

Are Privatized Municipal Solid Waste Management Services Socially Sustainable? Empirical Insights from Implications for Key Stakeholders

Kiran Sandhu

*Associate Professor, School of Planning, Guru Nanak Dev University,
Amritsar, India
kiransandhu13@gmail.com*

Abstract

The neo-liberal economic ideology prevailing globally has enabled larger private sector participation in development activities. The rationality of private sector participation in municipal solid waste services centres on the premise of it performing more competently on all the fronts and the 'privatization mantra' has been fast adopted by several municipalities across the country. In the Indian context, with the turn to liberalization, the late 1990s onwards has witnessed increasing involvement of the private sector in municipal solid waste management operations.

While its positive impacts, particularly on the operational and economic side, have been highlighted by several researchers, of equal or more consequence are its impacts on the social side, the stakeholders in particular. As such can privatization of municipal solid waste services be seen as a vanguard of social sustainability, steeped in the faith that it stems positive spillovers on all fronts? In a bid to answer this research question, the Author undertakes explorative research in Amritsar city, India, examining the impacts on four principle stakeholders, the informal waste sector, the public sector sanitation workers, the private sector sanitation workers and the community in terms of equitable access to the services. The level of analysis aims to offer a deeper understanding

of the social outcomes of privatization of municipal solid waste services. The data for analysis is largely sourced from archival and documentary evidence, semi-structured interviews of the target stakeholders as well as supplemented by household survey and direct observations by the researcher.

Keywords: Privatization, Municipal solid waste, Informal, Public, Private, Amritsar

Introduction

Privatization can be seen as one of the prime outcomes of the neo-liberal economic order that has found deep roots since its gradual initiation in the late 1980s and early 1990s. Almost all sectors of development and service delivery have been influenced by this paradigm, and municipal solid waste management has been no exception. In fact, global think tanks like the World Bank have encouraged private sector participation in waste management in the developing countries where weak and under-capacitated municipalities have since long underperformed on the waste management front. Privatization was advocated as an essential component of structural adjustment programmes in response to the public debt crisis in the developing countries and also made a condition for renewed lending (Kessler and Alexander, 2005, p. 253, Weizsacker et al. 2005, p. Batley, 2001, p.359). An important question that arises is what happens to the role of the important stakeholders after privatization takes over waste management operations. The social sustainability dimension of privatization is often sidelined in such endeavours wherein researchers as Koppenjan and Enserink (2009, p.291) feel that displacement of the existing informal institutions, the reduction of local job opportunities and destruction of the feeling of local ownership may result as an adverse outfall of privatization. In the context of India, the turn to liberalization of the economy since 1991 opened the doors for privatization of urban services. Resultantly the waste

sector found favour with private companies facilitated by the local governments aiming towards creating an image of progressive cities demonstrated most visibly through apt management of solid waste. As a consequence, the long important stakeholder as the informal sector has been sidelined and left to face the adverse and harsh impacts of privatization, left largely unrecognized and therefore often considered illegal (Medina, 2007, Sembiring and Nitivattananon, 2010, Masood and Barlow, 2013, Velis, et al., 2012).

This research focuses on the impact on four stakeholders post-privatization of municipal solid waste management service in one of the Indian cities, Amritsar, i.e., informal waste sector, public sector employees, private sector employees and the community. In attempting to do so, this research paper seeks to offer a deeper understanding of the social outcomes of privatization of municipal solid waste (MSW) services in the case study and in general, particularly in the context of Indian cities.

The data for analysis is largely sourced from archival and documentary evidence, semi-structured interviews of the target stakeholders as well as supplemented by household survey and direct observations by the researcher.

