therefore, used in subsequent analysis and is shown in Figure 6.1.

Table 6.1 Comparison of Alternative Models					
Construct	Item	Model A	Model B	Model C	Model D
Values	Refer to Table 5.9	✓	✓	✓	✓
Perceived Knowledge	Q1	✓	✓	✓	-
Objective Knowledge	Q2	✓	✓	-	✓
Replacement	Refer to Table 5.10	✓	✓	✓	✓
Psychological Fears	Refer to Table 5.10	✓	✓	✓	✓
Inconvenience	Refer to Table 5.10	✓	✓	✓	✓
Reaction Risk	Refer to Table 5.11	✓	✓	✓	✓
Health Risk	Refer to Table 5.11	✓	✓	✓	✓
Social Risk	Refer to Table 5.11	✓	-	-	-
Inconvenience Risk	Refer to Table 5.11	✓	✓	✓	✓
Willingness to Donate	Q10	✓	✓	✓	✓
<b>Goodness of Fit Measures</b>					
Chi-square		367.99	206.27	171.77	185.44
Degrees of Freedom		180	130	119	119
Probability		0.00	0.00	0.00	0.00
Goodness of Fit Index (GFI)		0.93	0.95	0.96	0.96
Adjusted Goodness of Fit Index (AGFI)		0.89	0.93	0.94	0.93
Normed Fit Index		0.90	0.93	0.94	0.94
Root Mean Residual (RMR)		1.08	1.22	1.22	0.98

## 6.2 Measurement Model Results

The relationships between the observed variables and the latent variables they represent, sometimes referred to as the measurement model, are shown in Table 6.2. As expected these showed that the regression weights were statistically significant, supporting the results of the confirmatory investigation of the model constructs reported in sections 5.2 and 5.3.

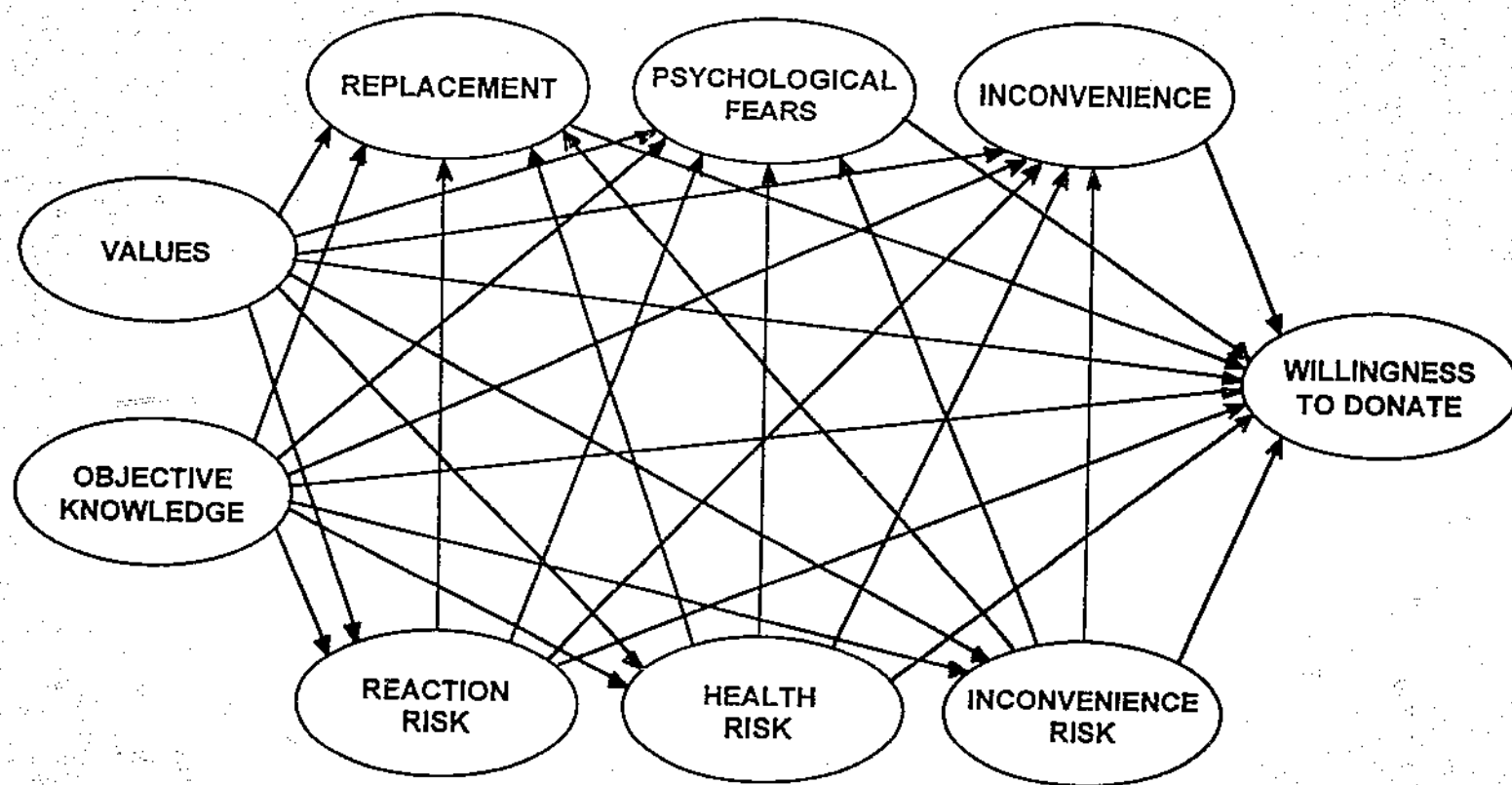


Figure 6.1 Objective Knowledge Model of Willingness to Donate Blood (Model D)



**Table 6.2 Measurement Model Results**

<b>Construct / Indicator</b>		<b>Standardised Regression Weight</b>	<b>Critical Ratio</b>
<b>Values</b>			
4.4	Self-fulfillment.	0.69*	
4.5	Being well respected.	0.60	10.30 <sup>†</sup>
4.8	Self-respect.	0.72	11.80 <sup>†</sup>
4.9	A sense of accomplishment.	0.72	11.79 <sup>†</sup>
<b>Inconvenience Risk</b>			
pr7	Perceived risk that donating blood will cause inconvenience.	0.91*	
pr14	Perceived risk that donating blood will take up a lot of time.	0.93	26.31 <sup>†</sup>
<b>Health Risk</b>			
pr5	Perception of health risk associated with associated with donating blood, due to unsafe medical procedures.	0.71*	
pr1	Perceived risk of contracting AIDS when donating blood.	0.84	13.92 <sup>†</sup>
<b>Reaction Risk</b>			
pr13	Perceived risk of suffering from negative health effects, such as dizziness, as a consequence of donating blood.	0.69*	
pr2	Perceived risk of experiencing pain and discomfort when donating blood.	0.84	9.15 <sup>†</sup>
<b>Replacement and Assurance</b>			
3.19	People who have received a blood transfusion should be willing to become donors themselves.	0.90*	
3.1	People who have been saved by a blood donation have a duty to repay the debt, by becoming blood donors themselves.	0.79	15.67 <sup>†</sup>
3.12	People with others close to them who have received a blood transfusion, should be willing to become blood donors themselves.	0.67	12.83 <sup>†</sup>
<b>Psychological Fears</b>			
3.11	I am afraid of needles.	0.79*	
3.7	I don't like the sight of blood.	0.68	10.41 <sup>†</sup>
<b>Inconvenience</b>			
3.22	Donating blood requires a lot of your time.	0.75*	
3.31	Blood donors are put to a great deal of inconvenience.	0.74	13.33 <sup>†</sup>

\* The first path for each construct was set to 1 therefore, no critical ratio's are given.

<sup>†</sup>  $p \leq 0.05$

### **6.3 Structural Model Results**

The structural model results show the relationships between the model constructs and, as such, are concerned with the hypothesised relationships that were investigated in the current study. Table 6.3 outlines the hypothesised relationships between the model constructs and shows the

estimated parameter coefficients for each of these. Figure 6.2 shows the final model containing the supported hypothesised relationships.

