

Scrap Waste Collection: Economic Resource and Local Recycling Practices in Rawalpindi City

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Abstract

Solid waste particularly consists of scrap waste and these scrap wastes are collected and then segregated for recycling and reusing from mixed waste. In Pakistan scrap waste are known as KABAD waste. Therefore the objectives of this study were to assess the economic activities associated with the collection of scrap waste as well as identify existing local recycling practices in Rawalpindi Cantonment area. Further the study under consideration was completed in one month. Moreover, the research study was qualitative in nature and used purposive sampling technique of non-probability sampling type and selected 6 scrap dealers as respondents for data collection. Hence data were collected through participant observation and conducting in-depth interviews of those, delve the dynamics of scrap waste collection. In addition Interviews were recorded with due permission of the respondents and transcribed in order to analyze the data for the generation of various themes. The finding of the study categorized into two major themes creation of job market and local re-usage and recycling practices of scrap waste. It was found that collection of scrap waste create opportunities for those who are illiterate and unemployed as many people are working in the collection, sorting, processing, transporting the scrap waste and earned livelihood from it. Further metal scraps particularly aluminum gives them more income as compared to the other scrap waste. Likewise in terms of re-usage and recycling glass, paper, plastic, metals and rubber tires are the waste that recycled at local level and effectively used for other useful purpose. Therefore, the research study highlights the importance of scrap waste and the economic activities linked with it.

Keywords: Scrap, Waste, Practices, Economic activities, Recycling

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1. Introduction

The management of waste materials, especially within cities and town has become a crucial worldwide concern in past few decades. As the sheer amount of waste continues to expand, there is an increasing realization of the need to transform and adopt more sustainable waste management techniques (Devkota et al., 2004). In this aspect the collecting and recycling of scrap waste is an important component of this change, since it provides both economic and environmental benefits. Scrap wastes are the component and sub-set of solid waste that is separated and reused or recycled from mixed waste. Scrap waste materials includes items such as plastic, paper, metal and electronic trash that can be reused and recycled. These waste materials, when carefully managed and processed that possess tremendous economic worth that can support local economies and a major source of earning and livelihood for many people. Furthermore, recycling of scrap wastes has significant advantages for the environment, such as reducing raw material extraction, usage of energy, and greenhouse gas emissions associated with virgin material manufacturer (Khanal, 2010). Around the world, all countries generate around 4 billion tons of solid waste from which a total of 600 million tons are recycled. Furthermore, around 200 million tons of solid wastes are used to generate electricity. In Pakistan approximately 30 million tons solid waste has been generated per year and from this 50% is collected for reuse and recycling. However, the percentage fluctuates, from 80% in big cities to negligible in most rural areas. In addition to this, the most common types of solid waste in Pakistan include paper, metal, rubber, plastic, food waste, animal waste, glass, textile waste, stones, bones, and etc. Solid waste collection in Pakistan now accounts for just 50% of total produced waste. Recycling and reusing is one of the most efficient ways to decrease solid waste and protect natural resources by reusing and putting things back to productive use. Whereas Pakistan's institutional recycling facilities are inadequate, the informal recycling business is thriving (Khurshid, 2023).

In low and middle income countries like Pakistan scrap wastes are collected by poor people and these people are called out locally with the names of PHERIWALAS (street Hawker/ Scrap collector), KABARIS WALA (Junkyard owners, dealer and workers) known as informal waste collectors. Further recycling and re-usage of scrap wastes (KABADI WASTE) are acknowledged in terms of sustainable waste management practices (Kamran et al., 2015). Additionally scrap wastes collection are associated with recycling means creation of jobs and income generation

activities among low income households. Moreover, one component of scrap wastes collection that is gaining popularity is the involvement of informal waste collectors like those people who are not associated or working with any waste management company they informally collect materials and sell to junkyard owner or dealer and in return they earned money. Informal waste collectors, who frequently work outside of conventional waste management systems, play an important role in the gathering, organizing, and selling of scrap. Numerous scrap items, including tin, plastic, paper, glass and iron, have a recycling cost and value attached to them. Jobless teenagers separate all of this rubbish and sell it to recycling companies for conversion into valuable things. The activities they undertake help to reduce the amount of waste transported to landfills and boost resource recovery. Furthermore, money from scrap collection is a valuable economic resource, especially for marginalized populations who use scrap waste picking to generate income and feed their families as it is only their means of survival. Therefore, the objective of this study is to explore economic possibilities and local recycling practices linked with scrap wastes collection in Rawalpindi city. As due to rapid growth of population in Rawalpindi city waste generation activities is also increased along with the value of scrap materials. So this research study aims to better understand the role of informal waste collectors and dealers in the recycling process as well as evaluate the economic opportunities associated with scrap waste in Rawalpindi city. By reflecting light on these existing aspects, the study intends to inform policy interventions and process of decision making associated to resource recovery from the waste and its proper management.

