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Preferences Regarding Kidney Donations from Deceased Donors: Evidence from a Discrete Choice Study

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Abstract:

Introduction: The demand for organs currently far exceeds supply. Understanding individuals' motivations for deciding whether to donate an organ from a deceased relative would guide outreach efforts.

Methods: Focus group participants and literature were used to identify attributes to create a discrete choice experiment (DCE). Participants (N=86 ages 18 to 31 [mean=20.5]) were presented with 16 choices sets and asked to choose whether they would agree to donate a deceased relative's organs. The choices contained attributes of the recipient (age, kidney's lifespan, reason for failure, impact if not transplanted), the deceased donor (donor's wishes and relationship to decision maker), and monetary incentives (amount, payer, payee). Conditional logit analysis was used to estimate the model, and latent class analysis identified two distinct groups of respondents.

Results: The results suggest a strong preference for donating organs, with the age of the recipient, reason for recipient's need, and impact of not receiving the organ emerging as important factors. The financial incentive was not important. Latent class analysis suggested the two groups: Respondents in Class 1 placed relatively more importance on the wishes of the donor and having a financial incentive, while those in Class 2 placed relatively more weight on the impact should the recipient not receive the organ. Membership is the groups was predicted by gender and reported risk aversion.

Conclusion: DCE proved to be a useful tool for evaluating important factors in organ donation. Future studies can expand with evaluation of a larger sample representative of general population.

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Introduction

Many countries around the world are faced with a shortage of organs for transplantation [1]. For instance, there are currently over 120,000 individuals waiting for an organ transplant in the United States [2], including over 100,000 awaiting kidney, nearly 15,000 awaiting a liver, and approximately 5,500 awaiting a heart or lung transplant [2]. Though organs can be recovered from live or deceased donors, procurement through deceased donors has the potential to significantly decrease the waiting list [3,4]. Unfortunately, the number of deceased donors has leveled off for the past decade, despite advances in organ transplantation practice and educational campaigns (most notably the Organ Donation Breakthrough Collaborative [5]). This has led to calls to increase the supply of transplantable organs by from deceased organ donors [4].

The decision to donate organs is often made by the deceased's family members, during a time of marked distress [6]. Previous studies have identified a number of factors that influence the donor decision maker (DDM[7–9]). Some factors are situational, such as the DDM's physical and emotional state, the amount of information available at the time, and the availability of other family members[6,9,10]. Other influences reflect the characteristics of the DDM, such as their underlying values (e.g., protection, altruism, and respect)[11–13], the deceased's wishes, and religious and cultural beliefs[9,14].

Whether or not to donate organs is a 'preference sensitive' decision[15], meaning that the 'right' decision for one person might be different than the 'right' decision for another. In this context, making the 'right' decision means making the choice that is consistent with the DDM's values, attitudes and preferences. In addition to the time pressure to make a decision, the emotional nature of the situation and the uncertainty experienced by family members may lead to decisions, either for or against donation, that may later be regretted[16]. Previous study concluded that one in three families who refuse consent and one in ten families who grant consent later report regretting their decision.[17]

Organizations (such as Organ Procurement Organizations in the US) charged with counseling potential donors need to understand their values and preferences concerning donating the organs of deceased relatives. Because of the flattening of donation rates, policy makers are considering other approaches to increasing donations, including providing information about the recipient[18], financial incentives[19–22], and new legislation [23,24]. The current law[24] regulating organ donations in the USA is based on the principle of *informed consent* in which the organ donor must declare him/herself as such while alive. Some countries in Europe had changed their law to be based on *presumed consent,* meaning all people are considered organ donors, unless they explicitly oppose to it before death. This simple change on the law has resulted in increased rates of organ donations of up to 30%[24]. Other aspects of the US law are very strict in determining that all organ donation be considered an altruistic gift, thus prohibiting all forms of financial compensation[20]. However, some states have found ways to stimulate organ donation by allowing tax breaks for live organ donors[20]. Other authors have also discussed the plausibility and ethical implications of modifying the law to allow for financial incentives for organ donations[22,23,25]. Aside from the ethical considerations, proponents of these policies lack information on the likely effectiveness of these measures to increase donation rates.

