



RESEARCH ARTICLE

WILEY

Organ donation in India—A social marketing perspective

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Organ donation is a social issue, and marketers face challenges promoting it. If factors aiding and inhibiting it are identified, it becomes easier to enhance intention of donating organs. The objective of this research is to establish the role of perceived awareness, family support, perceived individual value, and religiosity on organ donation intention (ODI). A sample of 247 respondents answered a structured questionnaire. Proposed model is mediated by organ donation attitude (ODA) and moderated by perceived risk. Findings from the study show that all the predictors are positively related with ODI mediated through ODA and perceived risk moderates the influence of ODA on ODI.

1 | INTRODUCTION

Organ donation (OD) has become a very important issue as the level of organ failure has seen a steep increase over the years. Medical advancements have escalated the propensity of number of people undergoing the organ transplant process. A combination of these factors have continuously lead to an increased demand for organs (Becker & Elias, 2007). It becomes the responsibility of social marketers to communicate the scenario and make common people understand the value of organs and importance of OD. OD can occur in whole (such as kidney, heart, and pancreas) or in parts (such as heart valves, partial lobes of lung or liver, skin, and bone; Steinberg, 2012), and it can be from both living and deceased donors. Tissue may be recovered from donors who are cardiac dead up to 24 hr past the cessation of heartbeat. Unlike organs, most tissues (with the exception of cornea) can be preserved and stored for up to 5 years (Hood, Vogelsang, Black, Farmer, & Santos, 1987). This study focuses on cadaveric OD.

Nonavailability of suitable donor (Theodore & Lewiston, 1990) leads to an increased demand of organs. The supply of organs is stagnant even though death rates are high (Merion et al., 2005) leading to widening of the demand–supply gap. India's OD rate in 2016 is 0.8 person per million population (pmp; Times of India, 2017). Three percent out of 85,000 terminally ill liver patients (for whom transplant is the only way of survival) gets liver for transplant. Among 0.2 million patients who register for kidney annually, only 8,000 get it, and others die in due course because of nonavailability of donor kidneys, and people awaiting cornea for transplant is 1 million (medindia, 2015). Around 0.25 million people die due to organ failure annually in India (Times of India, 2017). In India, the level of OD is very low compared

with countries such as America—26, Spain—35.3, and Croatia—36.5 pmp, respectively (Saxena, Khan, Masood, Qureshi, & Rathore, 2016). The statistics indicate the importance of OD in Indian context, the country with second largest population.

The Transplantation of Human Organs Act 1994 heralded a significant change in the OD and transplantation scene in India (Agarwal, Srivastava, Gupta, & Tripathi, 2012). OD from deceased donors as well as live donors gained momentum in many states of India especially Tamil Nadu and Andhra Pradesh. These states had taken initiatives for awareness and knowledge building for OD, but there was hardly any focused work done towards furthering the deceased OD program (Mohan Foundation, 2011). Tamil Nadu is one of the well-developed states in India with OD rate of 1.8 pmp, which is seven times higher than the national average, and Chennai in Tamil Nadu fares even better with 14 pmp, which is on par with developed countries like Germany (Annadurai, Mani, & Danasekaran, 2015).

A study conducted by Kumar et al. (2014) stated that the conversion rate of OD consent from kith and kin of brain dead patients were found to be only 8.2% in India; the reason being poor knowledge regarding brain death. A study among health workers in India found that the factors that positively influence willingness to donate organs after death were favorable attitude of the spouse, religious belief supporting OD, personal experience with program like blood donation, and knowledge about hospital transplant program (Ahlawat et al., 2013). Another study among outpatients in South India revealed that majority of the people are not willing to donate organs despite high awareness. Religious reason, family refusal, and body mutilation (Mithra et al., 2013) were responsible for lack of willingness to donate organs. Knowledge and attitude were studied among college students in India and found that the awareness was high and a few were willing

to donate the organs. Research suggests using a multi-sectoral approach to promote OD (Shah, Kasper, & Miller, 2015). All these studies reveal the importance of making people more aware about OD to unravel this social issue.

2 | LITERATURE REVIEW

2.1 | Determinants of OD

The variables dealt in previous studies were awareness (dealing with the level of information about OD; Tong, Chapman, Wong, Josephson, & Craig, 2013; Sanner, 1994; Mostafa, 2008), knowledge (Horton & Horton, 1991; Kopfman & Smith, 1996; Shah et al., 2015), altruism (Hill, 2016; Moorlock, Ives, & Draper, 2014), attitude that deals with the positive feeling about OD (Abdullah et al., 2016; Mikla et al., 2015), intention that encapsulates one impending behavioral manifestation to donate organs (Irving et al., 2012; Lin, Lin, Chen, & Lin, 2014), behavior (Kotchen & Reiling, 2000; Rocheleau, 2013), saving lives, body dignity, risk, family consent, and religious beliefs (Irving et al., 2014). These variables have been studied as predictors of OD intention (ODI).