Table 6.3 Structural Model Results				
Hypothesis	Relationship and Expected Sign (+ or -)	Standardised Parameter Coefficient	Critical Ratio	Supported
1	<u>Values <math>\Rightarrow</math> Attitudes</u>			✓
	Values $\Rightarrow$ Replacement (+)	0.15	2.69*	
	Values $\Rightarrow$ Psychological Fears (+)	0.06	1.11	
	Values $\Rightarrow$ Inconvenience (+)	0.10	2.04*	
2	<u>Values <math>\Rightarrow</math> Perceived Risk</u>			-
	Values $\Rightarrow$ Reaction Risk (-)	-0.11	-1.84	
	Values $\Rightarrow$ Health Risk (-)	-0.02	-0.44	
	Values $\Rightarrow$ Inconvenience Risk (-)	-0.09	-1.69	
3	<u>Values <math>\Rightarrow</math> Willingness to Donate</u>	-0.04	-0.83	-
4	<u>Objective Knowledge <math>\Rightarrow</math> Perceived Risk</u>			✓
	Objective Knowledge $\Rightarrow$ Reaction Risk (+)	-0.16	-2.90*	
	Objective Knowledge $\Rightarrow$ Health Risk (+)	-0.40	-6.61*	
	Objective Knowledge $\Rightarrow$ Inconvenience Risk (+)	-0.20	-4.04*	
5	<u>Objective Knowledge <math>\Rightarrow</math> Attitudes</u>			-
	Objective Knowledge $\Rightarrow$ Replacement (+)	-0.00	-0.01	
	Objective Knowledge $\Rightarrow$ Psychological Fears (+)	0.10	1.74	
	Objective Knowledge $\Rightarrow$ Inconvenience (+)	0.10	2.07*	
6	<u>Objective Knowledge <math>\Rightarrow</math> Willingness to Donate</u>	0.14	2.68*	✓
7	<u>Perceived Risk <math>\Rightarrow</math> Attitudes</u>			✓
	Reaction Risk $\Rightarrow$ Replacement (-)	-0.15	-1.76	
	Reaction Risk $\Rightarrow$ Psychological Fears (-)	-0.94	-8.67*	
	Reaction Risk $\Rightarrow$ Inconvenience (-)	0.05	0.69	
	Health Risk $\Rightarrow$ Replacement (-)	0.03	0.40	
	Health Risk $\Rightarrow$ Psychological Fears (-)	0.17	2.14*	
	Health Risk $\Rightarrow$ Inconvenience (-)	0.00	0.06	
	Inconvenience Risk $\Rightarrow$ Replacement (-)	-0.09	-1.30	
	Inconvenience Risk $\Rightarrow$ Psychological Fears (-)	0.35	4.57*	
	Inconvenience Risk $\Rightarrow$ Inconvenience (-)	-0.83	-12.21*	
8	<u>Attitudes <math>\Rightarrow</math> Willingness to Donate</u>			✓
	Replacement $\Rightarrow$ Willingness to Donate (+)	0.14	2.48*	
	Psychological Fears $\Rightarrow$ Willingness to Donate (+)	0.27	2.14*	
	Inconvenience $\Rightarrow$ Willingness to Donate (+)	0.10	0.77	
9	<u>Perceived Risk <math>\Rightarrow</math> Willingness to Donate</u>			✓
	Reaction Risk $\Rightarrow$ Willingness to Donate (-)	0.24	1.46	
	Health Risk $\Rightarrow$ Willingness to Donate (-)	-0.18	-2.47*	
	Inconvenience Risk $\Rightarrow$ Willingness to Donate (-)	-0.18	-1.19	

\*  $p \leq 0.05$

### **6.3.1 The Influence of Constructs on Willingness to Donate**

#### **Hypotheses 3, 6, 8 and 9**

It was found that people's values had no significant influence over willingness to donate (standardised path coefficient -0.04) and H3 was therefore, rejected. It should be noted that Horton and Horton's (1991) study into the decision to sign an organ donor card had a similar result.

Objective knowledge had a significant positive influence over willingness to donate (0.14), implying that willingness to donate increased as objective knowledge increased and so, H6 was accepted.

The perceived risks of reaction and inconvenience associated with blood donation had no significant influence over willingness to donate (0.24 and -0.18 respectively). However, the perceived health risk associated with blood donation had a significant influence over willingness to donate (-0.18), such that willingness to donate declined as the perceived health risk increased. As a result, H8 was accepted. While the findings that perceived reaction and inconvenience risks do not significantly influence willingness to donate may seem to contradict Allen and Butler's (1993) findings that perceived risk directly influences willingness to donate, their study did not report the relationships between the individual types of perceived risk and willingness to donate and, as such, it is not possible to compare the results of both studies.

While it was found that attitudes about the inconvenience associated with blood donation had no significant influence over willingness to donate (0.10), attitudes regarding the replacement of blood and the psychological fears associated with blood donation had a significant positive influence over willingness to donate (0.14 and 0.27 respectively), suggesting that people's willingness to donate was higher for people with favourable attitudes. As a result, H9 was accepted.

### **6.3.2 The Influence of Constructs on Attitudes**

#### **Hypotheses 1, 5 and 7**

While attitudes about the psychological fears associated with blood donation were not significantly influenced by values (0.06), values had a significant positive influence on attitudes about the replacement of blood (0.15) and attitudes about the inconvenience of blood donation (0.10) and, therefore, H1 was accepted.

Objective knowledge about blood donation had no significant effect over attitudes regarding the replacement of blood (-0.00), or attitudes regarding the psychological fears associated with blood donation (0.10). However, a significant positive relationship was found between objective knowledge and attitudes about the inconvenience of blood donation (0.10), meaning that willingness to donate increased as these attitudes became more favourable. Therefore, H5 was accepted.

Attitudes regarding the replacement of blood were not significantly influenced by any of the perceived risks associated with blood donation, namely: reaction risk (-0.15); health risk (0.03); and inconvenience risk (-0.09). However, significant relationships were found between attitudes regarding psychological fears associated with blood donation and the perceived reaction risk (-0.94), health risk (0.17) and inconvenience risk (0.35) associated with donating blood. It was interesting to note that, while significant relationships were found between the perceived health and inconvenience risks and psychological fear attitudes, these relationships were not in the expected direction. More specifically, the relationships suggested that these attitudes became more favourable as the perception of these risk increased. The perception of reaction and health risks associated with blood donation had no significant influence over inconvenience attitudes (0.05 and 0.00 respectively) however, these attitudes were significantly influenced by the perceived risk of inconvenience associated with blood donation (-0.83), meaning that they became less favourable as the perception of this risk increased. Since attitudes regarding psychological fears and inconvenience were significantly influenced by the perceived risks of reaction and inconvenience respectively, H7 was accepted.

### **6.3.3 The Influence of Constructs on Perceived Risk**

#### **Hypotheses 2 and 4**

Values had no significant influence over any of the perceived risks associated with blood donation, namely: reaction risk (-0.11); health risk (-0.02); and inconvenience risk (-0.09). As a result, H2 was rejected.

Knowledge had a significant negative influence over each of the types of perceived risk associated with blood donation, namely: reaction risk (-0.16); health risk (-0.40); and reaction risk (-0.20), meaning that the perception of these risks declined as objective knowledge about blood donation increased. Therefore, H4 was rejected.

### **6.3.4 Total Effects of Constructs**

In addition to assessing the direct effects that various model constructs have on other constructs, it is necessary to examine the total effects of each construct. Total effects are useful because they include the indirect effects as well as the direct effects and as such, provide a better indication of the overall importance of each construct. The total effects are shown in Table 6.4.

It seems that attitudes regarding the psychological fears associated with blood donation have the greatest total influence over willingness to donate (total effect of 0.57), followed by attitudes regarding the replacement of blood (0.32). Objective knowledge also had an important influence over willingness to donate, with a total effect of 0.24. The total effect of objective

Table 6.4 Total Effects on Endogenous Constructs									
Effect of $\Rightarrow$ on $\downarrow$	Values	Objective Knowledge	Health Risk	Reaction Risk	Inconven- ience Risk	Replacement	Psycholog- ical Fears	Inconvenience	SMC*
Health Risk	-0.31 (-0.44) <sup>†</sup>	-0.74 (-6.61)	-	-	-	-	-	-	0.16
Reaction Risk	-1.45 (-1.83)	-0.31 (-2.90)	-	-	-	-	-	-	0.04
Inconvenience Risk	-1.25 (-1.69)	-0.41 (-4.04)	-	-	-	-	-	-	0.05
Replacement	0.42 (2.68)	0.01 (0.01)	0.01 (0.40)	-0.03 (-1.76)	-0.02 (-1.30)	-	-	-	0.07
Psychological Fears	0.35 (1.11)	0.05 (1.74)	0.04 (2.14)	-0.19 (-8.67)	0.07 (4.57)	-	-	-	0.58
Inconvenience	0.29 (2.04)	0.07 (2.07)	0.00 (0.06)	0.01 (0.69)	-0.10 (-12.21)	-	-	-	0.70
Willingness to Donate	0.15 (0.83)	0.24 (2.68)	-0.06 (-2.47)	0.01 (1.46)	-0.08 (-1.19)	0.32 (2.48)	0.57 (2.14)	0.34 (0.77)	0.18

\* SMC = Squared Multiple Correlation for Structural Equations

† Critical Ratios in Brackets

knowledge was greater than its direct effect due to its indirect effects through the mediating variables of perceived reaction risk, perceived health risk and psychological fears attitudes.