This study describes the results of a discrete choice experiment (DCE)[26] seeking to identify the factors that young adults[27] think are important when considering whether to donate a kidney from a deceased relative. DCEs have been

used previously to examine organ donations[16,28], although the focus was upon the allocation of organs and end of life care rather than the preferences regarding deceased organ donations. In the present study, participants were asked to make a series of hypothetical choices about whether or not to donate a kidney of a recently deceased individual, considering factors such as the characteristics of the recipient, the characteristics of the donor, and the potential for incentives to be paid to the DDM. The purpose of this study is, therefore, to identify the factors that individuals consider when deciding to donate a kidney from a deceased relative, the relative strength of these preferences, and the likely impact of incentives to increase organ donations.

Methods

Sample and Data
Ninety five students (N = 94) at the University of California, Merced were recruited for the study via fliers and class announcements, between March and May of 2015. All surveyed were English-speaking adults. Eight participants were interviewed individually during the pilot phase[26], and 86 participated in the discrete choice survey. All students were given a $15 gift certificate in thanks for their participation. In addition, as part of the study, students participated in a risk-elicitation questionnaire (described below). The average earning from the risk-elicitation measure was $9.31 (min = $1, max = $16). The study was approved by the Institutional Review Board at the University of California, Merced.

Measures
The measures were developed and then trialed through interviews with 8 participants. The purpose of the pilot phase interviews was to identify the factors that individuals felt would be important to consider when deciding on whether to donate the organs of a recently deceased individual and to obtain feedback on a draft of the questionnaire. These interviews were recorded, transcribed, and then analyzed by a member of the research team (GM). The information and feedback provided were incorporated in the preparation of the final survey.

A paper-based DCE survey was developed based on prior research and feedback from pilot phase. The survey began with general information about organ donations, about kidney donations, and how kidneys can be procured from deceased individuals. Subjects then had the methodology explained and were presented with an example of a DCE. The DCE involved asking participants to choose between two hypothetical testing alternatives described by a set of eight attributes with two to six levels (see Table 1).

INSERT TABLE 1 HERE

The levels of the attributes were varied systematically using Sawtooth Software Version 8.2.4 to design a balanced and efficient set of 16 choice tasks. Ten different paper-based surveys were developed. In each version of the survey, participants were presented with 16 choice sets and asked to choose Option A, Option B, or 'No donation' (see Table 2). Following the DCE, subjects were asked to complete a questionnaire that included demographic questions (gender, age, ethnicity), risk elicitation[29] to determine their tendency toward financial risk taking or risk aversion, religious views, and how their own, or their families' religious or cultural views would affect their choices[9,11,29]. Participants were categorized into 'Risk Averse' (risk elicitation score of 1 to 4), 'Risk Neutral (risk elicitation score of 5), or 'Risk Seeking' (risk elicitation score of 6 to 10).

Data Analysis

Descriptive statistics, including means and proportions, were computed for all demographic measures, including age, gender, ethnicity, and risk category (risk neutral, loving, or adverse). The discrete-choice data were first analyzed using a conventional conditional logit model, which produces utility coefficients for each level of each attribute. As there were three options for each decision choice (Option A, Option B, or Neither Option A nor B), the 'Neither' options indicates the preference not to donate. A significantly negative coefficient would therefore demonstrate that the respondents were more likely to choose to donate than not.

The first analysis modeled all attributes as categorical variables. The second analysis was identical to the first, with the exception that it modeled age of recipient, lifespan of the kidney after transplant, and financial incentive as linearized continuous variables. Next, the conditional logit model with a latent class component was used to investigate preference heterogeneity and their determinants. A generalized DCE Latent Class Analysis (LCA) model was used that incorporated both option level predictors as well as person level characteristics. To predict class we used the following demographic factors: gender, age, ethnicity, and risk category. Participants were categorized as being Asian, Latino, or other ethnicity (White, African American, Native American, and other ethnicities). Fit indices (AIC, BIC, CAIC) were used to identify the optimal number of latent classes. The two-class analysis was the determined to have the best fit. All analyses were performed using Stata version 13.