2.2 | Factors enhancing OD

It was found that higher knowledge about OD will help in creating positive attitude (Shah et al., 2015), and the value perceived by an individual can increase the attitude towards donation (Shim & Eastlick, 1998). Value perceived by the individual means the "value perceived by the donor in the act of donation." If the donor perceives high value, then he/she is likely to have positive attitude towards OD.

Religion plays a very important role in an individual's decision to donate organs, but it has not been studied as an antecedent to OD attitude (ODA; Morgan, Harrison, Afifi, Long, & Stephenson, 2008). India has an opt-in policy for OD, which means that even though an individual has got an organ donor card, the consent from family is required for the OD process to legally materialize (Afifi et al., 2006; Jones, Reis, & Andrews, 2009). Social marketing has been used to encourage families to have conversation with loved ones regarding their personal choice to donate organs.

2.3 | Applicability of social marketing to encourage OD

Social marketing is rapidly growing and is based on the traditional marketing exchange theory, which states that consumer behavior changes when barriers are reduced (Quinn et al., 2007). Few researchers have studied about the inherent fear of people that prevent donation as an antecedent of ODA (Molzahn, Starzomski, & McCormick, 2003; Schulz, Nakamoto, Brinberg, & Haes, 2006). There is no comprehensive model incorporating the moderation effect of the risk in the conversion of the attitude to the intention so far.

Incidences of organ failure are increasing at steep rate due to modern lifestyles and damages caused to human health by environmental change. Many studies emphatically warn about various consequences to human health due to deterioration in air and water quality (Dam, 2003). Current huge demand for organs in emerging economy like India (Times of India, 2010) clearly depicts a picture where everyone should seriously think about creating a favorable attitude towards OD. Presently, the intentions displayed by people to do such a noble act are not visible in its true spirits. There is ignorance with regard to the procedures in donating organs, which results in nonmaterialization of good intention of a few favorable individuals (Randhawa, 1998). All these factors lead to acute shortage of organs causing a significant impact on avoidable mortality.

2.4 | Role of perceived risk in OD

Perceived risk influences belief (Cacioppo & Gardner, 1993) and empathy (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983); reduces benefit perception; creates the fear of body mutilation; and influences the decision of an individual to become a donor (Parisi & Katz, 1986). People apprehend improper medical care if donation decision is known to the medical team (Hyde & White, 2007), premature declaration of death (Childress, 1997), and risk of upsetting a family member (Radecki & Jaccard, 1997). Risk perception (financial and ethical risks) varies with gender (Finucane, Paul, Mertz, Flynn, & Satterfield, 2000) and is larger in women. Individuals take decision on the basis of costs and benefits associated OD (Dovido, 1984) as the perceived risk influences perception of associated with physical and psychological pain (Briggs, Piliavin, Lorentzen, & Becker, 1986; Sarason et al., 1993). Perceived risk in conjunction with demographic variables is an important indicator of behavior (Yavas, Riecken, & Babakus, 1993) but at the same time knowledge on OD attenuate risk (Allen & Daniel, 1993).

The objective of this paper is to understand the role of perceived awareness, perceived individual value, religiosity, family support in influencing ODI through ODA. This paper also addresses the moderating role of perceived risk in the formation of OD intention, which is so far not explored in the literature.

3 | CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Mismatch between the demand and supply of organs made researchers to study the attitude regarding willingness to donate organs. Factors influencing the decision to be an organ donor based on qualitative study by Irving et al. (2012) are (a) relational ties; (b) religious beliefs; (c) cultural influences; (d) family influences; (e) body integrity; (f) previous interactions with the health-care system (medical mistrust, validity of brain death, and fear of early organ retrieval); (g) the individual's knowledge about the OD process; and (h) major reservations about the process of donation, even in those who support OD. Irving et al. (2014) found the major reasons influencing OD intention were saving

lives, benefit to recipients, process of OD, positive media, positive closure, clarity of consent, body dignity, and religious and cultural beliefs.

Decision about donating organs of a brain dead often occurs in an unexpected situation, and hence, it is important to study the role of relatives in that situation with their views bound by religious values, deceased ones' wishes, and emotional support from others (de Groot et al., 2012). Increase in perceived knowledge and awareness regarding suitability of organ that can be donated, methods available for registration for OD, laws pertaining to OD, concept of brain death, and the likelihood of recovery after brain death can lead to a positive attitude and higher intention to donate organs (McGlade & Pierscionek, 2013). It is also seen that positive attitude related to previous conversations regarding OD and a good level of communication within families also tend to increase the discussion with family and thereby the intention (Murray, Miller, Dayoub, Wakefield, & Homewood, 2013).

This study considers seven variables based on the conceptual understanding from the literature. ODI is conceptualized to be dependent on four antecedents—perceived awareness, religiosity, perceived individual value, and family support—and the relationship is being mediated by ODA. Perceived risk moderates the linkage between ODA and ODI.