A theoretical review and framework for analysis

In order to examine and analyze the impact of privatization on the stakeholders in the case study, a theoretical framework is constructed to guide the impact data capture and analysis. The social dimension emphasizes increasing social cohesion in terms of equity in incomes, employment and access to resources and infrastructure (Hans-Bockles-Stiftung, 2001 in Oman, 2004, p.73). In the context of sustainability and privatization, Koppenjan and Enserink (2009, p.284) suggest that social sustainability refers to the impacts of privatization on the affordability of and access to

public service to the poor. However, Koppenjan and Enserink fail to include the impact on stakeholders as one of the salient impacts within the gamut of social sustainability. Similarly, other researchers (Dorvil, 2006; Cointreau-Levine, 2000) do not give emphasis on social sustainability issues. The Integrated Sustainable Waste Management (ISWM) framework propounded by Klundert and Anshutz (2001,p.13) mentions consideration to informal sector as one of the important stakeholders in waste management in developing countries. In the case of India, the Ministry of Urban Development service level benchmarks (MoUD, 2010,p.40-41) provides eight indicators to assess private sector performance in municipal solid waste management service delivery. But the benchmarks do not go by outside gauging the operational and broad economic efficiency and sideline the social aspect of municipal solid waste management in terms of the bearing on stakeholders.

Regarding implications for the stakeholders, Klundert and Anshutz (2001.p.13) Samson (2010.p.79) and Sandhu and Dhillon (2009,p.240) consider the informal waste sector as important to developing a system of sustainable solid waste management in developing countries. In the case of the workforce, both in the public and private waste management sector, a statement that is resounded repeatedly is that cost-cutting takes place at the lower hierarchy of the labour workforce (Samson, 2010, p.24, 91). Schubeler (1996,p. 37) argues that both public sector waste workers and private sector workers are exposed to unhealthy working conditions and poor social security post-privatization.

Further, the community (households) is also one of the crucial stakeholders. Waste generated by a population is primarily an outcome of their consumption patterns and socio-economic characteristics. Simultaneously, the community's attitude, awareness and interest in waste segregation and minimization

contribute to the status of MSW management (Schubeler, 1996, p.35). Based upon the conjectural deliberations as discussed above, an assessment framework for case study evaluation of the impact of privatization of waste management on said stakeholders is derived as per table 1 below.

Table 1 Social sustainability dimensions of waste management

stakeholders	Impact Indicators
Informal waste sector	Loss of employment and income
Public sector employees	Employee retrenchment and change in working conditions
Private sector employees	Working conditions and adherence to labour laws
Community	Distributive equity

Municipal solid waste management in Amritsar; from municipal to privatized operations

Amritsar is the second largest city in Punjab in India and is located 27 kilometres from the international border with Pakistan. The city has a population of 1,132,761 and areal extent of 14237.2 hectares. Being the seat of the Sikh religion and owing to the presence of the golden temple, the city attracts tourists from all over the world. It also witnessed a spate in development activities owing largely to the liberalization measures in the last two decades leading to planning and implementations of a large number of infrastructure, commercial and residential development projects.

Coming specifically to the MSW situation, the city generated about 600 metric tonnes of MSW per day (AMC, 2009) and the organic waste content was highest in the city. The Amritsar Municipal Corporation (AMC) is the concerned urban local body responsible for MSW management in the city but was found wanting on all fronts from inadequacy in storage infrastructure, collection and transportation when it came to discharging the responsibility efficiently looking at the piles of accumulated garbage in the city. The collection levels were dismal, and only about 50-60% with no

provision or effort was made to segregate the waste or recycle it and dispose of the remaining in a scientific manner. Consequently, the city displayed poor hygiene condition and was a negative factor for a holy city known for its tourist capabilities. Looking at the state of affairs in terms of waste management and the inability of the AMC to handle by itself and also the same issues in the other cities of Punjab State, led the Government of Punjab to take the initiative to go in for private sector participation in MSW management services in the State. The launch of the JNNURM¹ and inclusion of Amritsar city also gave a much-needed push towards suitable management of MSW in the city.

The AMC did nothing in the city in context of waste recycling, and this important task has historically been managed by the informal waste sector as playing a significant role in recovering recyclable waste and resending it into the production and consumption process as a part of a complex and well-organized chain starting from the waste pickers, small scrap dealers, medium and larger scrap dealers. However, both the state and the local government turned a blind eye towards these key stakeholders and went on to push for entry of corporate private players in the city's waste management operations.