Results

Sample

Of 86 participants who completed the survey, 54.7% (n=47) were female and 45.4 % (N = 39) were male (Table 3). Their ages ranged from 18 to 31, with the mean age at 20.5 years old (M=20.53, SD=1.65), with 38% reporting as Asian, 34% Latino, 17% Whites, 2% African Americans, 2% Native American, and 6% of other ethnicities. Because of the low percentage of Whites, African American, Native American, and other ethnicities, respondents were categorized into Asian, Latino, and Other for the subsequent analyses. When asked if they would be willing to have the organ donor status on their driver's license, 58% of the participants responded affirmatively. The risk measure showed us that 55% of the participants were categorized as Risk Averse, 28% as Risk Loving, and 17% as Risk Neutral.

Discrete Choice Analysis

The results from the discrete choice analysis for the entire sample are shown in Table 4. Looking first at the decision whether or not to donate, the variable representing 'neither option' shows a significant negative effect (β= -1.94; p <.001) in all models, suggesting that, all things being equal, the respondents were more likely to choose to agree to donate a kidney of a recently deceased.

INSERT TABLE 4 HERE

Turning first to the attributes of the recipient, responders generally preferred to donate organs to younger recipients than the older. The categorical model indicates that there is not a significant difference for the ages of 10 and 20 years old (β= -0.18, p<.10), but there is significant negative effect, as the age goes higher: Up to 40 years. (β= -0.37, p<.001); Up to 60 years old and older (β= -0.73, p<.001). When linearized, increased age was associated with significantly decreased willingness to donate (β= -0.37, p<.001). The lifespan of the kidney was generally not an important consideration, with most lifespan categories (expect 15 years; β= -0.31, p<.05) and the linearized age not being significant predictors. When compared to not knowing the reason for the organ failure (the current practice in most countries), knowing that the organ failure was due to a genetic condition or infection did not significantly increase the likelihood of agreeing to donate. However, knowing that the organ failure was due to the recipient's drug or alcohol abuse did significant decrease the likelihood of donating (β= -0.7, p<.001). Finally, the participants were more likely to donate if the potential recipient would have to wait 6 months (β= 0.55, p<.001) or 2 years (β= 0.84, p<.001), with the likelihood increasing even more if the recipient was likely to die without the organ (β= 1.25, p<.001).

Turning next to the factors relating to the donor, the results suggest that respondents are more likely to agree to donate if it was a close family member than a distant relative (β= -0.31, p<.001). The respondents were also less likely to agree to donate if the donor had indicated that they did not want to (β= -0.40, p<.001) when compared with the donor merely indicating on their driver's license that they wanted to donate. However, the indication on the driver's license did not make it significantly more likely that they would donate when compared to having no information (β= -0.11, p=.31), and having a clear indication of desire to donate was only slightly more likely to increase the likelihood of donating (β= 0.29, p<.01).

Finally, there was no impact of financial incentives on the decision to donate. Compared with having no financial incentive, amounts up to $30,000 ($\beta$= 0.07, p=.55) did not significantly increase the likelihood of donating an organ, regardless of whether the money was paid to a charity of the donor's choice or directly to the decision maker (β= -0.04, p=.55). If money was to be paid, the respondents were supportive of the money coming from the government or a non-profit organization than an insurance company (β= -0.23, p<.10) or the recipient's family (β= -0.43, p<.001). This is not to suggest that respondents were against financial incentives, the results merely indicate that they are indifferent between using or not using financial incentives for organ donation.

Willingness to trade off age of recipient

While a discrete choice analysis provides information about the strength of the respondents' preferences for each attribute, marginal analysis can show the relative importance of each factor. Typically, the marginal analysis is presented as a 'willingness to pay' that reports each attribute in terms of its relative monetary value. Because the attribute relating to the financial incentive was not significant in this study, the results are presented in terms of another linearized attribute: the age of the recipient. Given that respondents showed a clear preference for younger as opposed to older recipients, the relative values of each attribute can be interpreted as the number of years that they would be willing to tradeoff. As shown in Table 5 (Entire Sample), the most important factor was the option of donating overall (equivalent of 147.9 years), meaning that the respondents felt very strongly about donating organs

regardless of the other factors. The next most important factor was the impact of the recipient not receiving the transplant, with the respondents seeing having to wait two years (60.7 years) and death (90 years) as the next most important factors. Among the other factors, the respondents reported feeling strongly about whether the reason for the need of the transplant was due to alcohol or drugs, with the respondents reporting that this was equivalent to over 50 years. Overall, the financial incentives were not reported as being relatively as important.

