Chapter V
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CONCLUSION

All great rivers culminate in the vast expanse of water called the Ocean. All research culminates in the vast expanse of knowledge which is an ocean unlimited in concept or conclusion. Just as knowledge is an on going process, research too is a vibrant and continuing exercise. Hence, the norms of research entails listing of findings, arriving at conclusions, making recommendation and outlining further areas for research, whereby research continues on and on.

The main thrust of the present study is to evaluate the willingness to pay with specific reference to solid waste management in Hospitals. The study has analysed three hospital in the Chennai area, in Tamilnadu, India and has interviewed 300 respondents, 100 from each area of Parrys, Triplicane and Adyar. The study has identified independent variables such as age, sex education, income, nature of employment, distance, size of family and assets and the dependent variable WTP. The study has used the Cobb-Douglas Linear Regression Model to arrive at the levels of significance in the Linear Regression Model. The overall regression has shown that age as a factor is insignificant for the various age groups. In willingness to pay age does not play any significant role. However, in Parrys area the age groups less than 25 years and 45 years and above have shown a greater inclination towards WTP.
The general public especially in the area which is mainly dependent on
government hospitals, there is a greater inclination towards WTP and also age as a
factor comes into play when one has reached the middle ages like 45 years and
above or at less than 25 years when life is starting with a full complement of
expectations. In view of the above conclusion, it is recommended that full use be
made of the media to propagate awareness of WTP norms and methods.

The study has shown that 165 persons (55 per cent) only are currently being
exposed to awareness through media. This needs to be fortified with regular
programmes, institution-wise and for the general public through well worded
slogans and appealing graphics. It is suggested that for the city of Chennai which
has a 45 lakhs per day commutting population through the Metropolitation
Transport Corporation buses, the rear side of the tickets which is now being wasted
as empty space may be utilised to further the concept of WTP and Corporations
and industry can aid in inculcating waste management norms in the minds of the
public through a propaganda campaign on the rear side of bus tickets. It is
understood that MTC has been taking initiatives by floating tenders etc to regulate
this channel of advertisement. The NGOs and government should come forward to
sustain the Metropolitan Corporation's efforts to streamline this process and avail
of the immense opportunities presented through this avenue of getting the message
across to the public in Chennai. This concept, if tried and found valid in Chennai,
could be extended to other metropolitan cities and rural areas to transport worthy
messages.
The independent variable income when regressed shows a negatively significant value (-0.108) which means that irrespective of the level of income WTP is an accepted concept. Again in Parrys, which is mainly dependent on Government hospitals, all levels of income are negatively significant. In Adyar income is not a factor with regard to WTP. It is to be borne in mind that the sample does not extend beyond the Rs.10000/- per month limit and so the affluent sections have not participated in the study. Even those not so affluent evincing interest in WTP, it can be safely assumed that the more affluent may be even more willing to pay. The reason for this eagerness can be attributed to the fact that there are any number of areas that need to be fortified and strengthened for the hospitals in Chennai to have a healthy and sanitized surrounding. In this disposal of solid waste, especially hazardous waste forms the crux of the problem.

The study has revealed that both Government General Hospital and the Malar Hospital have installed incinerators. The study has also shown that the cost is most economical in Government General Hospital (Rs.1.24 per/kg/day) compared to the private Malar Hospital (Rs.13.6 Per kg/day). The Malar Hospital seems to have installed an incinerator which has only 15 kg per hour capacity for a cost of Rs. 15 lakhs, while the Government General Hospital has an incinerator with 50 kg per hour capacity which has cost them only Rs. 12.5 lakhs. Though the Malar Hospital claims to have a double chambered incinerator, the use per day has not been taken cognizance of, with the result, their incinerator appears to be under utilized leading to escalation in operation costs. It is significant to note that what costs Rs. 1.24 for a Govt. Hospital with a lower cost equipment and higher per day working of equipment, is more than ten fold for a private hospital with a higher outlay on equipment.
The scenario presents a gloomier picture in the light of the recent ban imposed by the Tamilnadu Pollution Control Board (TNPCB) on the use of incinerators in hospitals. The TNPCB in its efforts to control the dioxin levels in the city's atmosphere has decided to ban the use of incinerators in hospitals. The TNPCB is initiating steps to identify land on the outskirts of the city in Vandalur area to install a common incinerator which could be used to dispose of, hazardous waste emanating from the hospitals in Chennai. This unforeseen situation would further escalate costs for both government and private hospitals in outlay and maintenance of their equipment. The Kasturiba Gandhi Hospital, one of the selected hospitals, is at present disposing its hazardous waste by burning in the open. Perhaps, the TNPCB's order regarding the ban would make the other hospitals take recourse to the open burning procedures.