Table 6.4 also includes the squared multiple correlations for all structural equations (SMC). The SMC relating to psychological fears associated with blood donation (0.58) indicates that a high level of the variance in these attitudes was explained by the antecedents to these. However, the low SMC for willingness to donate (0.18) seems to indicate that willingness to donate is influenced by factors that were not included in the current model.

#### **6.4 Final Model of Willingness to Donate**

Following the examination of the structural model results, all non-significant relationships were removed from the model and the resulting model was re-tested. As expected, the results suggested that this model was a good fit and was better than Model D, which contained non-significant paths. This model, together with goodness of fit indices and standardised parameter coefficients is shown in Figure 6.3.



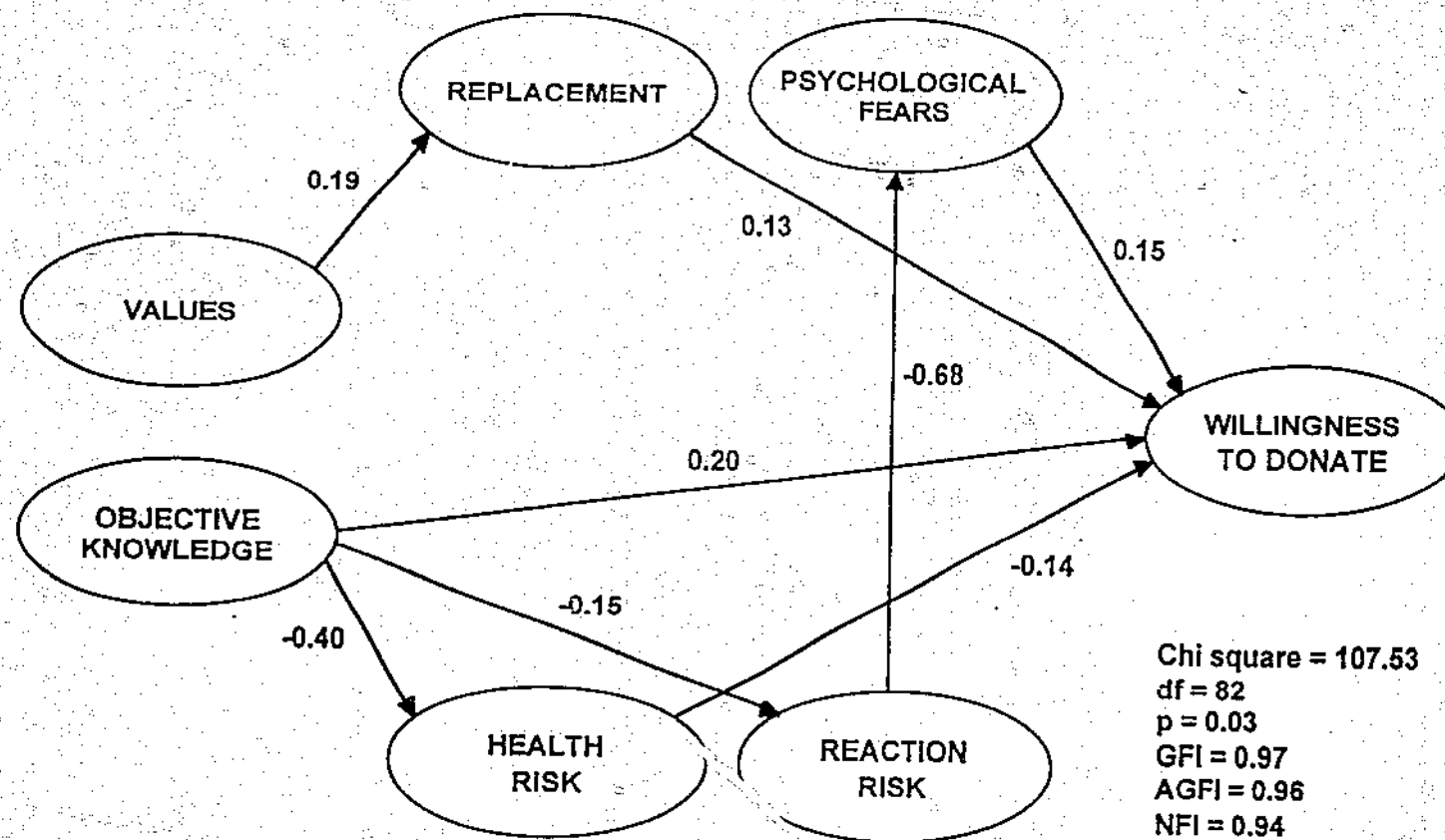


Figure 6.2 Final Model of Willingness to Donate Blood

## **Chapter Seven**

### **Conclusions, Limitations and Implications**

#### **7.1 Conclusions**

The current study provided support for many of the hypothesised relationships between the variables that influence willingness to donate blood. While values had no direct effect on people's willingness to donate, they had an important indirect influence through their effects on replacement and assurance attitudes. More specifically, as the value items became more important, attitudes regarding blood donation as a duty to replace used stocks and assure future supplies became more favourable. These attitudes were important, since it was found that willingness to donate increased as they became more favourable. These findings were consistent with those of Horton and Horton (1993), who found that the relationship between values and willingness to become an organ donor were mediated by attitudes towards organ donation. Further, the positive relationship between replacement attitudes and willingness to donate adds support to the findings in the literature that these attitudes are an important motivator to blood donation (Boe, 1973; Burnett, 1982).

A strong, positive relationship was found between the level of knowledge and willingness to donate. Knowledge also influenced willingness to donate indirectly, through its effects on perceived risk. The perceived health risk (e.g. catching AIDS) and reaction risk (e.g. fainting) associated with donating blood were inversely related to knowledge, such that an increase in knowledge led to a reduction in perceived risk. The current study did not

support Allen and Butler's (1993) finding that the perceived risk associated with blood donation increased as knowledge about blood donation increased. It should be noted, however, that Allen and Butler's (1993) findings were unusual since it is generally accepted that individuals may seek information as a means of reducing perceived risk and that as such, knowledge and perceived risk are inversely related (Capon and Burke, 1980; Schaninger and Sciglimpaglia, 1981).

The level of perceived risk was important since it, in turn, had a significant effect on willingness to donate. Perceived health risk directly influenced willingness to donate as this declined as the perceived health risk increased. The perceived reaction risk influenced willingness to donate indirectly through attitudes relating to the psychological fears associated with blood donation. More specifically, as perceived reaction risk increased, these attitudes became less favourable and, as attitudes became less favourable, willingness to donate declined. These findings are consistent with previous research that suggests psychological and physical fears are common deterrents to blood donation (Oswalt, 1977; Pilliavin, 1990; Oswalt and Gordon, 1993).

The current study extended Allen and Butler's (1993) model of intentions to donate blood, by adding values and attitudes constructs, taken from Horton and Horton's (1993) model of the related decision to sign an organ donor card. Further, the current study examined the effects of perceived risk and

attitudes in more detail, by investigating the effects of each of the dimensions of these constructs over willingness to donate blood.

### **7.2 Limitations of the Research**

A number of the limitations of the research are linked to sampling issues. First, since the sample was drawn from only from the Perth metropolitan area, it is not possible to generalise the findings to the whole population of the State. Second, as the sample was drawn using Oz on Disk (CD-ROM version of the White Pages), those households with silent numbers or without telephones were not included in the sampling process.

It should also be noted that the sample of respondents who returned useable questionnaires was significantly different from the population in regard to a number of important characteristics. The most significant of these related to the education level and past donation behaviour patterns of respondents. For instance, the level of education within the sample was far higher than for the population as a whole. Further, there was a much higher proportion of current blood donors within the sample than there is within the population. Once again, it is not possible to generalise the results of the study to the population as a whole.