Characteristics of the Latent Classes

Establishing the appropriate number of latent classes, or class enumeration, is one of the most important parts of Latent Class Analysis (LCA). One, two, three, and four class solutions were fit to the discrete-choice data. Two, three, and four class models were suggested by various fit indices. The most commonly used fit indices, the CAIC and the BIC, suggested two class solutions. The conditional logit regression results for the two class solution are presented in Table 6 along with the overall DCE analysis results. Class 1 was estimated to be composed by 57% (n=49) of the sample, with the remaining 43% (n=37) being assigned to Class 2.

INSERT TABLE 6 HERE

The respondents in both Class 1 and 2 continued to have strong preferences for donating organs relative to the other factors (Table 6: β= -1.72, p<.001 for Class 1, and β= -3.64, p<.001 for Class 2). As shown in Table 5, the respondents in Class 1 were willing to tradeoff 143.7 years, while those in Class 2 were willing to trade 260.1 years. In looking at the differences between the classes, the respondents in Class 1 placed relatively more importance on the wishes of the donor, particularly with regards to them not wanting to donate (β= -1.11, p<.001; 92.5 years) or not indicating their wishes (β= -0.68, p<.05; 56.4 years) than respondents in Class 2 (β= -0.09; 6.1 years and β= 0.19; 13.6 years, respectively). In contrast, the respondents in Class 2 rated the potential impact of not having the organ as relatively more important, particularly the possibility of death (β= 1.50, p<.001; 107.1 years). Finally, the respondents in Class 1 were more likely to report financial incentives as being relatively more important, including both the amount of the incentive (β= 0.000006, p<.05), whether it was paid to the family of the donor (β= -0.21, p<.10), and who it was paid by, either the insurance company (β= -0.48, p<.05) or the recipient's family (β= -0.71, p<.01). However, although the willingness to tradeoff years of the age of the recipient were significant for the source of the funding (40 years for insurance company, 59 years for the recipient's family), neither the sources of the funding (3.3. years) nor the amount of funding (1.75 years per $1000) were relatively important.

In looking at the predictors of class membership, the respondents in Class 1 were more likely to be female (β= 1.24, p<.05), less likely to declare organ donation status on their drivers' license (β= -1.46, p<.05) and trending toward being less risk averse (β= -1.2, p<.10). Ethnicity was not a significant predictor of class membership, nor was age (although the relatively youth of the sample meant there was not a wide age range).

Conclusion

The purpose of this study was to identify the factors that people consider as important when considering whether or not to consent to donate the organ of a deceased relative. The results suggest that there was a strong preference for donating the organs, and that respondents' choices indicated that the age of the recipient, whether the recipient's need was related to misuse of alcohol or drugs, and impact of not receiving the organ on the recipient as important

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factors. Less important was the possibility of having a financial incentive associated with the donation, regardless of whether it went to the family directly or to a charity. However, the latent class analysis suggested that there were differences in types of respondents, with one group (Class 1) rating the financial incentive and the wishes of the donor as more relatively more important considerations, while the other group (Class 2) focused on the impact on the recipient from not receiving the organ.

The results reported here are consistent with previous studies[6,10] describing the factors that influence decisions to donate a deceased loved one's organs, including the individual's own values (e.g., protection, altruism, and respect), the deceased's wishes[33], and the age of the deceased. The preference to donate organs to younger patients and to those who are in more critical need of the transplant is consistent with the findings of a previous DCE study evaluating preferences for organ allocation[28] in which the authors describe that the "pre-transplant life expectancy" was more important than the higher life expectancy after the transplant. The results reported here on the unimportance of incentives differs from a previous study[19] that concluded that the public is not supportive of financial incentives.

The reason for the lack of significance for the financial incentives is not clear. The results show that incentives as high as $30,000 have relatively little impact on decisions, either positive (i.e., induce more donations) or negative (i.e., lead to less donations because people are averse to the introduction of a financial motive). The failure to find a significant relationship could have been due to the sample population (young adults who have never been faced with this decision before), and thus future research should focus on understanding the preferences of other potential DDMs.