3.1 | Perceived awareness

Lack of knowledge about OD is a major reason for low registration for OD (Sanner, 1994). Awareness may consist of myths, rumors, or general understanding/misunderstanding about certain aspects of the OD process (Mostafa, 2008). Perceived awareness can be defined as the level of knowledge about various aspects of OD that can be verified for accuracy (Radecki & Jaccard, 1997). There are a number of studies that reported a low level of knowledge even when the general awareness was high regarding OD (Kim, Fisher, & Elliott, 2006). Research had clearly studied the link between knowledge, ODA, and behavior. Horton and Horton (1991) found that greater level of knowledge regarding OD process led to more positive attitude about donation, which in turn increased the actual behavior. Studies also show that OD behavior was associated directly with higher level of knowledge regarding the donation (Kopfman & Smith, 1996). Jones-Riffell and Stoeckle (1998) found that increased knowledge is the most important factor in forming attitudes towards OD. A recent study by Phillipson, Larsen-Truong, Pitts, and Nonu (2015) found that the awareness about the procedures and process is low, and it is considered as a barrier towards OD. Hence, we posit:

H1: *Perceived awareness about OD is positively related to ODA.*

3.2 | Family support

Donating organ in a country with opt-in condition requires family consent, and hence, family support is an important factor. Jones et al. (2009) state that the attitude and beliefs of family members was as an important factor for improving OD. Studies also established

that the attitude of near and dear ones tend to influence individual's decision-making process (Burroughs, Hong, Kappel, & Freedman, 1998; Rodrigue, Cornell, & Howard, 2006). It was found in the study of Blekher, Katz, and Gneezy (2014) that people tend to have decreased willingness towards organ registration due to the lack of support from family. Beliefs, rituals, and death taboos prevailing in the society make it difficult for OD to take place. Family support can be defined as the willingness and ability to discuss OD with family members to get a positive outcome (Morgan & Miller, 2002). Degree of open discussion and communication on superstitious beliefs and taboos with family will make the process of OD easier for a donor (Zouaghi, Chouk, & Rieunier, 2015). In case of brain death scenario, it makes the entire process difficult for the government, nongovernmental organization, and hospital, as they need to communicate with the family about the nature of the brain death of their loved ones and the family will not be in the state to accept the death (Sanner, 1994). Previous studies (DeJong, Franz, Wolfe, & Howard, 1998; Klieger et al., 1994; Lange, 1992; Molzahn, 1996) conclude that the effective communication between hospitals and relatives of brain death is important to increase the OD. Hence, we posit:

H2: *Family support is positively related to ODA.*

3.3 | Perceived individual value

Previous studies on values (both explicit and implicit) function as grounds for behavioral decisions (Shim & Eastlick, 1998). There is evidence that OD is motivated by the value perceived by any individual (Skumanich & Kintsfather, 1996) and that positive attitude and commitment to donation are significantly related to humanitarian and perceived values (Horton & Horton, 1991). Perceived individual value can be defined as primary value felt through performing the act of OD (Ryckman, Gold, Reubsæet, & Van Den Borne, 2009). Cleveland (1975) suggests perceived value as a major psychological underpinning in the decision to become a potential organ donor. Psychologically, Simmons and Anderson (1982) found that organ donors seem to benefit from a boost in their self-esteem that follows the performance of this altruistic act. Helping others motivated by empathetic concern for the victim (Batson, Duncan, Ackerman, Buckley, & Birch, 1981) and escape from personal distress associated with perceived suffering (Schaller & Cialdini, 1988) induces OD. Individual's value is a concept or belief about desirable end states or behavior that transcend specific situations, guide the selection or evaluation of behavior, and are ordered by relative importance (Schwartz & Bilsky, 1990). Hence, we posit:

H3: *Perceived individual value about OD is positively related to ODA.*

3.4 | Religiosity

A lot of religious beliefs and taboos related to death exist (Morgan et al., 2008). These myths and fear regarding death lead to mistrust

on medical practitioners. Lack of proper understanding and knowledge on brain death as real death (Horton & Horton, 1991; Radecki & Jaccard, 1997; Sanner, 1994) tied up with the religious belief is an important reason for people not donating organs. Religiosity can be defined as the level of impact the religion has about decisions related to OD. Education about medical procedures and experience of previous donors or recipient will help in breaking the barriers of ODs (Rumsey, Hurford, & Cole, 2003). Currently, religious leaders play an important role in making an individual understand about the beliefs, and every religion is positive about saving lives.