The TNPCB being a governmental agency, has the power to direct stoppage of operation and implement bans. But ordering the stoppage of a facility without an alternative is not sound economic policy. Even though the respondents in the study area may be willing to pay irrespective of age and income, such near sighted and non-application of mind actions will put paid to developmental efforts and will ultimately retard economic progress.

The TNPCB has the expertise and manpower to innovate, implement and evaluate various programmes of waste management and improving techniques and methods already in existence. Agencies like the TNPCB should work in consortium with government departments on the one hand to help shape policy and the
implementors of such policy like the Hospitals, Hotels etc should work with the
general public to create awareness and thereby evaluate their policies. The main
lacuna in the Indian system of officialdom seems to be too water tight
compartmentalization that one organization, Government or non-Government
seems totally oblivious of what their counterparts are doing leave alone others
engaged in the same area and / or other area. There should be cohesion of action
especially with regard to WTP and economic valuation of projects and proposals.

A recent occurrence in Chennai will high light the need for proper planning
with regard to WTP. A toll was imposed for a stretch of the East Coast Road which
led to many scenes of acrimony, because the authorities had not taken into account
the fact that many suburban residential colonies were in existence beyond the toll
point on either side of the road. The authorities should have either created a by pass
for the residents to reach their homes or should have located the toll point beyond
the residential colonies. Hence, it is recommended that adequate thought be paid
before envisaging any tax/toll structure.

The study has shown that there is willingness to pay up to Rs.250/- starting
from Rs.50/- i.e. a range of Rs.200/- the mode rests with the Rs.100/- category.
Those interviewed, a majority were willing to pay (228 persons, 76 per cent) for
infrastructure facilities and their improvements. Years ago, the practice in hospitals
was to collect a certain amount towards bed charge/room rent, which would
include the nursing service charges. But at present the hospitals are levying
separate nursing charges etc. Hence a comprehensive policy on what amount
should be charged for each of the facilities offered should be formulated. This could be done through committees specially constituted for this purpose, having economic and cost accounting experts as also lawyers, doctor and other professionals, and should include at least a couple of members of the general public. This democratic approach to problem solving would go a long way in eradicating the various ills that seem to beset official planning especially with regard to Hospital Solid Waste Management.

The study shows a distribution of 263 men (88 per cent) and 37 women (12 per cent). It has already been mentioned that women are generally not forthcoming with regard to answering questions. The Census 2001 shows that for every 1000 males there are 951 females which means women are nearly as many as men and should have a 50 per cent voice in decision making. It is unfortunate that even the women Representation Bill of 33 per cent reservation for women in elected bodies is still hanging fire in Parliament. Initiatives should start from the grass roots. If a certain percentage of women representation is insisted upon on all governmental and non governmental undertakings it would go a long way in bringing about parity between men and women. It is a mockery of women's liberation when a body of all men sit down to discuss women's welfare and women's issues.

The study has shown the maximum number of respondents (66 per cent) live within a distance two kilometers from a medical centre. Chennai has the proud privilege of having medical institutions within easy distance of reach in all areas of the city including the selected areas such as Parrys, Triplicane and Adyar.
The rosy picture stops there, because the metropolitan roads are more horrendous than scaling dizzy heights or delving depths. The ruts, the pits, the dug up portions of every road for worthy causes like laying fibre optic cables, the unpaved, unmacademized structures take one to the very brink of danger. These roads even for a healthy person is a nightmare to traverse, one can well imaging the plight of those travelling while sick and ailing. The WTP concept should be an interlinking concept, where by a multitude of facilities can be offered by the collection of WTP amounts. Once again it is reiterated that the various government and non governmental agencies should work together on the recommendation of valid committees and should also periodically and regularly evaluate their projects and proposals.

The study has shown water supply to be a major problem faced by nearly half the respondents (42.3 per cent). It is well known that most diseases stem from contaminated water. There are skin diseases which come due to wading through contaminated rain water. There is constant water logging on the roads, especially during the monsoon in Chennai. Sometimes sewage overflows the drains and gets logged leading to more health hazards. The willingness to pay for health improvement should be fully utilized and proper service should be rendered to improve the general quality of life by spending available or collected economic resources on such of those projects which will help remove the above mentioned health hazards.
The study has shown immense scope for innovation and improvement. There are ancillary topics such as liquid and other wastes which need to be studied with regard to WTP. There are other organisations such as Hotels, Air, Rail and Bus terminals, Cinema halls and other places where the public congregate and where waste is generated. The economic valuation of these areas provide further scope for research. WTP by itself could be further researched from the angles of toll/tax/service charge/donations with tax exemptions. All experience is an arch, where thro' gleams the untravelled world, whose margin fades forever and forever as one moves on.