Understanding the factors that individuals report as important can help guide OPOs in developing materials to assist DDM's to make decisions that are consistent with their values and beliefs. The decision to donate organs of a deceased family member is a 'preference sensitive' decision[34] meaning that the 'right' decision for one person might be different from the right decision for another. Making the 'right' decision means making the choice that is consistent with one's values, attitudes and preferences. The results from this study suggest that, for this sample population, there are two classes or groups, and these groups will have some factors that they both value, but there will be differences. For instance, the respondents in Class 1 (female, less likely to indicate on their driver's license that they want to be donors, and more risk averse) may be more attuned to the wishes of the donor, while the respondents in Class 2 will be relatively more attuned to the impact of the recipient not receiving the organ. If we are to increase the number of organs that are available and reduce the stress induced by the decision on family members, we must develop informational approaches that are sensitive to the values of the family members, and take into account the environment in which the decision is being made. While only a preliminary study with a specific population, the results do demonstrate the potential of this methodology for helping develop communication materials and strategies.

As shown here, the methodology can also be used to identify potential impact of policy options aimed at increasing the number of donations. This study examined the potential impact of two recently discussed options: Providing information about the recipient of the organ and providing incentives to promote organ donation/offset any expenses. [31–33] The results suggest that, were it enacted, providing information about the recipient might have no impact if the need arose from a genetic condition or a medical condition, but would likely depress contribution rates

if the need arose from misuse of alcohol or drugs. And while rates might increase if the potential recipient were young or if the consequences of not having the transplant were dire, DDMs might be less likely to donate if characteristics were reversed (older and not dire consequences). Understanding the net impact on overall response rates could be calculated by comparing the potential response rate given the actual population of recipients.

A limitation of the methodology is that it does not capture the factors that influence decision making at the time when the decision is made. That is, the decision to donate is often made by the family members during a time of marked distress, and previous studies[6,10] have identified factors such as exhaustion, need for more information, and having other family members not able to make a stable decision as being significant factors in motivating their decisions. The emotional nature of the situation and the uncertainty experienced by family members may lead to decisions, either for or against donation, that may later be regretted[35-37]. In addition to understanding the preferences of individuals, future research should identify factors that can lessen decisional regret for DDMs.

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Table 1 - Attributes and Dimensions for Organ Donation Discrete Choice Experiment

Attributes		Dimensions				
Characteristics of person receiving transplant	Age	10 year old child	20 year old	40 year old	60 years	
	Years till need a new kidney	1 year	5 years	10 years	15 years	20 years
	Impact if recipient does not receive this transplant	No impact, the person will quickly get another kidney	6 Months wait with some pain and discomfort	2 years wait with significant pain and discomfort	Person will die prematurely	
Characteristics of donor	Relationship of the donor to you	Close family member	Distant relative	Stranger		
	Wishes of donor	Indicated they wanted to be a donor	Indicated on Driver's License that they wanted to be a donor	Indicated that they do not want to be a donor	No indication of whether they wanted to be a donor	
Incentive	Amount	$30,000	$15,000	$1,500	$150	$0
	Paid to	Charity of donor's choice	You to decide			
	Paid by	Insurance company	Recipient's family	Government	Non-profit organization using donations	

Table 2 – Example of choices

Feature		Option 1	Option 2	Neither Option 1 nor 2
Recipient	Age	Child	60 year old	
	Lifespan of kidney	5 years	20 years	
	Reason for a kidney	Genetic failure	Misused alcohol or drug use	
	Impact	6 months wait with some pain and discomfort	6 months wait with some pain and discomfort	
Donor	Relationship to you	Close relative	Stranger	
	Wishes of donor	Not stated	Desire to donate	
Incentive	Incentive amount	$1500	$150	
	Incentive paid to	You to decide	You to decide	
	Incentive paid by	Insurance company	Government	