All religious leaders propagate positive attitude towards donating organs (Skowronski, 1997), and also, religious symbols have a positive impact on the formation of ODA (Guéguen, Bougeard-Delfosse, & Jacob, 2015). Majority of world religions (Ryckman, van den Borne, Thornton, & Gold, 2004) and religious leaders (Gallagher, 1997) support OD. Religion acts as an avenue for altruistic motives to be channelized in the form of OD. There is a positive relationship between religiosity and OD (Dixon & Abbey, 2000; Ryckman et al., 2004). Religion plays a very important role than it is believed to be (Oliver, Woywodt, Ahmed, & Saif, 2011; Sprung, Maia, & Bulow, 2007). Religious communities and leaders can enhance OD (Bener, El-Shoubaki, & Al-Maslamani, 2008; Phillipson et al., 2015). Religious beliefs is an important factor influencing one's thought when considering OD (Bresnahan et al., 2007) and an important reason individuals cite when consenting to donate organs (Morgan et al., 2008). Thus, religiosity plays an important role in constructing an attitude towards OD of an individual. Hence, we posit:

H4: *Religiosity is positively related to ODA.*

3.5 | ODA and ODI

Several studies show that attitude towards OD is strongly linked to intention and behavioral willingness (Horton & Horton, 1991; Kopfman & Smith, 1996; Smith, Haugtvedt, & Petty, 1994). This is consistent with a number of theories of persuasion, including the theory of reasoned action (Fishbein & Ajzen, 1975) that propose that there is a direct, linear relation between attitude and behavior. ODA was found to be a significant predictor for intention to donate organs (Delaney & White, 2015). ODA can be defined as the positive feel developed in the mind of an individual to donate organ (Ashkenazi, Miniero, & Hornik, 2006). Social psychology literature has established attitude as important predictor of behavior, behavioral intention, and explanatory factors of variants in individual behavior (Kotchen & Reiling, 2000). Many studies have specifically focused on the relationship between ODA and ODI and related behavior. ODI is defined as the expression of one's attitude towards becoming an organ donor (Lwin, Williams, & Lan, 2002). Knowledge and their attitude towards OD will give confidence to the individual to discuss about OD and their intention to donate organs with the family (Siminoff, Gordon, Hewlett, & Arnold, 2001). Hence, we posit:

H5: *ODA is positively related to ODI.*

3.6 | Perceived risk

Previous research had found that fear, perceived risk of body mutilation, and inadequate medical treatments were believed to have high impact on the OD decision (Schulz et al., 2006). Perceived risks include concerns about possible coercion of donors, future physical and/or psychological problem of donors, and lingering doubts whether or not truly informed consent is possible (Molzahn et al., 2003). Anxiety has also been found to negatively influence attitudes towards OD and willingness to register as an organ donor (Kopfman & Smith, 1996). Shanteau and Harris (1992) states that reluctance to donate organs may not be due to lack of knowledge or empathy but linked to unstated motivations, perceived risks, and unarticulated fears. Perceived risk is a fear that has a negative impact on OD (Schulz et al., 2006). Thus, it is assumed that perceived risk tend to influence the relationship between ODA and ODI. Hence, we posit:

H6: *Perceived risk moderates the relationship between ODA and ODI.*

Figure 1 summarizes all the hypotheses.

4 | METHODOLOGY

Data from 247 respondents were collected by administering a structured questionnaire directly to them. This cross-sectional study was conducted in Chennai, in the state of Tamil Nadu in India. Data were collected on convenience sampling basis during a period from February 2016 to March 2016. Response rate was 49%. Sample was composed of individuals between the age group of 15 to 30 years who are either students or working individuals; 55% of the sample were male, and the remaining were female; 36% of the respondents were Hindu, 34% were Christian, and 30% were Muslim.

All the variables were measured with multiple item scales used in the past research. Table 1 shows all the scale items, their sources, and relevant descriptive data. Data were analyzed using structural equation modeling. We first confirmed the measurement model before working on the structural model. A covariance-based approach using AMOS 20 was employed for analysis.

5 | DATA ANALYSIS AND FINDINGS

5.1 | Measurement model

A two-stage structural equation modeling approach with AMOS 20 is used to test measurement model and structural model (Anderson & Gerbing, 1988). Fit for the measurement model was reported as CMIN = 5.883, $df = 2$, CMIN/ $df = 2.941$, goodness-of-fit index (GFI) = 0.993, comparative fit index (CFI) = 0.991, root mean square error of approximation (RMSEA) = 0.071, SRMR = 0.024, normed fit index (NFI) = 0.986, RFI = 0.959, IFI = 0.991, adjusted goodness-of-fit index (AGFI) = 0.963, and PCLOSE = 0.225 showing a good fit without