The resolution for effective MSW management and its scientific disposal was passed by the AMC on 27/03/06 and in September 2008, M/S Antony Waste Handling Cell, Private Limited was allocated the work to be undertaken in Phase I, i.e. collection, storage and transportation of waste to the disposal site. The project was initiated in February 2009 under the JNNURM with a total capital cost of 72.49 crores with 50% Central Government, 20%

¹ The thrust of JNNURM (Jawaharlal Nehru National Urban Renewal Mission) was on building efficiency in infrastructure and service delivery mechanisms, community participation and accountability of urban local bodies and parastatal agencies towards the citizens. In a bid to augment and improve infrastructure the mission was launched in 2005 in 64 cities with a provision of Rs 50,000 crores over a seven year period.

from Government of Punjab & 30 % from AMC. The model emerging from this PPP entailed that the private party would manage in 41 wards² and the remaining 24 wards would be handled by the AMC including street sweeping activities for the entire city.

The private company would handle at least 300 tonnes of waste per day and would be paid an amount of Rupees 500 per tonne of waste. Accordingly, the company invested Rupees 10 crores in procuring equipment and its manpower comprised of 250 inclusive of drivers, helpers, and repair and management staff. The company continued service delivery for three and a half years before it withdrew its operations in August 2012 citing the non-payment of dues by the AMC to a tune of Rupees 1.8 crores as the primary reason for withdrawal. Thereafter the AMC had no option but to deploy its own scant infrastructure and resources to manage the city garbage, and the results were far from satisfactory. Recently (mid-2016) the AMC signed a contract with another private company to collect and transport solid waste, and the operations were on at the time of writing this research paper. This paper, however, considers the time period from February 2009 to August 2012 to evaluate the impacts of privatized operations in municipal solid waste management services on the stakeholders as mentioned.

Impact of privatized waste management operations on stakeholders

As mentioned, four prominent stakeholders, i.e., informal waste collectors, employees in the public sector, employees in the private company and the local community were considered as the main stakeholders, and the selected indicators for impact assessment was applied. The results of the same are presented herein. Coming

² A ward is the lowest administrative unit for city governance.

specifically to the context of privatization, the research considers the three and a half years when the private company was engaged in managing waste operations in the city from February 2009 to August 2012.

Impact of privatization on the informal waste sector stakeholders

As in the case of many other urban centres, all recycling operations in Amritsar city are undertaken by the informal sector. This sector is arranged with waste pickers at the lowest level and forming the backbone of waste collection. There is no authentic count available, but it is estimated (January 2014) that there were 2500-3000 waste-pickers engaged in informal waste collection and recycling operations in the city. There is also an informal operation where the itinerant waste buyer buys directly from a household by paying a small amount for the recyclable waste, and their number is estimated to be around 2500.

Also in the hierarchy are the small scrap dealers who buy the waste from these waste pickers/itinerant buyers and sell it to larger scrap dealers who deal with specific items and materials which then supply waste to the recycling units. The waste is collected from various sources; landfill, illegal dumping sites in the city, secondary storage bins and also in some localities, directly from the households. It is then sorted through manually in the areas where the waste pickers reside. The waste pickers can be broadly divided into three groups including those who collect waste door to door, from the roadside and municipal bins, and at the city landfill.

The privatization policy followed by the city has been wherein waste collection was to be undertaken at the doorstep of households in the 41 wards of the city contracted to the private company. This left no scope for the waste pickers to collect the waste from households. The local government, as the interviews

reveal, did not regard the work done by the informal waste sector as important or as a viable social and economic initiative that could be mobilized to play a role in the city's waste management operations. In the case of the private company, they also did not attach any significance to the work done by the informal sector and rather spoke of it in negative terms as being *unscientific*.

Those most ruthlessly impacted from privatized operations were the waste pickers collecting at households who were asked by the households not to come for waste collection after the private company began operations in their areas. However since in phase I the company's contract was only for collection and transportation, waste pickers did not completely lose their right as customary owners to waste but rather were limited to the potential locations from where waste could be accessed by them, i.e., only the landfill. However, in the context of the door to door employment, the waste pickers were acutely hit and had to look for other means of livelihood within or outside the informal waste sector.