Prefer Option 1	Prefer Option 2	Neither 1 nor 2

Table 3 – Summary Statistics

Variables	Entire sample N	Entire sample % (SD)	Class 1 N	Class 1 % (SD)	Class 2 N	Class 2 % (SD)
	N	% (SD)	N	% (SD)	N	% (SD)
Age	86	20.5 (1.65)	49	20.6 (1.85)	37	20.5 (1.36)
Gender						
Male	39	45.0%	24	49.0%	15	41.0%
Female	47	55.0%	25	51.0%	22	59.0%
Ethnicity						
White	15	17.4%	7	14.3%	8	21.6%
Black	2	2.3%	1	2.0%	1	2.7%
Asian	33	38.3%	21	42.9%	12	32.4%
Hispanic	29	33.7%	15	30.6%	14	37.8%
NA or Alaskan	2	2.3%	2	4.1%	0	
Other	5	5.8%	2	4.1%	2	5.4%
Would want to indicate on DL to be OD?	50	58.1%	25	51.0%	25	67.6%
Would donate organs after death?	49	57.0%	24	50.0%	25	67.6%
Heard about live OD?	46	53.5%	26	53.1%	20	54.1%
Family or Friend donated?	7	8.1%	2	4.1%	5	13.5%
Family or friend transplanted?	15	17.4%	9	18.4%	6	16.2%
Family or friends w/ COF?	13	15.1%	5	10.2%	8	21.6%
Risk Scale Scores						
Risk Loving	24	28.0%	16	29.0%	10	27.0%
Risk Neutral	15	17.0%	5	10.0%	10	27.0%
Risk Averse	47	55.0%	30	61.0%	17	36.0%
Total N - % total	86		49	57.0%	37	43.0%

Acronyms: SD = Standard Deviation; NA = Native American; DL = Drivers' License; OD = Organ Donation; COF = Chronic Organ Failure.
Risk loving = Risk score between 1 and 4
Risk Neutral = Risk score of 5
Risk Averse = Risk score between 6 and 10

Table 4 – Discrete choice results: Entire Sample

Attributes	Dimensions	Categorical Model		Linear Model	
		Estimate	Standard Error	Estimate	Standard Error
'NEITHER' OPTION:		-1.94***	(0.22)	-2.07	(0.21)
RECIPIENT:					
Age	Child (10 years old)	Omitted		Omitted	
	20 years old	-0.18	(0.11)		
	40 years old	-0.37**	(0.11)		
	60 years old	-0.73***	(0.12)		
	Linear age			-0.01***	(0.01)
Lifespan of kidney	1 year	Omitted		Omitted	
	5 years	-0.02	(0.13)		
	10 years	-0.16	(0.13)		
	15 years	-0.31*	(0.13)		
	20 years	-0.07	(0.13)		
	Linear lifespan			-0.01	(0.01)
Reason kidney failed	Don't know	Omitted		Omitted	
	Misused alcohol and drugs	-0.71***	(0.12)	-0.71***	(0.12)
	Infection	0.05	(0.11)	0.06	(0.11)
	Genetic defect	0.17	(0.11)	0.17	(0.11)
Impact on recipient if not transplanted	No impact	Omitted		Omitted	
	6 Months wait	0.55***	(0.12)	0.55***	(0.11)
	2 Years wait	0.84***	(0.12)	0.85***	(0.11)
	Death	1.25***	(0.12)	1.26***	(0.12)
DONOR:					
Relationship of donor to decision maker	Close family	Omitted		Omitted	
	Distant Relative	-0.31***	(0.09)	-0.30**	(0.09)
	Stranger	-0.28***	(0.10)	-0.28**	(0.09)
Wishes of donor	Wanted to donate	0.28*	(0.11)	0.29**	(0.11)
	Driver's License Donor	Omitted		Omitted	
	Did not want to donate	-0.39**	(0.12)	-0.40***	(0.11)
	No indication of wishes	-0.11	(0.11)	-0.11	(0.11)
INCENTIVES:					
Amount of incentive	$30,000	0.07	(0.12)		
	$15,000	-0.01	(0.13)		
	$1,500	0.11	(0.13)		
	$150	0.02	(0.13)		
	$0	Omitted		Omitted	
	Linear incentive			0.000	(0.00)
Paid to	Charity of donor's choice	Omitted		Omitted	
	Family of donor	-0.04	(0.07)	-0.04	(0.07)
Paid by	Insurance company	-0.22*	(0.11)	-0.23*	(0.11)
	Recipient's family	-0.43***	(0.12)	-0.44***	(0.12)
	Government	Omitted		Omitted	
	Nonprofit organization	-0.04	(0.11)	-0.03	(0.11)