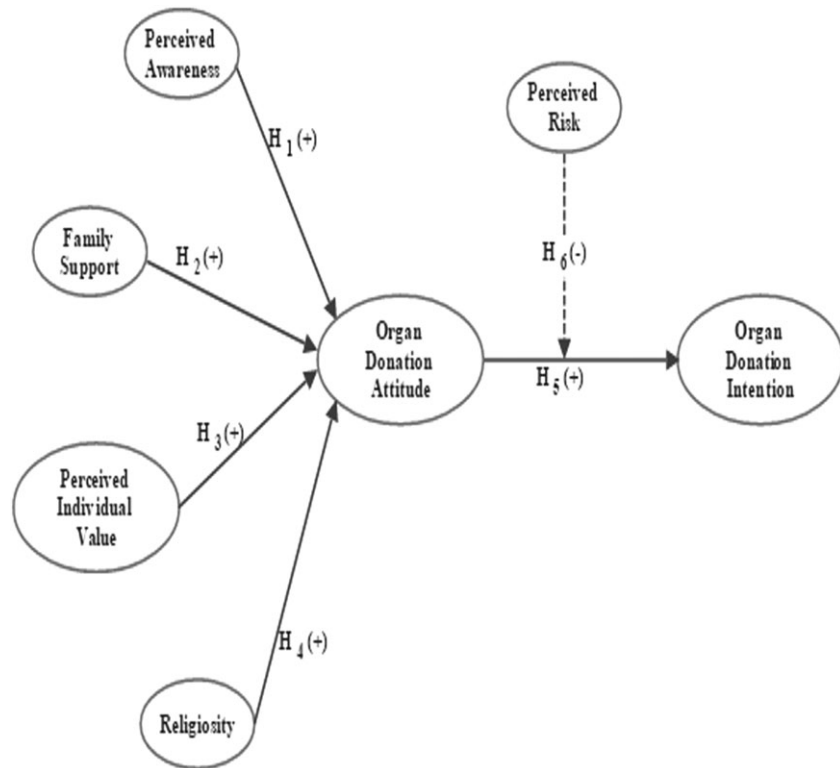


FIGURE 1 Conceptual model (with hypotheses)

adding error covariance. The values are within established cutoff limits (Hu & Bentler, 1999; Wheaton, Muthen, Alwin, & Summers, 1977).

To test convergent validity and discriminant validity, validity master, a tool developed by Gaskin (2012), was used, and the results are presented in Table 2. To assume convergent validity, composite reliability should be greater than 0.7, average variance extracted should be greater than 0.5, and composite reliability should be greater than the average variance extracted (Fornell & Larcker, 1981). As per Gaskin, discriminant validity is evident when average variance extracted is greater than the maximum shared squared variance. Both the validities are established for this model.

5.2 | Common method variance

As the study used both the dependent and independent variables from the same source in a single survey, several steps were incorporated to minimize the impact of common method variance (CMV). In order to reduce the socially desired responses, the respondents were never asked for any personal information and ensured the anonymity of the responses. But this could not completely eliminate the impact and hence tested for CMV using Harman's (1967) single factor test. It works on two steps; first, exploratory factor analysis was conducted by entering all the items to find the number of factors created. Because this gave six factors rather than a single factor and one general factor is not accounting for majority of covariance, it can be inferred that CMV is absent. The next step was to conduct confirmatory factor analysis for this common factor and to check for fit. The fit for common factor was reported as $CMIN = 6140.88$, $df = 350$, $CMIN/df = 17.545$, $GFI = 0.475$, $CFI = 0.372$, $RMSEA = 0.274$, $SRMR = 0.138$, $NFI = 0.360$,

$RFI = 0.309$, $IFI = 0.374$, $AGFI = 0.391$, and $PCLOSE = 0.000$, and it gave a poor fit concluding the absence of CMV.

5.3 | Structural model

The structural model had a good fit with $CMIN = 539.327$, $df = 307$, $CMIN/df = 1.757$, $GFI = 0.911$, $CFI = 0.954$, $RMSEA = 0.055$, $SRMR = 0.057$, $NFI = 0.901$, $RFI = 0.891$, $IFI = 0.955$, $AGFI = 0.866$, and $PCLOSE = 0.120$. All these fit indices were above the recommended cutoff value. Results showed all the hypotheses were significant, and they are summarized in Table 3. The result indicated that perceived awareness had a significant positive effect on ODA ($\beta = 0.78$, $p < 0.01$) supporting H1; family support is significantly impacting ODI ($\beta = 0.19$, $p < 0.01$) supporting H2; perceived individual value had a significant impact on ODA ($\beta = 0.20$, $p = 0.01$) supporting H3; religiosity had significant impact on ODA ($\beta = 0.22$, $p = 0.01$) supporting H4. ODA is significantly impacting ODI ($\beta = 0.33$, $p = 0.01$) supporting H5. Impact of perceived risk on the relationship between ODA and ODI was found to be significant ($\beta = -0.22$, $p < 0.01$) supporting H6.

5.3.1 | Test of ODA as a mediator

According to Baron and Kenny (1986), this direct and indirect paths are found out using multiple regression models, and they state that for a mediation to happen, either the direct path should be insignificant (full mediation) or the direct path can be significant with a lesser path coefficient than an indirect path through mediator (partial mediation). In the structural model, both direct and indirect paths were checked,

