"A Study of Commercial Viability of Use of Business Model Linked to Waste Management Problems in the Pune Region"

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A. RATIONALE AND SIGNIFICANCE OF THE STUDY

1. Introduction

In view of growing complexity of the waste that is generated in India and the dynamic operating environment, as regards increase in population, there is enormous increase in the problems of health related issues due to which the economic development of any nation can come to a grinding halt. Therefore the study of waste management and its problems have become very significant, especially in the areas of finance and business administration. Waste at the apex level may be visualized as a non avoidable ingredient and has become a part and parcel of daily lives. While wastes can take any form ranging from household, industrial, constructional that has been instrumental in causing life threatening diseases, it is vital to attack the same when they are in the nascent stage.

The present research upholds the view that it is vital to understand the underlying problems of Waste Management in the Pune region since almost 30% of the waste generated is not collected and is dumped and littered on the streets.

Therefore to understand the underlying problem of these inefficiencies in the administrative process of waste management and study the commercial viability of using an effective business model that is linked with the waste management, the present research becomes of extreme importance.

The present research is an exploratory research to understand the current business practices that are followed mostly by the unorganized sector and the reasons for their failures in consistently and successfully carrying out the waste management processes in a smooth manner.

Waste Management problem, in a broad sense, is any method — qualitative and/or quantitative — that can be assessed in a systematic way by applying the blend of qualitative and quantitative techniques. The goal of any of these methods is to help the decision-maker to choose a course of action, giving a better understanding of the possible business models that could be used so as to create a win-win situation in terms of waste minimization and in turn address the human problems of health related issues coupled with on the brighter side for usage of business models through the research under process that could provide employment opportunities to the deprived section and also Indian masses in an effective way that can predominantly benefit poverty alleviation.

Waste management relates to many areas such as

a. Waste Generation
b. Collection of Wastes
c. Transportation of Wastes
d. Reuse of Wastes
e. Recycle of Wastes
f. Disposal of Wastes in the Landfill (Land allocated for dumping of wastes).

2. Purpose of the Research

There was a general observation and with a social awareness it gave an understanding that Waste should not be seen as Waste and this could be converted into an opportunity. Experience and interactions provided the insight that Waste Management is mainly carried out by the deprived section of the society and with emerging problems of social stigma, lack of proper knowledge of the waste business, lack of fund availability could be major problems in the current waste management business practices.

Moreover Waste has got much importance in the Indian Economy during the liberalization period. The foremost among the challenges faced by India and particularly the Pune region in the wake of burgeoning pollution and health hazards, it has become imperative to understand the underlying problems of wastes and managing them effectively.

Since the very nature of wastes that comes in a mixed form and segregation becomes an important element, this leads to an understanding that considerable knowledge base is required to be improved so as to make the waste management system efficient.

The other factor that is pertinent is in India the study of Waste management is seldom looked upon as a separate branch of education from a commercial angle. Thus the study

of waste management becomes extremely important as regards its inquiry with respect to the current business model for waste management that is practiced. In turn the question that arises is that since the waste generation is in abundance than naturally there is enough enormous growth potential by following efficient business practices with the usage of right knowledge base, enough Government spending on education of Waste management and consideration of making this a full time career.

Therefore the very purpose of the research study states that since the Government of India is keen to make effective policy initiatives in this regards such as the "Municipal Solid Waste management Rules 2000" by making the Municipal Corporation responsible to Collect, Segregate, Transport, Process Wastes in a scientific manner in line with the State Governments enforcement initiatives for the implementation of the provisions of the rules. Moreover with the recent policy initiatives such as Solid waste management rules 2016 (More stringent rules as compared to the earlier) then this has enough evidence that there is enough scope for development and progress from all sides.

The Government paucity of funds as is revealed by Pune Municipal Websites has a lot to say as regards this. Thus Solid waste can prove to be an asset and not waste if resorted to efficient handling process

The present study of Waste Management would be a blend of Descriptive Research and Exploratory as in most of the social science and business research such type of Research is generally carried out

The Survey method could also be used for interviews to understand and investigate the reasons of the business failure models taken up mainly by the lower section of the society in the Unorganized sector as regards Waste Management is concerned.

Therefore, the overall purpose of the research is ***"to investigate problems in Waste management and studying the opportunities for making Waste as commercially Viable Business in Pune"***.

B. A SURVEY OF WORK DONE IN THE RESEARCH AND THE NEED FOR MORE RESEARCH

1. Literature Review

The study of literature review suggests that wastes can take any form such as Food wastes, Rubbish, Commercial Wastes, Institutional Wastes, Street Sweeping wastes, Industrial Wastes, Constructional Wastes, Demolition wastes, Biodegradable wastes, Hospital wastes Sanitation wastes.