The loss of door to door employment led to a extensive loss of income for the door to door waste pickers who became unemployed and were cut off from access to domestic recyclables. The waste pickers interviewed reported an average decline of as much as 39% of their monthly income. The waste pickers operating at the secondary bins and landfill reported a drop of income primarily due to the struggle for recyclables becoming more intense at the landfill, with more waste pickers moving there for accessing recyclables since the collection was now largely confined spatially to the city landfill.

While the itinerant buyers were not significantly impacted, they did mention a drop of income due to the private company staff asking the households for recyclables that were traditionally given to the itinerant buyers.

Impact on Municipal sanitary workers

Traditionally, the work comprising of street sweeping, waste collection and disposal has been done by permanent sanitation workers of the municipalities across the country, usually organized in unions under political patronage. However other than the permanent employees, a trend that can be traced to the early 1990s is employing contract sanitation workers by municipalities (Vyas, 2009, p.326) largely to cut down costs of a full-time employee as these contract workers are paid much less³ than a permanent sanitation employee. The case of Amritsar is no different from the above mentioned. The management cadre from the health officer to the sanitary supervisors comprises of permanent staff. In the lower hierarchy constituting the sanitary workers (drivers, sweepers, waste handlers), the staff has been recruited both on a permanent and temporary basis. Prior to the AMC operations, there were 1360 permanent sanitation workers and 1050 contract workers hired under the MSC scheme of the AMC. While the permanent staff earned a salary of Rupees 14000, the temporary workers were employed for a meagre Rupees 1200 since the year 2000 with a marginal increase up to Rupees 2850 till 2009, an amount which was lower than the Government of Punjab minimum notified wages for 2009 (Labour Department Punjab, 2015).

Khan (et al., 2012, p.123, 124) in his research on privatization, states that politically, the most difficult and feared impact of privatization is employee layoffs and retrenchment. However, the case of privatization of MSW operations in the city presents a slightly deviating outlook. Going back to the compromise with the unions, 175 contract employees were made permanent in 2009 to indicate that privatization would not damage the interests of the sanitation workers. However, with the protests erupting again⁴ and

³ Usually a third of the salary of permanent municipal sanitation employees.

⁴ In the wake of state government elections in 2011, not wanting to lose sanitation union support the AMC made permanent the services of additional 375 sanitation employees

also in the backdrop of the state elections in 2011, another round of permanency took place. The condition laid was that only those who had worked uninterruptedly and without any disruption of service since the day of appointment would be considered. Meanwhile, the local area committees for sanitation were disbanded, and at least 500 contract workers were laid off under this criterion. Though it can be affirmed that employee lay off and retrenchment as such did not take place for the permanent staff, but a measured layoff using a conciliation plan to retain some (to placate the worker unions) and lay off the remaining contract employees did take place post-privatization.

Impacts on sanitation workers of the private waste management company

The private company began operations in the city in February 2009 and hired workers through advertisements in the local newspapers. Based upon evidence gauged from the interviews cutting across managerial staff and workers, prior skill or work experience in the waste sector was not a obligatory condition enforced by the private company.

The managerial staff (Manager and Deputy Manager) were paid a salary of Rupees 40,000 and Rupees 30,000 respectively with the provision of leave on Sundays and an annual paid leave of two weeks. The supervisory staff was paid Rupees 7000 with one weekly leave but no annual leave. The technical repairs staff (Mechanics) were paid between Rupees 6000-8000 depending upon their skill, with a weekly leave but were not granted annual leave. The worker class (drivers and helpers) were employed on a salary of Rupees 3900 without provision of leave per week or annual leave. While the wages conformed with the norms in unskilled and semi-skilled groups, they were lower for skilled and high skilled worker categories of the minimum wage guidelines. Annual increments were given to the managers and supervisors,

but no increments were sanctioned for the workers and drivers. As an unwritten norm, no leave was granted, and deductions of salary were made in case leave was taken on any account including sickness.

The private company indulged in manipulation and cost-saving manoeuvres in the process are triggering discontent amongst lower hierarchy employees that led to strikes and as also litigations in the local labour court. Interviews with employees revealed that labour dropout was high and labour reduction practices were resorted to by the private company to reduce costs. While in February 2009, at the beginning of operations, the worker strength stood at 248 but from 2011 onwards the strength hovered between 170 to 200. Hence exploitative and capricious practices marred managerial and labour relations. Unclear service rules and lack of terms of reference, lack of transparency and unfair methods of cost reduction led to hostile service condition for the workers.