TABLE 1 Scale summary

Scale items	Factor loadings (λ)	Item total correlation (α)	Mean	SD
Perceived awareness (Lwin et al., 2002)				
1. An ideal donor is a young person who died from head injury	0.881	0.419	4.18	0.738
2. All religious groups support the concept of organ donation	0.703	0.464	4.32	0.731
3. Once I sign organ donor card, I cannot change my mind ^a	0.865	0.562	4.28	0.742
4. Organ donation does not result in any significant delay in funeral arrangements	0.826	0.597	4.17	0.757
Family support (Afifi et al., 2006)				
1. It is important for me to get the opinion of my family about organ donation	0.881	0.566	3.78	0.828
2. I expect my family's opinion about organ donation will be positive	0.550	0.555	3.55	0.931
3. I know to initiate the talk and get support of my family for organ donation	0.630	0.721	3.66	0.858
4. My family would be willing to offer their opinion and support for organ donation	0.463	0.615	4.05	0.645
Perceived individual value (D'Alessandro, Peltier, & Dahl, 2012)				
1. Signing up to become organ donor is the right thing to do	0.627	0.453	3.68	0.827
2. Organ donation gives purpose to my life	0.712	0.729	4.31	0.740
3. Organ donation is an easy way to help others in need	0.636	0.794	4.35	0.663
4. Being an organ donor will add meaning to my life	0.655	0.626	4.17	0.755
Religiosity (Cossé & Weisenberger, 2000)				
1. Organ donation is against my religious belief ^a	0.625	0.492	4.00	0.783
2. My religious institution propagates organ donation is life saving	0.576	0.609	3.76	0.785
3. My religion supports organ donation	0.765	0.497	3.98	0.704
4. My religious beliefs affects my attitude towards organ donation	0.592	0.570	4.05	0.639
Organ donation attitude (Cossé & Weisenberger, 2000; Morgan & Miller, 2002)				
1. I find the idea of organ donation repulsive ^a	0.806	0.796	4.02	0.628
2. I believe organ donation as an act of compassion	0.856	0.648	3.87	0.688
3. I would not allow organs of a loved one to be donated ^a	0.849	0.654	4.28	0.605
4. I view organ donation as a benefit to humanity	0.863	0.771	4.30	0.704
Perceived risk (Boey, 2002; Yeung, Kong, & Lee, 2000)				
1. I want my body to remain intact after death	0.760	0.747	3.62	0.862
2. I am worried the organs will be wasted or mistreated	0.761	0.622	3.61	0.889
3. I am worried about body disfigurement after organ donation	0.708	0.637	3.70	0.868
4. I lack trust in the medical techniques used by the health center	0.702	0.535	3.58	0.892
Organ donation intention (Thornton et al., 2006)				
1. I am interested in becoming an organ donor	0.854	0.367	3.93	0.723
2. I will start thinking about organ donation registration	0.545	0.356	3.85	0.744
3. I do not intend to donate my organs ^a	0.774	0.572	3.85	0.756
4. I will discuss about organ donation registration with others	0.555	0.461	3.72	0.834

^aItems were reverse coded.

TABLE 2 Convergent and discriminant validity

Latent variables	CR	AVE	MSV
Organ donation attitude	0.805	0.522	0.234
Perceived awareness	0.871	0.634	0.391
Family support	0.821	0.534	0.391
Perceived individual value	0.770	0.574	0.346
Religiosity	0.926	0.758	0.326
Organ donation intention	0.828	0.563	0.076
Perceived risk	0.761	0.577	0.341

Note. CR: composite reliability; AVE: average variance extracted; MSV: maximum shared variance.

and the result is presented in Table 4. All the mediated (indirect) paths were significant at $p < 0.01$. Direct paths from perceived awareness and family support were significant with the path coefficients 0.22 and 0.02, respectively, which is considerably less when compared with the mediated path. This supports the partial mediation of the variables, perceived awareness, and family support to ODI mediated through ODA. Direct paths from perceived individual value and religiosity were insignificant confirming the full mediation effect.

Mediation effect can further be tested by calculating the z value using the formula $z = (a*b)/(b^2s_a^2 + a^2s_b^2)^{1/2}$ (Sobel, 1982). In the equation, "a" denotes the regression coefficient for the association between independent variables and the mediator, and s_a is the standard error of "a." Similarly, "b" is the regression coefficient for

TABLE 3 Hypotheses and results

Hypothesis	Path coefficients	Result
H1 Perceived awareness → ODA	0.78**	Supported
H2 Family support → ODA	0.19**	Supported
H3 Perceived individual value → ODA	0.20**	Supported
H4 Religiosity → ODA	0.22**	Supported
H5 ODA → ODI	0.33**	Supported
H6 Perceived risk → ODA and ODI relationship	-0.22**	Supported

Note. ODA: organ donation attitude; ODI: organ donation intention.

**sig at 0.05.

TABLE 4 Mediation effect

Mediated path	Path coefficient	Direct path	Path coefficient
Perceived awareness → ODA	0.78**	Perceived awareness → ODI	0.22**
Family support → ODA	0.19**	Family support → ODI	0.02**
Perceived individual value → ODA	0.20**	Perceived individual value → ODI	0.06 ^{ns}
Religiosity → ODA	0.22**	Religiosity → ODI	0.29 ^{ns}
ODA → ODI	0.33**		

Note. ODA: organ donation attitude; ODI: organ donation intention.

**sig at 0.05.

^{ns}non significant.