As per the Government notification, the average wastes that is generated in India is around 62000 million tones, and this is expected to be increasing at an exponential rate with the increase in population.

a. With a Literature Review and scholarly articles on Municipal Solid Waste management in Indian cities, Mufeed Sharholy (Dept. of Civil Engg, Jamia Millia Isalamiya (Central University) New Delhi, India Central (Pollution Control Board) -12th April, 2007 mentions about the Solid Waste Management as one of the major environmental problem of Indian cities. 90% of the Municipal Solid Waste is disposed of unscientifically in open dumps and thereby creating serious Land-fills problems to public health and environment. The problems in waste management as was mentioned in the literature review was as regards the Characteristics of Generation of Waste, Collection, Transportation, Disposal (Unscientifically), Treatment and Technologies of Municipal and Solid Waste Practices in India. Following the same analogy this could be a major area for research in the Pune area as regards the Waste management is concerned.

b. It is vital to also understand the best practices in the world wherein Literature review as regards "The business model of Solid waste management in Sweden- case study of two municipally- owned companies by Herve Coveilec, Torteif Bramyrd and Johan Hultman that combined the three types of activities, public service activities that collect Solid Waste from households, commercial establishments and industry, processing activities that transform the waste and marketing activities that enable products and recycled material to re-enter the economy. The historical success of the companies (NSR-Northwest Scania Recycling Company Ltd.) and SYSAV ,(South Scania Waste Company, Ltd.) that rests on their ability to create value by combining the three which is mutually dependent types of activities.

Effectively it is worth noting to study the best practices and consider the application and the possibility for applying the same in the Pune region.

c. The other literature review as regards "Business Models for Integrated Waste Management, an integrated solutions that could address environmental and health issues by reducing, reusing and recycling household and industrial waste. By H.Corvellec, 2012, This paper describes the business model of Municipally owned MSW (Municipal Wolid Waste) companies- Waste management and Research.

d. It is worth noting that the Managing Director Mr. Mahesh Babu, IL&FS Waste management and Urban Service Ltd. Has given some insights of the business model that is carried by the company and also have provided the problems, opportunities, barriers and way ahead that may be beneficial in using the same in the Pune region context of Waste management.

2. Research Problem

As from the study of literature review the problems as regards Wastes management is as follows

a. Around 62000 tonnes of MSW generated per annum in Indian Cities (As per the Government websites)

b. Open dumping a common practice with no scientific closure of landfills (Refer literature review by ILFS waste management, research paper

c. Negligible Work on Waste Management, its reuse and recycling

d. The Reduce, Recycle, Reuse is a difficult and costly preposition.

e. The Private Investors cannot generate reasonable profits in Waste management without the aid from the Municipal Corporation

f. Study also states that Illegal Wastes in India dump wastes to the sides of the streets therefore 30% of the total waste that is generated is not collected that result into problems of serious nature resulting into bad odor and health related issues such as asthma, bronchitis etc..

g. Waste management is mainly carried out by people from the lower segment of the society which have no formal education of waste management and therefore due to lack of understanding of the wastes important and valuable ingredients of waste matters could be ignored..

h. Studies reveal that most part of the Wastes have no use and with improper knowledge the easiest method of Land filling (dumping) is done with no proper long term planning.

i. Experience states that there is extreme inconsistency in the individuals carrying out the business for a longer duration due to adequate knowledge, social stigma, lack of funds

j. Illegal dumping of wastes has also resulted to destroy river waters that needs immediate attention.

C. A STATEMENT OF AIMS AND OBJECTIVES

1. Objectives of the research

1) To study the current problems in Waste Management

2) To seek business opportunities by overcoming barriers in Waste Management

3) To make Waste Management an effective process with the help of Pvt. Participants and the Present stakeholders (Such as Waste Generators, Waste pickers, Waste transporters, Waste recyclers, Waste re-users mainly in the unorganized sector)

4) To avoid pressure on Landfills due to illegal waste dumping

5) To help raise the standard of living of the people in the unorganized sector working currently in the area of waste management

Beside the general purpose of the research, the following specific objectives that have been mentioned in the research:

- Identifying the current problems in the business practices that is followed in the Pune region
- Quantifying these problems.
- Studying the business models as brought in by the literature studies.
- Studying the usage of these practices for Waste management practices in Pune region.
- Recommend action plan for the use in Waste Management in the Pune region
- Making the Waste management system more efficient and effective as regards Generation, Collection, Transport, Recycle, Reuse and Disposal of Wastes in the Pune region
- To help the Government initiative for a Clean India as regards the Pune Region is concerned.