### **7.3 Implications for Blood Collection Agencies**

An important finding of the current study was that willingness to donate blood declined significantly as the perceived health and reaction risks associated with blood donation increased. Therefore, there is clearly a need

for blood collection agencies to minimise the perception of these risks within the community. While the current study suggested that the sample perceived these risks to be low, this may be misleading due to the bias within the sample in favour of blood donors. More specifically, it seems reasonable to expect that the levels of perceived risk would be lower among blood donors than for the population and, therefore, it could be argued that the levels of perceived reaction and health risks within the population are higher than indicated in the current study.

In addition to highlighting the importance of minimising levels of perceived risk, the study provided valuable insights as to how this may be achieved, by finding that levels of perceived reaction and health risks declined as knowledge about blood donation increased. Given this, it can be argued that any attempts to reduce levels of perceived risk should include a strategy aimed at increasing the community's knowledge about blood donation. While the current study found that the level of knowledge within the sample was not high, it may be suggested that this is not an accurate indication of the level of knowledge within the population and that the true level of knowledge within the community is lower than this. This is because the sample was biased in favour of blood donors and because the level of education within the sample was higher than for the population. It seems reasonable to expect that the level of knowledge for the sample would be higher than for the population as a whole. However, notwithstanding this limitation of the current study, some important deficiencies in knowledge were identified.

First, only a small proportion of respondents knew that nobody in Australia had ever acquired AIDS as a result of donating blood. Second, a large proportion of respondents were unaware that blood donors would be given an anaesthetic if they required one. These were considered to be extremely important because of their likely impact on the levels of perceived health and reaction risk, since the perceived health risk included the risk of catching AIDS and the perceived reaction risk included the risk of experiencing pain. In other words, it seems reasonable to assume that the levels of perceived health and reaction risk within the community are in part, a consequence of a lack of knowledge in these areas.

The study also highlighted other gaps in knowledge, relating to who were eligible to donate, that were considered to be important due to the direct and positive effect knowledge had over willingness to donate. The most significant of these related to the lack of awareness that people under the age of 18 can donate blood. One possible implication may be that a large pool of potential donors may not donate simply because they are unaware that they are able to do so. There are a number of deficiencies in people's knowledge about blood donation that may have an adverse effect on their willingness to donate. Any attempts by blood collection agencies to increase blood donations should address these deficiencies. This is even more critical if the level of knowledge among the population is lower than for the sample used in this study.

While the discussion so far has focused on how blood collection agencies can increase blood donations by minimising the barriers to donation, the study also provided information as to how donations could be increased by tapping into those factors that act as motivators to donation. This relates to the findings that attitudes about blood donation as a duty or responsibility to replace used blood and assure future supplies had a positive influence on willingness to donate, and that these attitudes were influenced by a person's values. More specifically, the study found that these attitudes were influenced by values relating to self-fulfillment, being well-respected, self-respect, and a sense of accomplishment. These attitudes could be made more favourable and willingness to donate increased, by developing communication messages that present blood donation as an act that is consistent with the attainment of these values.

In summary, any strategy designed to increase blood donation rates needs to include components that minimise the effect of barriers to donation as well as appealing to those factors that serve as motivators to donation. Barriers that were identified in the study included attitudes regarding the psychological fears associated with donating blood, levels of perceived health and reaction risks associated with donation, and deficiencies in knowledge about certain aspects of blood donation. Since knowledge was found to influence willingness to donate directly and indirectly through these perceived risks and attitudes, attempts to minimise the effects of these barriers should focus on developing an education campaign that addresses people's knowledge.

Blood collection agencies could also increase willingness to donate by presenting blood donation as an act that is consistent with the attainment of those values relating to self-fulfillment, being well-respected, self-respect, and a sense of accomplishment.

#### **7.4 Implications for Future Research**

Since the current study highlighted the need to reduce the levels of perceived health and reaction risks associated with blood donation within the community, future research should investigate the relationships between these types of risk and specific risk relievers, such as information acquisition and word of mouth communication. This would identify those risk relievers that are most likely to be used by individuals to reduce levels of perceived risk associated with blood donation and, as such, would enable blood collection agencies to develop effective communication programmes that incorporate these risk relievers.

Further, since the constructs in the model did not explain a large proportion of the variance in willingness to donate, it seems reasonable to assume that willingness to donate blood is influenced by other factors that were not included in the model. As such, future research should attempt to identify such factors.



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## **Appendix A**

### **Focus Groups**

#### **A.1 Introduction**

Focus groups were conducted to supplement the literature review and assist in developing an understanding of those factors that influence people's willingness to donate blood, as well as in the development of specific questionnaire items. The following sections outline the methods used to recruit participants and conduct the sessions, followed by a discussion of the findings.

#### **A.2 Methodology**

##### **A.2.1 Recruiting the Participants**

Since it was expected that cultural issues may have an important role to play in the discussion of blood donation, and given the multicultural nature of Australian society, it was considered appropriate that people from distinct cultural backgrounds should be given the opportunity to participate in the focus groups. Further, as the discussions were expected to touch on issues of a personal nature, it was decided to keep the cultural groups separate when conducting the sessions, since it was believed this would create an atmosphere that would be more conducive to the discussion. Separate sessions were conducted for groups of people with Aboriginal, Asian and non-Asian/ non-Aboriginal backgrounds.

The population used to recruit the participants for the Asian and non-Asian/ non-Aboriginal groups consisted of students from the School of

Management and Marketing at Curtin University's Bentley campus. Since Aboriginal students represented a small proportion of this population, participants for this group were recruited from a population in which they were well represented, namely students at the School of Aboriginal Studies.

It was decided to conduct three sessions, one for each of the cultural groups, with each session consisting of between 8 and 10 participants. The method used to recruit the participants involved approaching students from each population at the beginning of conveniently selected lectures, providing a brief description of the research project and asking for volunteers. This yielded 11 volunteers for the Aboriginal group, 13 for the Asian group and 11 for the non-Asian/ non-Aboriginal group. Each volunteer was contacted by telephone one week prior to the scheduled session and again a few days before to confirm their intentions to attend. The sessions for the Asian and non-Asian/ non-Aboriginal groups were conducted as planned, with 9 and 8 participants attending respectively. However, none of the volunteers from the Aboriginal group arrived at the specified location. Since resources were limited, no further efforts were made to organise another session for this group.

#### **A.2.2 Conducting the Sessions**

The sessions differed from the standard focus group format in that they involved the use of a Group Decision Support System (GDSS) (Soutar, Whitely and Callan, 1996). A GDSS is a computer based tool designed to increase the effectiveness of group discussions and decision making by

overcoming some of the problems associated with groups, such as pressure for conformity, leading to a lack of creativity (Chung and Ferris, 1981; Janis, 1981); and a tendency for discussions to go off on a tangent and lose focus (Lewis, 1992). The GDSS attempts to achieve this goal by integrating computer technologies with techniques developed to deal with these problems, including Brainstorming (Osborn, 1963) and the Nominal Group Technique (Delbecq et al 1975).

During the sessions, each group member was assigned their own microcomputer, which they used to input their contribution to the discussion. These were linked to a central machine that was operated by the "chauffeur" and was responsible for running the software, as well as for collecting and processing the input from individual participants and combining these into a group product. The computers were arranged in a U shape, with a public view screen at the open end that was used to display the group's output. In addition to the chauffeur, a facilitator was present to guide the discussion. Therefore, with the exception that computers were used to collect and organise input, the sessions followed a similar format to a normal focus group. However, the GDSS had a number of advantages over the traditional focus group. One such advantage was the system's ability to provide participants with anonymity, since they all provided input at the same time and, therefore, there was no way of linking specific ideas and comments to specific people. This helped to reduce the pressure to conform, and, hopefully led to more creativity during the sessions. Another advantage is that it is possible to organise and display the points raised during the



brainstorming session on the public view screen. This helps to keep the discussion focused on the relevant issues and to ensure that each issue received adequate attention during the discussion. In addition, the system's ability to generate immediate reports of the meeting's progress and outcomes reduced the administrative tasks involved in conducting the sessions.

The first stage in the sessions involved asking respondents to brainstorm the issues that came to mind when thinking about blood donation. The input from this stage was organised into a group product that formed the guiding structure for the remainder of the session, with this being displayed on the view screen and each issue being discussed in turn. Finally, the system generated a report of the outcome of each session, highlighting the issues raised during the brainstorming, as well as the points raised during the discussion.

### **A.3 Findings**

The results of both sessions were similar, with the discussion dealing with the two broad issues of motivators and deterrents to donation. Further, participants generally talked about the same issues as are dealt with in the blood donation literature. For instance, when discussing why people donate blood, the points raised included such things as feeling good about yourself, a sense of duty, peer pressure, saving a life and assuring a blood supply in case you ever need a blood transfusion. The reasons for not donating included mistrust of the procedures used by blood banks and the

possible consequences of unsafe procedures, religious beliefs, selfishness, inconvenience and unsuitability to donate.