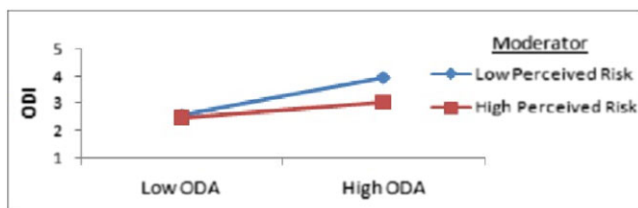
TABLE 5 Multiple regression output

Dependent variable	Independent variables	Standard β coefficient	Adjusted R^2
Organ donation intention	ODA	0.349***	0.345
	ODA × PR	-0.219***	
	PR	-0.259***	

Note. ODA: organ donation attitude; PR: perceived risk.

***sig at 0.01.

the association between mediator and the dependent variable, and s_b is the standard error of "b." The z values for independent variables are shown in Table 5. All z values are significant at $p < 0.01$. This supports a mediated model in which the indirect effect of independent variable on dependent variable via mediator is significantly different from zero (Iacobucci, Saldanha, & Deng, 2007).

**FIGURE 2** Moderation effect. ODA: organ donation attitude; ODI: organ donation intention

5.3.2 | Test of perceived risk as a moderator

To test the impact of moderation, it is required to compare the regression coefficients of ODA, perceived risk, and the interaction terms for ODI. Hence, a multiple regression model with the mean centered scores for ODA, perceived risk, and the interaction terms as independent variables and ODI as dependent variable was tested. Figure 2 shows the output for the multiple regression, and the moderation effect is plotted using a graph.

Regression model shows a good fit with adjusted R^2 value as 0.345 at $p < 0.001$. It also shows that the interaction is having a significant negative β value of -0.219 ($p < 0.001$) providing support for the H6. Moderation effected is plotted using Stats tools package (Gaskin, 2012). The graph shows that perceived risk is a negative moderator that dampens the relationship between ODA and ODI.

Structural model is shown in Figure 3.

6 | DISCUSSION

The study proposed an integrated framework with four antecedents causing ODI mediated through ODA with perceived risk moderating the relationship between ODA and ODI and found support for the same. Strongest linkage of ODA was noticed from perceived awareness ($\beta = 0.78$), implying that the individual who is aware and knowledgeable about OD will tend to create a positive attitude towards OD. Relative importance of other antecedents was religiosity ($\beta = 0.22$), perceived individual value ($\beta = 0.20$), and family support ($\beta = 0.19$). R^2 value for ODA was 0.788, which indicates that the four antecedents account for 79% of the variance in the model. Result shows full mediation with respect to two antecedents: perceived individual value and religiosity, and hence, these two causes ODI fully mediated through ODA. ODA partially mediates the other two variables: perceived awareness and family support. This shows the mediation effect of ODA, giving an insight that ODI can be increased by increasing ODA.

Perceived risk is acting as a moderator in the relationship between ODA and ODI. At lower perceived risk, ODI tend to increase with ODA than in the presence of higher perceived risk. This can actually increase the conversion of attitude to intention, leading to the increasing number of the donors.

6.1 | Implication

It is found that perceived awareness plays an important role in formation of ODA. Hence, measures have to be taken to increase the level of individual's understanding about OD and thus increase the perceived awareness. This can be achieved through campaigns that indicates the need for OD and associated goodwill, which can be propagated through mass and social media. This study also established that religiosity influenced OD. Hence, religious leaders can be persuaded to communicate about OD. Preaching of religious leaders about the importance of OD and the implications of this act according to their specific religion can help in the increased impact

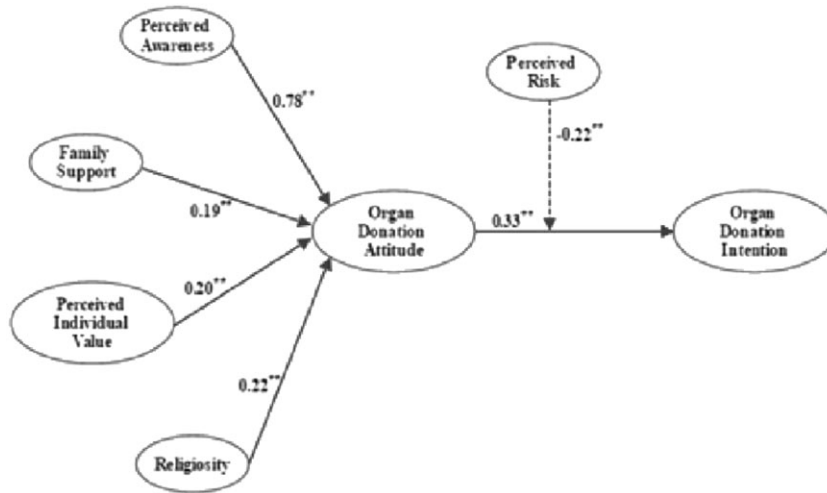


FIGURE 3 Structural model (with path coefficients)

on ODA formation. Thus, campaigns that can be made specifically through all religions to convey the worth of donating the organs in saving the lives of many need to be initiated.