D. METHODOLOGIES AND TECHNIQUES TO BE USED

1. Hypotheses of the research

According to the objectives of the research, the present research is probing to find the answer to the following questions:

H1: There is a significant opportunity for private investors in PPP business model in waste management in Pune.

H2: There is a positive impact of PPP model for waste management in employment generation and raising the standard of living of people below poverty line.

H3: Effective waste management system creates 0% Land fill.

2. Methodology of study

2.1 Questionnaire Structure

In this research we would be using questionnaire and interview the waste management operators in the Pune region. The questionnaire will be prepared on the expert advice to bring about relevance of the data to be generated and collected and developed with the help of expert guidance and professionals.

2.2. Research design

In this research we would be using questionnaire and interview method of Research so in line with this and with careful thought

a. Randomized block design is found to be a suitable method , as this falls in line with the Area Sampling method, in which samples from different areas of the Pune region would be collected by means of Area sampling method and these could be used for building different blocks.

b. Simple and Complex Factorial Design method for Research is also found to be suitable in situations where the effects of formal education could be required be measured in case of Waste handling and management workers in the Pune region.

2.3. Population and Sampling method

The list of Population of The Waste Management operators can be taken from the Just Dial that are almost 500 in the Pune region. The list is grouped area wise in 15 groups. The area sampling method will be used and the sample size could be around 150 and the analysis is done on elements within strata by using area sample method that can cover around 30% of population. This could be the sufficient sample size to cover the whole of the Pune region.

2.4 Collecting the data

The research will be conducted both from the Primary and Secondary data

The Primary data will be generated through personal interviews of various stakeholders in the Waste management system such as

a. Waste generators from Pune region

b. Waste pickers and carriers in Pune region

c. Waste business operators in Pune region

The Secondary data could be generated from

d. Academic journals, research papers, MCCI, Pune Municipal Corporation Waste Management Websites, Google Scholarly articles

2.5 Data Analysis

Coding, Editing, Tabulation in the course of Research work can help data analysis

2.6 Hypothesis Testing

Use of Coding, Editing, Tabulation

1. T-Tests of Hypothesis is the most suitable testing system ,
2. Moreover Regression Analysis can be used in performance of testing depending upon the requirement tests can be conducted to verify the correlation between independent variables

2.7. Scope and limitation of study

The research work will focus mainly for the Pune region only.

However for generation of primary data as regards Private participants may be required to be accessed in other Indian cities to understand their system of operations.

E. CONCLUSIONS EXPECTED AND THEIR POSSIBLE VALUES

Conclusively the research work conducted would be extremely beneficial in many ways such that

1. With the use of Public-Private partnership model more investors would consider to invest huge funds which also encourage entrepreneurship opportunities for young talents in India.
2. The funds generated would result into less financial burden on the Government.
3. The Waste management opportunities would result into generation of employment for the poorest section of the society. Moreover with the investment in education of this nature would also result into increase of knowledge base in Waste management
4. This could perhaps change the entire outlook of Considering Waste as a Waste which could then transform into a positive way of looking at as “Waste as Invest”.
5. This will also help in utilizing effectively the natural resources for power generation and recycling of plastic material, which in turn would result into bringing down the cost of raw material inputs to a considerable extent.
6. This pilot study in Pune region could go a long way in fulfilling the mission of Clean India.

F. PLAN OF RESEARCH

The research plan works will be done with extensively adhering to the time management considering the stipulated time provided by the University:

1. The research methodology course work will be strictly adhered for giving quality in the above research
2. Data Collection and Field work will properly planned for generating correct and relevant information for the proposed research work. This can be related to actual meeting the unit holders such as Waste generators, Waste carriers and transporters, Waste business operators in the Pune region
3. Libraries such as British Library and EBSCO and Research Center material will be used for extensive literature review.

4. Various International journals, national journals accepted and valued by the UGC will be referred to data validation
5. Contacting Various organizations in Waste management in India such as
   a. Banyan Nation (Plastic recyclers)
   b. Conserve India (Plastic recyclers)
   c. Gain Waste
   d. GreenNerds Solution
   e. Indian Green Service
   f. Let's Recycle
   g. Sampurna Earth
   h. Waste Ventures

   are some of the organizations who are potential organizations for generating data required for the above research plan
6. The research work would also require for learning of SPSS Software for speedy conduct of work. Therefore to meet this end training institute will be joined
7. Daily at least one hour will be used for research work and holidays will be utilized for Research field work.
8. To save time telephone and emails would be used to collect primary data wherever possible.
9. The Research guide who is an important element in the process will be contacted from time to time depending upon his availability, schedules etc.

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