Equitable access to service to the community

An analysis of equal access to the service was made by dividing households into four categories based on their disclosed incomes and visual observation of the residential locality and housing structures. The income-based categories are classified as economically weaker sections (EWS), low-income groups (LIG), middle-income groups (MIG), and higher income groups (HIG)⁵. Besides the AMC notified the list of 65 slums locations in the city was also considered in the choice of selection of areas for household survey, with 13 of the 33 locations being notified slum areas. The result of a survey in the context of equity revealed that in terms of a collection of waste from the doorstep, 62% of the

⁵ This categorization is based upon the Monthly Per Capita Expenditure (MPCE) given by the Indian National Sample Survey Report (2004) the Ministry of Housing and Urban Poverty Alleviation (2007) categorizes the households as EWS, LIG, MIG and HIG based on income. Accordingly the income specification for EWS and LIG is Rupees 1 lakh and 1-2 lakh respectively (The Hindu, 2012).

EWS and 46% of LIG category received no door to door collection whereas this dropped to 40% in MIG and just 6% in HIG category. A majority of the HIG households rated the door to door service by a private company as excellent whereas this figure dropped down the line to .1% in EWS households. This reveals a bias wherein the HIG households appeared to be much better serviced than low-income households. Besides the door to door collection, there appeared to be a variation even in distribution and access to the secondary waste bin wherein 78% of EWS and 66% in LIG households found the containers inaccessible from their homes. Whereas this dropped to 32% and 36% in MIG and HIG households respectively. This is an indication that less number of secondary containers were placed in low-income areas leading them to be at a greater distance and hence inaccessible to most households in low-income locations.

Findings and discussion

This research paper aimed to comprehend privatization from a social sustainability perspective applying the indicators set out to guide and situate the analysis. Based upon the discussion therein, it is possible to sieve out major inferences.

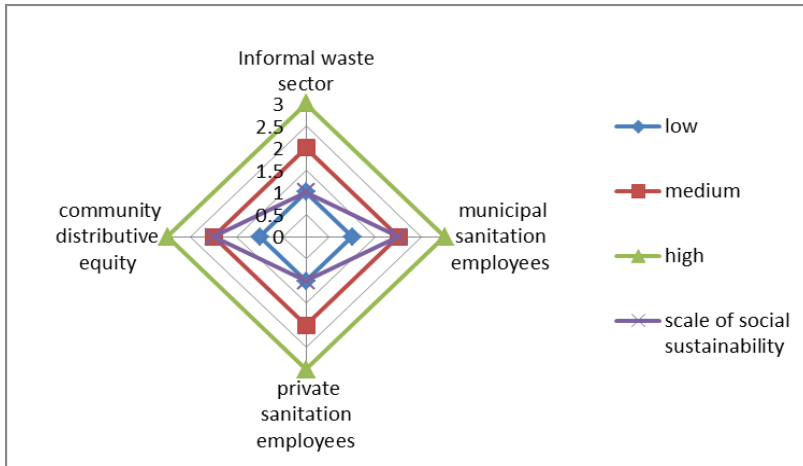
Research by Samson (2010) and Mishra (n.d) points to negative impacts of privatization on the informal waste sector. Based upon the deductions from the analysis, this research also supports their arguments indicating that the informal waste sector as the traditional stakeholder was not recognized while considering privatization for the city's waste management practices. The services and benefits rendered by them to the city were not recognized even though they have been performing this task for at least three decades now. In conclusion, it can be deduced that privatization of waste management services impacted the informal sector stakeholders, specifically the waste pickers undesirably

reducing their scanty incomes further and forcing them to resort to alternate survival measures.

In terms of the impact of privatization on municipal sanitation workers the case of Amritsar demonstrates that the impacts do not completely match the broader beliefs from privatization stemming from theory and other case studies (Khan et al., 2012). In the current municipal arrangements, it is enormously challenging to lay off or retrench permanent municipal workers. Despite the beginning of privatized operations, two recruitment drives were initiated under political support and union pressures. The case of the sanitation workers of the private company corroborates claims by researchers as (Martin, 2001) that down the hierarchy, worker conditions in the private sector declines and most cost-saving takes places in that category. Disregard of labour laws, manipulation tactics and vagueness around working norms are perceptible. Additionally, the private company did not consider it necessary to provide appropriate safety gear to the field staff or improve their working conditions to target and enhance its own operational efficiency.