While the sessions did not highlight any new issues, they added support to previous blood donation research. In addition, they provided an in-depth understanding of many of the issues, which proved helpful when developing specific items for the final questionnaire.

## **Appendix B**

### **Supporting Literature Used to Develop Specific Questionnaire Items**

#### **Questionnaire Items**

##### **Knowledge**

##### **Collection and Testing Procedures**

#### **Supporting Literature**

Allen and Butler (1993)  
 Allen and Maddox (1990)  
 Australian Red Cross Blood Transfusion  
 Service (1992)  
 Bhopal et al (1992)  
 Chetwynd (1991)  
 Chliaoutakis et al (1994)  
 Dab et al (1989)  
 Fogarty (1990)  
 Jones et al (1989)  
 LoBello (1990)

##### **Eligibility to Donate**

Allen and Butler (1993)  
 Allen and Maddox (1990)  
 Australian Red Cross Blood Transfusion  
 Service (1992)  
 Chliaoutakis et al (1994)  
 Pindyck et al (1987)

##### **Religious Support for Donation**

Cleveland and Johnson (1970)  
 Horton and Horton (1990)  
 Okpara (1989)

##### **Time Required to Donate**

Australian Red Cross Blood Transfusion  
 Service (1992)  
 Hoston et al (1981)  
 Chliaoutakis et al (1994)  
 Oswalt and Zack (1976)  
 Pilliavin (1990)

##### **Where and When to Donate**

Australian Red Cross Blood Transfusion  
 Service (1992)  
 Chliaoutakis et al (1994)  
 Drake et al (1982)  
 Pilliavin (1990)

##### **How Often One Can Donate**

Australian Red Cross Blood Transfusion  
 Service (1992)  
 Chliaoutakis et al (1994)

##### **Need for Blood**

Australian Red Cross Blood Transfusion  
 Service (1992)  
 Leibrecht et al (1976)  
 Mell (1979)  
 Tucker (1987)

##### **Payment for Blood**

Australian Red Cross Blood Transfusion  
 Service (1992)

**Questionnaire Items****Attitudes****Altruism and Humanitarianism:**

Osborne and Bradley (1975)  
 Osborne et al (1978)  
 Oswalt and Gordon (1993)  
 Oswalt and Napoliello (1974)  
 Pilliavin et al (1984)  
 Staalekker et al (1980)

**Incentive/ Reward:**

Chliaoutakis et al (1994)  
 Condie (1979)  
 Ferrari et al (1985)  
 Oswalt and Gordon (1993)

**Replacement/ Assurance:**

Boe (1973)  
 Burnett (1982)  
 London and Hemphill (1965)  
 Phillips (1961)

**Social and Religious Issues:**

Cleveland and Johnson (1970)  
 Condie et al (1976)  
 Drake et al (1982)  
 Horton and Horton (1990)  
 McCombie (1991)  
 Okpara (1989)  
 Oswalt and Gordon (1993)

**Fear:**

Bartel et al (1975)  
 Boe (1976)  
 Boe and Ponder (1981)  
 Edwards and Zeichner (1985)  
 Leibrecht et al (1976)  
 LoBello (1990)  
 London and Hemphill (1965)  
 Osborne and Bradely (1975)  
 Osborne et al (1978)  
 Oswalt and Gordon (1993)  
 Oswalt and Napoliello (1974)

**Suitability to Donate:**

Allen and Butler (1993)  
 Boe and Ponder (1981)  
 Gibson (1980)  
 Leibrecht et al (1976)  
 Miller and Weikel (1974)  
 Oswalt and Gordon (1993)

**Apathy:**

Leibrecht et al (1976)  
 Oswalt and Gordon (1993)  
 Oswalt and Hoff (1975)  
 Oswalt and Napoliello (1974)  
 Phillips (1961)

**Inconvenience:**

Callero and Pilliavin (1983)  
 Hoston et al (1981)  
 Oswalt and Gordon (1993)  
 Oswalt and Zack (1976)  
 Paulhus et al (1977)

**Questionnaire Items**  
**Perceived Risk**

**Supporting Literature**

**Physical Risk:**  
 (AIDS; pain; dizziness; weakness)

Allen and Butler (1993)  
 Andaleeb et al (1995)  
 Bhopal et al (1992)  
 Chetwynd (1991)  
 Fogarty (1990)  
 Jones et al (1989)  
 Oswalt and Gordon (1993)  
 Robertson and McQueen (1994)

**Psychological Risk:**  
 (Religious beliefs, sight of blood;  
 needles; rejection.)

Allen and Butler (1993)  
 Dab et al (1989)  
 LoBello (1990)  
 Oswalt (1974)  
 Oswalt and Gordon (1993)  
 Pilliavin (1990)

**Social Risk:**  
 (Family; friends; religious group.)

Allen and Butler (1993)  
 Drake et al (1982)  
 McCombie (1991)  
 Pilliavin (1990)

**Time Risk:**

Allen and Butler (1993)  
 Drake et al (1982)  
 Hoston et al (1981)

## **Appendix C**

### **Development of the Attitude Scale**

#### **C.1 Exploratory study**

The first step in the process of developing the "attitude scale" was an examination of existing research in an effort to gain an understanding of the nature of blood donation attitudes. Following this, focus groups were conducted to better understand blood donation issues, as well as to assist in the generation of a sample of items that tapped into the various dimensions of the attitude construct. This process is consistent with the approach suggested and used to develop such measures (e.g. Churchill, 1979; Webster 1990).

#### **C.2 Data Collection**

The data for the scale's refinement were collected using a self-administered, structured questionnaire, which was distributed to a convenience sample of 100 summer school students from Edith Cowan University. A response rate of 85% was achieved.

#### **C.3 Scale Refinement**

##### **C.3.1 Developing a Feel for the Data**

Before any analyses were performed on the data, several items were removed from the data set, since it was felt that these issues were more closely related to issues dealt with by other constructs in the model. Those items removed related to knowledge about suitability as a donor and the



availability of blood; awareness of the need for blood; and willingness to accept blood transfusions.

Once these items had been removed, a series of descriptive statistics were obtained for the data, including frequency distributions, measures of central tendency and measures of dispersion. These provided an indication of the way respondents reacted to items in the survey, the effectiveness of the items to elicit a range of responses from respondents and to highlight input errors.

### **C.3.2 Preparing The Data for Analysis**

Since there were both favourable and unfavourable statements it was necessary to recode the unfavourable statements to ensure consistency in the scores, such that favourable responses received a high score and unfavourable responses a low score.

### **C.3.3 Data Analysis**

Principal components factor analysis was then used to determine the underlying structure of the data, using eigenvalues greater than one as the criterion for the extraction of factors. Initially, an 18 factor solution was extracted, explaining 78% of the variance in the data. An examination of the reliability scores for these factors using Cronbach's alpha, revealed that only the first nine factors had acceptable scores (0.85 to 0.57) after which, the scores dropped sharply.

Therefore, a second factor analysis was undertaken, specifying that only 9 factors were to be extracted. The resulting solution explained 57% of the variance in the data. Once again, reliability scores were calculated for each factor, with the results showing scores ranging from 0.85 to 0.50. In an effort to determine whether these scores could be improved upon by deleting items from each scale, item-to-total correlations were also calculated for each factor.

The item-to-total correlation coefficients were examined for each factor to determine which items provided the best measure for each dimension of the attitude construct. In an attempt to make the resulting scale as concise as possible, only the four items with the highest scores for each factor were retained, provided that each had a score over the minimum acceptable score of 0.30. As a result of this exercise, the 9th factor was dropped since it had a very low reliability score of 0.50, as well as extremely low item-to-total correlation coefficients, indicating that even the deletion of certain items would not produce a scale with a satisfactory reliability score.

Following this, reliability scores were recalculated for the remaining, reduced scales, with scores ranging from 0.85 to 0.63. While these are acceptable reliability scores, it was considered prudent to determine whether the reduced scales measured essentially the same as the originals, and that the quality of the scale had not been significantly compromised by deleting items. To achieve this, summated scales were created for each factor, both for the original, and the reduced scales. The



original and reduced scales for each factor were then correlated with each other, with the results showing correlation coefficients ranging from 0.93 to 0.76, indicating that the reduced scales were acceptable.