Family support is a significant antecedent of ODA, and individuals can be given counseling for discussing their positive attitude towards OD with their family. Individuals can also be made aware of how to communicate his or her positive attitude of OD to the family members. This makes the feeling of individual towards OD understood by the family, which makes them act positively at the time of requirement of OD.

Insurance sector can try to incorporate the insights and produce a product that combines the life insurance policy with the social responsibility of donating ones organ if met with a brain death scenario. Policy can include a rider without extra cost for the life insurance policy holders. Family of an individual will benefit from the rider by donating organs of the individual who is declared brain dead. This can lead to additional insurance cover and will make the situation of OD associated with brain death easy as the family gets benefitted. Insurance company gets benefitted because this bundling gets associated with their corporate social responsibility and helps them to achieve the required amount spent for corporate social responsibility activities.

Nonavailability of organs increases not only waiting time for transplant but also the mortality. Many die during the waiting period, as they do not get organs for transplant at all. Every year, around 0.15 million people are diagnosed with kidney failure in India, and organ transplant is their only way of survival. Out of those patients, only 5,000 were able to get kidneys for transplantation. Effectively, only 3.3% of the patients who need kidney transplant for their survival are getting it, and significant percentage of them die without/waiting for transplantation (medindia.net, 2015). This astonishing figure can come down drastically, and deaths could be prevented if awareness is generated about OD (Times of India, 2010).

Nonavailability of organs is due to the lack of awareness and knowledge of OD. India has low OD level (Sakhuja & Sud, 2003). OD can be enhanced, if the people are aware of OD and carry a donor card (consenting to donate organs in the event of death) along with them. Avenues for organ harvesting from cadavers is practicable in India, as death due to accidents is very high in India, and out of 0.14

million accident victims, 93,000 are brain dead (Mohan, 2011). After natural death, only a few organs can be donated (like cornea and bone), whereas after brain death, almost 37 different organs and tissues can be donated (doctor.ndtv.com, 2011). This assumes greater significance, as the brain dead organs have better viability than naturally dead (MedIndia, 2015). Despite the enabling factor like large number of brain deaths occurring, there is lack of organ harvesting from them or others that is leading to shortage of organs.

Problem in India happens at translation of intention into behavior. Interventions are designed to bring about a desired change or behavior. Intervention could be behavioral based (Ajzen, 1991); hospital based (Beasley et al., 1997); financial based (Becker & Elias, 2007; Wellington & Sayre, 2011); or legal based like that in the Netherlands where an individual over 18 years should be declaring their willingness to donate organs (Brug, van Vugt, van den Borne, Brouwers, & van Hooff, 2000). Legal interventions are not generally a first-line intervention especially in a sensitive issue like OD. Hospital-based interventions are relatively inexpensive focusing on reaching families during a time of critical decision making. Financial incentives would increase the supply of organs but increase the surgical cost and exploitation of low income groups (Becker & Elias, 2007). Behavioral intervention is a proactive strategy, and the others are reactive strategies. Extant literature (Bae & Kang, 2008; Bresnahan et al., 2007; Hyde & White, 2009, 2010; Park & Smith, 2007; Radecki & Jaccard, 1997; Siegel, Alvaro, Lac, Crano, & Dominick, 2008) has many studies based on intervention using theory of planned behavior. Hence, we used this model with other variables as our theoretical base. In this study, ODI is conceptualized to be dependent on four antecedents—perceived awareness, religiosity, perceived individual value, and family support, the relation being mediated by ODA. Perceived risk is a moderator in the linkage between attitude and intention.

Social marketing can play a role in increasing the intention. First, they can bring about awareness by giving appropriate information about brain death and educate people about the demand and supply gap of OD. They can help in creating different campaigns to make people aware of donation. Second, they can set up counseling centers for people willing to become donors and educate them on the way to communicate this to their family. Social marketers can run seminars

regarding OD and the importance of it and as everyone will come with the family. Next, measures can be taken to convey people about the positive attitude of every religion in this context. Almost every religion views OD as a good deed, and hence, appropriate measures can be considered to reach out to public at large with the help of religious institution's support. People should be made to feel the importance of OD by making them understand the situation in which the donation was required and the value that it has brought to the life of other person.

6.2 | Limitations and future scope

Variables like OD behavior measured using possession of a donor card, reciprocity, and knowledge as a second-order dimension are not included in the study. There is an assumption of linear relationship in this study, but future research can consider nonlinear relationship, as in reality, most of the relationship does not vary linearly. Relative small size of the sample and geography (India) is also a limitation. Future research can incorporate other behavior variables also so that the actual behavior from the attitude formation and intention can be studied.

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How to cite this article: Mohan G, Aswathy AA. Organ donation in India—A social marketing perspective. *Int J Nonprofit Volunt Sect Mark*. 2019;e1637. <https://doi.org/10.1002/nvsm.1637>