Coming to the case of distributive equity and access to services the case of Amritsar substantiates the lack of equity the reason being the need for compulsive cost-cutting by resorting to lower door to door collection as well as the reduced level of service in low-income locations while the higher income areas received better. In summation, based upon the analysis, figure 1 presents a graphic view of the social sustainability impacts and indicates low levels of the social sustainability performance of privatization in context of the stakeholders; informal waste sector, private company sanitation workers, inequitable access to waste services by the community. Coming to the AMC workers considering the fact that no retrenchment of permanent employees took place but some contract workers lost jobs, a medium scale impact is visualized.

Figure:1 Status of social sustainability post-privatization of municipal solid waste



Conclusions

The case of privatization in Amritsar city brings out some relevant points for consideration.

Under the prevailing neo-liberal economic conditions it seems that privatization of waste is going to be unavoidable. While on the other side there is also a noticeable movement of the state to focus on all-encompassing growth that does not alienate the poor, instead of the benefits also reach them. As such, one of the national policies, National Urban Livelihoods Mission (NULM), 2013 stresses upon poverty and vulnerability reduction of the urban poor by enabling them access to gainful employment and skilled wage prospects (GOI, 2013, p.7). The policy also identifies the waste pickers (ibid, p.16) as one of the marginalized sections of the society and focuses on them along with the other identified vulnerable sections to enhance their livelihood capacities.

Further, in the case of privatization, as the study indicates, retrenchment and layoff policies are politically difficult if not impossible to implement. Manipulation and insolence for labour

laws as in case of this study indicate a necessity for firm monitoring of the labour rights enforcement by the private waste managing companies so that the interests of the sanitation workers in the private sector is protected. Also, the waste operations will always assume the element of public good, looking at its larger resolve of a better quality of civic life for the citizens. In that sense, distributive equity must be ensured, again by effective monitoring of the service by the local government. Further, it is also important to involve the citizens in the waste managing operations such as at source segregation so that the operations become further productive and the community feels a sense of owing and involvement and thereby mutual benefit in the entire system of solid waste management. Finally, it may be said that the social aspect of any initiative in the process of privatized delivery of services must not be compromised. As such, the interests of all stakeholders must be protected in order for the privatization initiatives to be socially just and sustainable.

References

- a) *AMC (2008). Agreement for Collection and Transportation of MSW in the City of Amritsar- Punjab, Amritsar Municipal Corporation.*
- b) *AMC. (2009). Integrated Solid Waste Management System for Amritsar Municipal Corporation, Detailed Project Report, Volume I, main proposal, prepared by Eco-Save System (P.) Ltd, Mumbai.*
- c) *Bach,S. (2000). Decentralization and Privatization in Municipal Services. The Care of Health Services, International Labour Office, Geneva. Available at <http://www.ilo.org/public/english/standards/relm/gb/docs/gb283/pdf/jmmsr.pdf> [Accessed 2 June. 2012].*
- d) *Batley, R. (2010). Public-private partnerships for urban services. In: Freire,M, and R.Stren. eds., The Challenge of Urban Government Policies and Practices. Washington D.C: World Bank .pp.199-212.*