The final step in the analysis was to conduct another factor analysis using only those items retained in the reduced scales. The result was an 8 factor solution that explained 70% of the variance of the data, the details of which are shown in Table C1.

The first factor was made up of items that related to the humanitarian and altruistic nature of the act of donating blood and as such was named "altruism and humanitarianism". Since the items that loaded on to the second factor related to the issues of whether people who had benefited directly or indirectly from a blood donation had a duty to donate to replace that blood, and indeed whether healthy people in general had such a duty to donate merely to assure the blood supply, this factor was named "replacement and assurance". The third factor was named "cultural, religious and social barriers" since it consisted of items dealing with objections to blood donation from cultural, religious and social sources. The items loading on to the fourth factor related to concerns about catching AIDS during the donation process, as well as general concerns regarding the safety of blood collection procedures and was therefore named "health concerns". Factor five was named "psychological fears" since it represented items relating to psychological fears of hospitals; the sight of blood; and needles. Given that the items represented by factor six dealt with ways to

encourage more people to donate, it was named "incentive". Factor seven was named "inconvenience" , since it consisted of items dealing with the inconvenience associated with making a blood donation. Finally the eighth factor was named "fear of procedures" since it consisted of items relating to a fear of the actual procedures involved in making a donation. The content of the scale was considered to be acceptable since it tapped into all of the expected dimensions of blood donation attitudes.

#### **C.3.4 Reliability and Validity of the Scale**

The internal consistency of the attitudes scale was supported by the relatively high reliability scores for each dimension. In addition, the procedures used to specify the domain of the construct, and to generate the sample of items to measure this construct ensured that the scale measured what it set out to measure. As a result, the scale was also considered to possess content or face validity (Churchill, 1979; Webster, 1990).

**Table C.1 Factor Analysis Results of Attitude Items**

<b>Factor/ Item</b>	<b>Eigen-value</b>	<b>Comm-unality</b>	<b>Loading</b>	<b>Coeff. Alpha</b>
<b><u>Altruism and Humanitarianism</u></b>	<b>4.72</b>			<b>0.85</b>
Blood donors provide a valuable service to the community.		0.82	0.79	
Blood donations save lives.		0.76	0.77	
Blood donations provide sick people with a chance at a better life.		0.77	0.76	
Blood donation is like giving an anonymous gift of life.		0.76	0.76	
<b><u>Replacement and Assurance</u></b>	<b>3.07</b>			<b>0.78</b>
People who have received a blood transfusion should be willing to become donors themselves.		0.81	0.88	
People who have been saved by a blood donation have a duty to repay the debt, by becoming blood donors themselves.		0.76	0.79	
People with others close to them who have received a blood transfusion, should be willing to become blood donors themselves.		0.76	0.77	
Healthy people have a duty to donate.		0.60	0.62	
<b><u>Cultural, Religious and Social Barriers</u></b>	<b>2.40</b>			<b>0.75</b>
Society does not approve of blood donation.		0.67	0.79	
My friends object to blood donation.		0.69	0.73	
My culture does not approve of blood donation.		0.68	0.73	
Blood donation is against my religion.		0.54	0.70	
<b><u>Health Concerns</u></b>	<b>2.17</b>			<b>0.77</b>
Blood donors are at risk of contracting AIDS during the donation process.		0.78	0.87	
People should not donate blood because of the risk of catching AIDS.		0.67	0.78	
I am concerned about the safety of the medical procedures used by blood banks.		0.71	0.73	
<b><u>Psychological Fears</u></b>	<b>1.90</b>			<b>0.77</b>
I am afraid of hospitals.		0.75	0.82	
I don't like the sight of blood.		0.70	0.77	
I am afraid of needles.		0.68	0.75	
<b><u>Incentive</u></b>	<b>1.56</b>			<b>0.63</b>
Mass promotion would encourage many more people to become blood donors.		0.55	0.73	
People would be more willing to donate blood if they were asked personally.		0.59	0.71	
The offer of a free medical check-up would motivate people to donate blood.		0.60	0.66	
<b><u>Inconvenience</u></b>	<b>1.32</b>			<b>0.67</b>
It is inconvenient to make blood donations.		0.65	0.78	
Donating blood requires a lot of your time.		0.62	0.74	
Blood donors are out to a great deal of inconvenience.		0.71	0.73	
<b><u>Fear of Procedures</u></b>	<b>1.10</b>			<b>0.77</b>
Blood donation is not a painful procedure.		0.84	0.86	
I am not afraid of the medical procedures involved in making a blood donation.		0.79	0.83	

## **Appendix D**

### **Pilot Test of Draft Questionnaire**

The questionnaire was pilot tested using a convenience sample of 100 undergraduate business students from Edith Cowan University. In addition to completing the questionnaire, the students were asked to make comments on such things as the clarity of instructions and questions, the overall nature of the questionnaire, and any other points they considered to be useful. A response rate of 43% was achieved, which was deemed to be acceptable for the purposes of this exercise. As a result of the pilot test, a number of changes were made to the questionnaire, as discussed below.

Section 2 used a true/ false format to measure objective knowledge about blood donation. The pilot suggested an additional response category for "don't know" responses and this was added. Failure to provide this category would have led to a distortion of the objective knowledge measure, since some scores may have been inflated as a result of people selecting the correct answer by guessing. While it was recognised that some people would still guess the answers to questions, it was hoped that the inclusion of this new category would reduce the impact of this.

It was also noted that some respondents had changed their responses to Section 1, which measures perceived knowledge, after attempting to answer the objective knowledge questions in Section 2. This was felt to be unsatisfactory, since the intention was to measure respondents' perceived

knowledge before any attempts to answer the objective questions. The instructions in the questionnaire were amended to ensure that respondents did not change their responses about their level of perceived knowledge after attempting to answer the objective knowledge questions.

It was also noted that there were potential problems with the questions measuring perceived risk (i.e. Sections 5 and 6). More specifically, Section 5 asked respondents how likely they thought certain consequences of donating blood were to occur and Section 6 asked how important these consequences were to them. Several respondents stated that they felt their responses regarding the importance of the consequences were influenced by their responses about the likelihood of these occurring (i.e. highly unlikely, therefore not important). As it was not intended that the responses to one section should be determined by the response to the other, it was decided to swap the sections around, so that Section 5 asked about the importance of the consequences, followed by Section 6 asking about the likelihood of these occurring.

It was also noted that, although the survey contained a question about respondents' donation frequency during the past twelve months, this would not pick up respondents who had donated blood in the past, but not within that time period. Since it was considered that this information may be important, an additional question was included to ask people if they had ever donated blood.

It was found that some respondents were selecting more than one response category in the background section when they were only expected to select one. In an effort to overcome this problem, a number of steps were taken. First, the words "Please tick only one box" were inserted after the instructions for each of these questions. In addition, the instructions for Sections 15 and 16 were modified to direct respondents to select the category which best described their "main" situation, since the categories were not mutually exclusive. Furthermore, a category for "students" was added to the occupations included in Section 16.

While Section 20 asked respondents to indicate whether either of their parents had been born overseas and if so, to specify which one(s) and where, some responses were unclear in this regard. The question was divided into two parts, requiring the respondent to answer for each parent separately, providing more detailed and useful information.

The final changes to the questionnaire was to highlight instructions to sections by modifying the typing font to show these in italics, with the objective of ensuring that more respondents noticed and read the relevant instructions.

Appendix E

Questionnaire

The following section relates to your knowledge about various blood donation issues.

1. Please indicate the degree to which you agree or disagree with the following statement, by circling a number from 1 to 7. If you strongly disagree with the statement, then circle a number at the lower end of the scale (1 or 2). Alternatively, if you strongly agree with the statement, circle a number at the upper end of the scale (6 or 7). If your feelings are somewhere in between, please circle the number (3, 4 or 5) that most closely reflects your level of agreement or disagreement.

	Strongly Disagree			Strongly Agree				
	1	2	3	4	5	6	7	(5)
I feel that I am very knowledgeable about blood donation and the issues involved.								

2. For the following statements, please indicate whether you think each is true or false by ticking the appropriate box next to each statement. If you are unsure of the correct answer, please tick "Don't Know". Please do not go back and change your response to Question 1 after answering this question.