N=1376; †*p*<.10, **p*<.05, ***p*<.01, ****p*<.001

Table 5 - Marginal analysis: Willingness to trade off age of recipient

Attributes	Dimensions	Entire Sample	Latent Class 1	Latent Class 2
'NEITHER' OPTION:		147.9	143.7	260.1
RECIPIENT:				
Age	Linear age	1.0	1.0	1.0
Lifespan of kidney	Linear lifespan	0.6	0.8	0.7
Reason kidney failed	Don't know			
	Misused alcohol and drugs	-50.7	-67.3	-50.4
	Infection	-4.3	-12.7	-5.0
	Genetic defect	-12.1	-4.5	-16.9
Impact on recipient if not transplanted	No impact			
	6 Months wait	-39.3	-4.3	-53.6
	2 Years wait	-60.7	-43.3	-75.4
	Death	-90.0	-78.3	-107.1
DONOR:				
Relationship of donor to decision maker	Close family			
	Distant Relative	21.4	25.2	24.8
	Stranger	20.0	48.7	12.3
Wishes of donor	Wanted to donate	-20.7	-40.0	-15.6
	Driver's License Donor			
	Did not want to donate	28.6	92.5	6.1
	No indication of wishes	7.9	56.4	-13.6
INCENTIVES:				
Amount of incentive	Linear incentive	0.0	0.0	0.0
Paid to	Charity of donor's choice			
	Family of donor	2.9	3.3	2.9
Paid by	Insurance company	16.4	40.0	11.4
	Recipient's family	31.4	59.0	26.9
	Government			
	Nonprofit organization	2.1	4.5	2.4
n		1376	752	546

Table 6 – Discrete choice results: Latent Class Analysis

Attributes	Dimensions	Latent Class 1		Latent Class 2	
		Estimate	Standard Error	Estimate	Standard Error
'NEITHER' OPTION:		-1.72***	(0.35)	-3.64***	(0.43)
RECIPIENT:					
Age	Linear age	-0.01***	(0.00)	-0.01***	(0.00)
Lifespan of kidney	Linear lifespan	-0.01	(0.01)	-0.01	(0.01)
Reason kidney failed	Don't know	Omitted		Omitted	
	Misused alcohol and drugs	-0.81***	(0.22)	-0.71***	(0.15)
	Infection	0.15	(0.20)	0.07	(0.14)
	Genetic defect	0.05	(0.20)	0.24	(0.15)
Impact on recipient if not transplanted	No impact	Omitted		Omitted	
	6 Months wait	0.05	(0.21)	0.75***	(0.16)
	2 Years wait	0.52*	(0.20)	1.06***	(0.16)
	Death	0.94***	(0.23)	1.50***	(0.18)
DONOR:					
Relationship of donor to decision maker	Close family	Omitted		Omitted	
	Distant Relative	-0.30†	(0.17)	-0.35**	(0.13)
	Stranger	-0.58**	(0.21)	-0.17	(0.15)
Wishes of donor	Wanted to donate	0.48*	(0.20)	0.22	(0.15)
	Driver's License Donor	Omitted		Omitted	
	Did not want to donate	-1.11***	(0.23)	-0.09	(0.16)
	No indication of wishes	-0.68*	(0.23)	0.19	(0.15)
INCENTIVES:					
Amount of incentive	Linear incentive	0.00*	(0.00)	0.00	(0.00)
Paid to	Charity of donor's choice	Omitted		Omitted	
	Family of donor	-0.21†	(0.12)	-0.01	(0.08)
Paid by	Insurance company	-0.48*	(0.20)	-0.16	(0.14)
	Recipient's family	-0.71**	(0.23)	-0.38*	(0.15)
	Government	Omitted		Omitted	
	Nonprofit organization	-0.05	(0.20)	-0.03	(0.14)

†*p*<.10, *p<.05, **p<.01, ***p<.001

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Table 7 – Predictors of class membership: Class 1 vs. Class 2

		Estimate	Standard Error
Gender		1.24*	(0.59)
Age		0.04	(0.17)
Ethnicity	*Asian*	0.27	(0.72)
	Hispanic	-0.19	(0.81)
	White and other	Omitted	
Driver's License donor		-1.45*	(0.64)
Risk elicitation	*Risk loving*	-0.20	(0.85)
	Risk neutral	Omitted	
	Risk averse	-1.27†	(0.77)

Positive coefficient indicates more likely to be in Class 1

† *p*<.10, * *p*<.05