- e) *Chandler, T and Ferielle, P. (1994). Cities, Unions and the Privatization of Sanitation Services, Journal of Labour Search, 15(1), 53-71.*
- f) *Cointrieau-Levine, S. (2000). Guidance pack, Private sector participation in Municipal solid waste management, Part I, Executive Overview, Part II Guidance note. Available at rru.worldbank.org/Documents/Toolkits/waste_fulltoolkit.pdf. [Accessed on 9 September 2011].*
- g) *CPHEEO. (2000). Manual on Municipal solid waste management, Ministry of Urban Development, New Delhi: Government of India.*
- h) *Dorvil, L. (2007). Private Sector Participation in Integrated Sustainable Solid Waste Management in Low- and Middle-Income Countries. The University of St Gallen. Available at www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/.../dis3381.pdf. [Accessed on 21 March, 2012].*
- i) *The government of Punjab. (2015). Punjab Government Gazetteer, Department of Labour. Available at http://pblabour.gov.in/pdf/notifications/ns8_revised.pdf, 2009,2010,2011,2012. [Accessed on 13 January 2014].*
- j) *Kessler T & Alexander, N (2005), Essential Services: shifting the burden of proof. In: Weizsacker, E.U.V, Finger, M, Beisheim, M & Young, O.R. eds., Limits to Privatization, how to avoid too much of a good thing : a report to the Club of Rome ,London: Routledge, pp. 228-235.*
- k) *Khan, M.T, Khan, N.A, Ahmed, S and Mehmood, K. (2012), Privatization Effects on Human Resources (Review Research), Universal Journal of Management and Social Sciences. 2(6).pp. 121-133.*
- l) *Klundert, A.V.D. and Anschutz. (2001). Integrated sustainable waste management the concept, Tools for decision makers. Available at www.waste.nl/sites/waste.nl/files/.../files/tools_iswm_concept_eng1.pdf. [Accessed on 18 September 2011]*

- m) *Koppenjan, J.F.M. and Enserink, B. (2009). Public-Private Partnership in Urban Infrastructure: reconciling, private sector participation and sustainability. Public Administration Review, 69(2), pp. 284-294.*
- n) *Martin, B. (2001). Privatization of municipal services: potential, limitations and challenges for the social partners, International Labour Office, Geneva, Sectoral Activities Working Paper. Available at unpan1.un.org/intradoc/groups/public/documents/ilo/unpan025477.pdf. [Accessed on 11 January 2013].*
- o) *Masood, M. and Barlow, C.Y. (2013), Framework for Integration of Informal Waste Management Sector with the Formal Sector in Pakistan. Waste Management and Research. 31(10), p. 93-105.*
- p) *Mishra, R. (n.d.). The Informal Waste-Pickers and Model of Exclusion, A study of Lucknow city, Available at http://www.academia.edu/2905641/The_Informal_Waste_Pickers_and_a_model_of_Exclusion_A_Study_of_Lucknow_City. [Accessed on 12 January 2014].*
- q) *Weizsacker, E.U.V, Finger, M & Young, O. (2005). Limits to privatization. In: Weizsacker, E.U.V, Finger, M, Beisheim, M & Young, O.R. eds., Limits to Privatization, London: Routledge.*
- r) *MoUD. (2010). Toolkit for Public-private partnership frameworks in municipal solid waste management volume I- Overview and success. Available at www.urbanindia.nic.in/programme/.../SWM_PPP_Toolkit-Volume-I.pdf. [Accessed on 15 September 2012].*
- s) *Omman, E.V.I. (2004). Multi-criteria decision aid as an approach for sustainable development analysis and implementation. Available at seri.at/wp.../Omman_2004_SustainableDevelopment-and-MCDA_PhD.pdf. [Accessed on 24 February 2013].*
- t) *Sandhu K and Dhillon, R. (2008). Urban poverty and deprivation among the ragpickers of Amritsar city: pragmatic insights. In: Sandhu, R.S, Sandhu, J and Arora, B. eds., Urban Poverty in Developing Countries, New Delhi: Concept Publications.*

- u) *Sembiring, E and Nitivattananon, V. (2010). Sustainable solid waste management towards an inclusive society: integration of the informal sector. Resources, Conservation and Recycling. 54(1), 802-809.*

- v) *Samson, M. (2010). Refusing to be cast aside: waste pickers organizing around the world, Chapter 6: Confronting and Engaging Privatization. Available at <http://wiego.org/sites/wiego.org/files/publications/files/Samson-Refusing-to-be-Cast-Aside-Wastepickers-Wiego-publication-English.pdf>. [Accessed on 16 February 2013].*

- w) *Schübeler, P (1996). The conceptual framework for municipal solid waste management in low-income countries. SKAT (Swiss Centre for Development Cooperation in Technology and Management). Available at www.worldbank.org/urban/solid_wm*