It takes around three months for the body to fully replace donated blood.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(6)
People can donate blood up to the age of 70 and beyond, if approved by a medical officer.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(7)
All of the equipment used to take a blood donation is sterile and used only once, to ensure the safety of the donor.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(8)
It takes between 45 minutes and one hour to go through the full process of making a blood donation.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(9)
Blood donations would be accepted from people who have had their ears pierced within the last 12 months.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(10)
The blood bank tests all donated blood for HIV, regardless of the donor's background.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(11)
The blood bank always has adequate stocks of the common blood types.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(12)
Intravenous drug users, other than those using drugs prescribed by a physician, would not be allowed to donate blood.	True <input type="checkbox"/> 1	False <input type="checkbox"/> 2	Don't Know <input type="checkbox"/> 3	(13)



All major religions, except for Jehovah's witnesses, support blood donation.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(14)

The blood bank recommends that average people can safely donate blood every 4 weeks.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(15)

All blood bank staff involved with taking blood donations have been fully trained to ensure the safety of the donor.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(16)

Legislation in Australia allows blood donors to be paid for blood in certain situations.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(17)

The blood bank always desperately needs donations of the rarer blood types.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(18)

Scientists have recently developed the technology to produce a substitute for blood in the laboratory.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(19)

People who have suffered from an infectious disease such as hepatitis or malaria, would never be allowed to donate blood.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(20)

The demand for blood is increasing at a faster rate than the supply of new donors, placing the State's blood supply under more and more pressure each year.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(21)

People who have been tattooed during the last 6 months would not be accepted as blood donors.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(22)

Homosexuals, who practice safe sex, would be accepted as blood donors.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(23)

The blood bank has three donor clinics in Perth, Fremantle and Hillarys, and sends mobile donor units to the suburbs at regular intervals.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(24)

People under the age of 18 cannot be blood donors.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(25)

Nobody in Australia has ever acquired AIDS by donating blood.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(26)

People who have had acupuncture during the last twelve months would not be allowed to donate blood.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(27)

The Australian Red Cross needs over 1 million blood donations each year to meet current demands.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(28)

People who have visited or lived in certain countries may be rejected as blood donors.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(29)

A local anaesthetic is available to all blood donors upon request.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(30)

Less than 5% of the State's population is registered as blood donors.

True

☐ 1

False

☐ 2

Don't Know

☐ 3

(31)

3. *The following statements relate to your attitudes towards blood donation and related issues. Please circle the number that most closely reflects your level of agreement or disagreement with each of these statements.*

People who have been saved by a blood donation have a duty to repay the debt by becoming blood donors.

Strongly  
DisagreeStrongly  
Agree

1

2

3

4

5

6

7

(32)

Blood donors are at risk of contracting AIDS during the donation process.

1

2

3

4

5

6

7

(33)

Healthy people have a duty to donate blood.

1

2

3

4

5

6

7

(34)

People would be more willing to donate blood if they were asked personally.

1

2

3

4

5

6

7

(35)

Many supporters of blood donation simply never get around to making donations themselves.

1

2

3

4

5

6

7

(36)

Blood donations save lives.

1

2

3

4

5

6

7

(37)

I don't like the sight of blood.

1

2

3

4

5

6

7

(38)

People should not donate blood because of the risk of catching AIDS.

1

2

3

4

5

6

7

(39)

I am afraid of being rejected as a blood donor for some reason.

1

2

3

4

5

6

7

(40)

Blood donors provide a valuable service to the community.

1

2

3

4

5

6

7

(41)

I am afraid of needles.

1

2

3

4

5

6

7

(42)

People with others close to them who have received a blood transfusion should be willing to become blood donors themselves.

1

2

3

4

5

6

7

(43)

The risk of feeling weak after making a blood donation worries me.

1

2

3

4

5

6

7

(44)

I am afraid of hospitals.

1

2

3

4

5

6

7

(45)

	Strongly Disagree					Strongly Agree		
Society does not approve of blood donation.	1	2	3	4	5	6	7	(46)
I am unsure whether I would be suitable as a blood donor.	1	2	3	4	5	6	7	(47)
Mass promotion would encourage many more people to become blood donors.	1	2	3	4	5	6	7	(48)
There is a high degree of risk associated with receiving a blood transfusion.	1	2	3	4	5	6	7	(49)
People who have received a blood transfusion should be willing to become blood donors themselves.	1	2	3	4	5	6	7	(50)
Many people are non-donors because they have never actually thought about the need for their blood.	1	2	3	4	5	6	7	(51)
Blood donations provide sick people with a chance at a better life.	1	2	3	4	5	6	7	(52)
Donating blood requires a lot of your time.	1	2	3	4	5	6	7	(53)
I am concerned about the safety of the medical procedures used by blood banks.	1	2	3	4	5	6	7	(54)
People who donate blood should be rewarded in some way for their efforts.	1	2	3	4	5	6	7	(55)
Donating blood is like giving an anonymous gift of life.	1	2	3	4	5	6	7	(56)
Blood donation is against my religion.	1	2	3	4	5	6	7	(57)
The offer of a free medical check-up would motivate people to donate blood.	1	2	3	4	5	6	7	(58)
Blood donation is not a painful procedure.	1	2	3	4	5	6	7	(59)
My culture does not approve of blood donation.	1	2	3	4	5	6	7	(60)
Sometimes the only thing that stops people from donating blood is a lack of motivation to actually get up and make the effort.	1	2	3	4	5	6	7	(61)
Blood donors are put to a great deal of inconvenience.	1	2	3	4	5	6	7	(62)
I am not afraid of the medical procedures involved in making a blood donation.	1	2	3	4	5	6	7	(63)
My friends object to blood donation.	1	2	3	4	5	6	7	(64)

	Strongly Disagree					Strongly Agree		
	1	2	3	4	5	6	7	
People who receive blood transfusions should be worried about the risk of the blood being infected.								(65)
It is inconvenient to make blood donations.								(66)
I am concerned about the risk of fainting associated with donating blood.								(67)
I would not be suitable as a blood donor for medical reasons.								(68)
I am concerned about the effectiveness of safety procedures in place to protect people who receive blood transfusions.								(69)

4. *The following list includes things that most people look for, or want out of life. Please circle the number that most closely reflects the degree of importance you place on each of these in your daily life.*

	Not at all Important					Very Important		
	1	2	3	4	5	6	7	
Sense of belonging								(70)
Excitement								(71)
Warm relationships with others								(72)
Self-fulfillment								(73)
Being well respected								(74)
Fun and enjoyment of life								(75)
Security								(76)
Self-respect								(77)
A sense of accomplishment								(78)

5. The following questions relate to some of the possible consequences often associated with blood donation. Please circle the number that most closely reflects the degree of importance you place on each of these possible consequences.

	Not at all important					Very important		
How important to you, is the risk of contracting AIDS when donating blood?	1	2	3	4	5	6	7	(5)
How important to you, is the risk of experiencing pain and discomfort when donating blood?	1	2	3	4	5	6	7	(6)
How important to you, is the risk of being rejected as a blood donor for some reason?	1	2	3	4	5	6	7	(7)
How important to you, is the risk that your religious community will object to you becoming a blood donor?	1	2	3	4	5	6	7	(8)
How important to you, is the health risk associated with donating blood, due to unsafe medical procedures?	1	2	3	4	5	6	7	(9)
How important to you, is the risk of passing on disease to others when donating blood?	1	2	3	4	5	6	7	(10)
How important to you, is the risk that donating blood will cause you inconvenience?	1	2	3	4	5	6	7	(11)
How important to you, is the risk that the blood bank will disclose your personal information to other parties, against your will?	1	2	3	4	5	6	7	(12)
How important to you, is the risk that your family will object to you becoming a blood donor?	1	2	3	4	5	6	7	(13)
How important to you, is the risk that your friends will object to you becoming a blood donor?	1	2	3	4	5	6	7	(14)
How important to you, is the risk that your donated blood will be given to someone who is unworthy of a blood donation?	1	2	3	4	5	6	7	(15)
How important to you, is the risk that donating blood will prevent you from taking part in the afterlife?	1	2	3	4	5	6	7	(16)
How important to you, is the risk of suffering from negative health effects, such as dizziness, as a consequence of donating blood?	1	2	3	4	5	6	7	(17)
How important to you, is the risk that donating blood will take up a lot of your time?	1	2	3	4	5	6	7	(18)

6. *Once again, the following questions relate to some of the possible consequences often associated with blood donation. Please circle the number that most closely reflects your feelings about the likelihood of each of these occurring as a result of donating blood.*

	Highly Unlikely							Highly Likely			
How likely are you to contract AIDS when donating blood?	1	2	3	4	5	6	7				(19)
How likely are you to experience pain and discomfort when donating blood?	1	2	3	4	5	6	7				(20)
How likely are you to be rejected as a blood donor for some reason?	1	2	3	4	5	6	7				(21)
How likely is it that your religious community will object to you becoming a blood donor?	1	2	3	4	5	6	7				(22)
How likely are you to face a health risk when donating blood, due to unsafe medical procedures?	1	2	3	4	5	6	7				(23)
How likely are you to pass on disease to others when donating blood?	1	2	3	4	5	6	7				(24)
How likely are you to experience inconvenience when donating blood?	1	2	3	4	5	6	7				(25)
How likely is the blood bank to disclose your personal information to other parties against your will?	1	2	3	4	5	6	7				(26)
How likely is your family to object to you becoming a blood donor?	1	2	3	4	5	6	7				(27)
How likely are your friends to object to you becoming a blood donor?	1	2	3	4	5	6	7				(28)
How likely is it that your donated blood will be given to someone who is unworthy of a blood donation?	1	2	3	4	5	6	7				(29)
How likely is it that donating blood will prevent you from taking part in the afterlife?	1	2	3	4	5	6	7				(30)
How likely are you to suffer from negative health effects, such as dizziness, as a consequence of donating blood?	1	2	3	4	5	6	7				(31)
How likely is it that donating blood will require a lot of your time?	1	2	3	4	5	6	7				(32)

7. The following statements relate to your media usage. Please circle the number that most closely reflects the degree to which you use the following types of media.

	Don't Watch At All					Watch A Lot		
Channel 2 (ABC)	1	2	3	4	5	6	7	(33)
Channel 7	1	2	3	4	5	6	7	(34)
Channel 9	1	2	3	4	5	6	7	(35)
Channel 10	1	2	3	4	5	6	7	(36)
Channel 28 (SBS)	1	2	3	4	5	6	7	(37)

	Don't Listen At All					Listen A Lot		
720 6WF	1	2	3	4	5	6	7	(38)
Radio National	1	2	3	4	5	6	7	(39)
6PR	1	2	3	4	5	6	7	(40)
6IX	1	2	3	4	5	6	7	(41)
6AR	1	2	3	4	5	6	7	(42)
PMFM 92.9	1	2	3	4	5	6	7	(43)
94.5 FM	1	2	3	4	5	6	7	(44)
6EBA-FM	1	2	3	4	5	6	7	(45)
TRIPLE M 96.1	1	2	3	4	5	6	7	(46)
Triple J	1	2	3	4	5	6	7	(47)
SBS National	1	2	3	4	5	6	7	(48)
Sonshine FM	1	2	3	4	5	6	7	(49)
ABC Classic FM	1	2	3	4	5	6	7	(50)

	Don't Read At All					Read A Lot		
West Australian	1	2	3	4	5	6	7	(51)
The Australian	1	2	3	4	5	6	7	(52)
Financial Review	1	2	3	4	5	6	7	(53)
Sunday Times	1	2	3	4	5	6	7	(54)
Community Newspapers	1	2	3	4	5	6	7	(55)
X-Press	1	2	3	4	5	6	7	(56)
New Idea	1	2	3	4	5	6	7	(57)
Women's Weekly	1	2	3	4	5	6	7	(58)
Who	1	2	3	4	5	6	7	(59)
Business Review Weekly	1	2	3	4	5	6	7	(60)

The following section contains questions about your donation behaviour and intentions.  
(Please tick the response that relates to you)

8. Have you ever donated blood?

Yes

No

☐ 1 Go to Q9.

☐ 2 Go to Q10.

(61)

9. How many times have you donated blood during the last twelve months?

None

Once

Twice

Three times

Four times

More than four times

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

(62)

10. Taking everything into account, what are the chances you will donate blood within the next twelve months?

Just donated blood today

Certain

Almost sure (9 chances in 10)

Very probable (8 chances in 10)

Probable (7 chances in 10)

Good possibility (6 chances in 10)

Fairly good possibility (5 chances in 10)

Fair possibility (4 chances in 10)

Some possibility (3 chances in 10)

Slight possibility (2 chances in 10)

Very slight possibility (1 chance in 10)

No chance, almost no chance (1 in 100)

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

☐ 8

☐ 9

☐ 10

☐ 11

☐ 12

(63)

11. For the following questions, please circle a number from 1 to 7 that most closely reflects your feelings.

How willing would you be to receive a blood transfusion from an unknown donor?

Not At All  
Willing

Very  
Willing

1 2 3 4 5 6 7 (64)

How willing would you be to receive a blood transfusion from a member of your family?

1 2 3 4 5 6 7 (65)

How willing would you be to allow a member of your family to receive a blood transfusion from an unknown donor?

1 2 3 4 5 6 7 (66)

How willing would you be to allow a member of your family to receive a blood transfusion from another member of your family?

1 2 3 4 5 6 7 (67)



In your opinion, what is the success rate for blood transfusions?

Extremely  
Low

Extremely  
High

1 2 3 4 5 6 7

(68)

The following section includes some questions about yourself, for classification purposes only. Please tick the response that relates to you.

12. What is your gender?

Male

☐

1

(69)

Female

☐

2

13. In which of the following age groups do you belong?

15 - 19

☐

1

(70)

20 - 29

☐

2

30 - 39

☐

3

40 - 49

☐

4

50 - 59

☐

5

60 - 69

☐

6

70 and over

☐

7

14. Which of the following best describes your current marital status? (Please tick only one box.)

Never married

☐

1

(71)

Defacto

☐

2

Married

☐

3

Separated

☐

4

Divorced

☐

5

Widowed

☐

6

15. Which of the following best describes the highest level of education you have completed? (Please tick only one box.)

Primary School

☐

1

(72)

Some High School

☐

2

High School leaver at 15 years of age

☐

3

High School leaver at 16 years of age

☐

4

High School leaver at 17 years of age

☐

5

TAFE or technical qualification

☐

6

University undergraduate degree

☐

7

University postgraduate diploma or degree

☐

8

16. Which of the following best describes your main current employment situation? (Please tick only one box.)

- |  |                            |      |
|--|----------------------------|------|
| Employed full-time (35 hours per week or more)   | <input type="checkbox"/> 1 | (73) |
| Employed part-time (less than 35 hours per week) | <input type="checkbox"/> 2 |      |
| Home duties (work at home)                       | <input type="checkbox"/> 3 |      |
| Unemployed                                       | <input type="checkbox"/> 4 |      |
| Studying   | <input type="checkbox"/> 5 |      |
| Retired  | <input type="checkbox"/> 6 |      |

17. Which of the following best describes your main current occupation? (Please tick only one box.)

- |  |                            |      |
|--|----------------------------|------|
| Senior manager or administrator          | <input type="checkbox"/> 1 | (74) |
| Professional or para-professional        | <input type="checkbox"/> 2 |      |
| Tradesperson                             | <input type="checkbox"/> 3 |      |
| Clerk                                    | <input type="checkbox"/> 4 |      |
| Salesperson or personal service provider | <input type="checkbox"/> 5 |      |
| Plant or machine operator                | <input type="checkbox"/> 6 |      |
| Labourer or related work                 | <input type="checkbox"/> 7 |      |
| Student                                  | <input type="checkbox"/> 8 |      |
| Other (Please specify) _____             | <input type="checkbox"/> 9 |      |

18. Which of the following most closely reflects your estimated income for the last year?

- |                     |                            |      |
|---------------------|----------------------------|------|
| Under \$20,000      | <input type="checkbox"/> 1 | (75) |
| \$20,001 - \$40,000 | <input type="checkbox"/> 2 |      |
| \$40,001 - \$60,000 | <input type="checkbox"/> 3 |      |
| \$60,001 - \$80,000 | <input type="checkbox"/> 4 |      |
| Over \$80,000       | <input type="checkbox"/> 5 |      |

19. In which country were you born?

\_\_\_\_\_ (76)

20. Were either of your parents born overseas?

- |        |     |                            |      |
|--------|-----|----------------------------|------|
| Mother | Yes | <input type="checkbox"/> 1 | (77) |
|        | No  | <input type="checkbox"/> 2 |      |

If yes, please specify: \_\_\_\_\_ (78)

- |        |     |                            |      |
|--------|-----|----------------------------|------|
| Father | Yes | <input type="checkbox"/> 1 | (79) |
|        | No  | <input type="checkbox"/> 2 |      |

If yes, please specify: \_\_\_\_\_ (80)

21. To which religious faith do you belong?

\_\_\_\_\_ (81)

**Thank you very much for taking the time to complete the questionnaire.**

**If you would like to make any additional comments about the research or blood donation issues not covered in the questionnaire, please do so in the space provided. Thank You.**

**COMMENTS**