1.1 Problem Statement

Managing solid waste especially within metropolitan areas is a huge global concern. The growing amount of scrap waste necessitates the implementation of more sustainable waste management strategies. Collections of scrap waste and recycling are essential components of sustainable waste management because this is the only way we can reduce the waste and convert it into reused goods the recycling process. So in this aspect the role of informal collectors is very crucial like scrap waste collection has economic and environmental benefits that help poor people to generate their income from this and indulge themselves in recycling practices. So keeping in mind there is a need of conducting of a qualitative research study to verify these ideas that how much economic activities are generated through scrap waste collection as well as what type of

local recycling practices are associated with scrap waste. Certain studies have been conducted in this regard and highlights the importance and need of incorporating informal waste collector into official waste management systems to improve the efficiency of recycling and lessen the environmental effect of disposing of trash (Wilson & Velis, 2015). Another research by Medina (2017) emphasized that economic value created by informal collector by collecting scrap waste, demonstrating the possibility for revenue generation from recycling operations in communities that are marginalized. However, these studies were quantitative in nature while researcher is going to opted to conduct a qualitative study that how much jobs opportunities are generated through scrap collection as well as what are local recycling practices related to scrap waste exists.

1.2 Research Questions

- How does management of scrap waste contribute to the creation of economic activities?
- What types of recycling processes are involved in handling scrap materials?

1.3 Objectives of the study

- To analyze economic activities linked through scrap waste collection.
- To explore the various ways of recycling germane to scrap waste materials

1.4 Significance of the study

The current study is important for policy makers and stakeholders to recognize scrap collector ability and their contribution in collection of scrap waste and provide better infrastructure in the form of big recycling units and industries in the city so that they can earn more money. This study also helps out the masses to understand how we reduce the solid waste by indulging ourselves in recycling practices and used that product again in efficient way. Further, it also help those people who are unemployed and have nothing to do, this study will tell them about the economic potential associated with scrap as a resource of financial resource.

2. Literature Review

Collection of scrap metals is helpful in creation of jobs in developing countries because scrap metals can be recycled or reused and acts as a resource recovery in a closed loop economy for Ghana. During the survey the types of metals found were steel, copper, aluminum, lead and iron in which aluminum leading the chart by 35% of volume because Ghana have the industry to recycled and reused the aluminum but the rest of other metals they don't have industries for

recycling. Scrap metals were collected from households and refuse dumps so the source of scrap metals collection leads by dump site. Although the people of Ghana don't have the knowledge to understand the worth of these metals as source of generating income and their role in circular economy. Scrap dealer purchase the scrap metals from scrap owner on monthly basis. So scrap owner could wait 1 month for their income this is due to low level of industrialization in underdeveloped countries. Scraps collections delivered to buyers through truck are also linked with scrap business or job creation in Ghana (Nkansah et al., 2015)

Khanal (2010) examined that collection and assess of scrap waste materials along with business activities generated through scrap waste materials in Kathmandu Valley. The study demonstrates that higher ranges of scrap waste were consisted in the form of glasses then paper and other leather, textile, rubber and metals. These are all used for recycling and reusing. Particularly plastic and paper are frequently recycled material while glass waste materials are reused. Further collection of these materials was done through door to door by street hawker. Further in terms of business activities waste collection are sold to small shops to scrap dealer. 5% of the waste including papers and glasses send to India. Other waste materials send to industries located in India as well as in Nepal. Nepal is not just exporting scrap waste they also import scrap from other countries because they have many industries to recycling these materials. Moreover at local level employment street hawker earn their livelihood from materials they collect by selling them to shops and scrap dealer.

(Ogwueleka & B p, 2021) examined the activities of Abuja's informal recycling sector. Because there are no officials or formal activities of recycling or program exist in Abuja. In this study role of Scavenger and scrap dealer were analyzed as both of them generate income from waste collection. Scavenger indulge in sorting of waste and identify those materials which are recyclable. On the other hand scrap dealer deal with recyclable things and generate revenue from them. Findings of the study revealed that daily earning of waste picker are between 2.8 \$ to 4.8 \$ but this depend on waste collection they collect in a day. However, scrap dealer earn higher money as they sell waste materials at higher cost and reuse materials at greater amount than scavengers. In the same way scrap material prices are unhinged and controlled by scrap dealer which disturb the monthly income of waste picker. The price of recycled and reused materials depends on the expansion of recycling market. Scrap dealer take advantage of all these unfairly.

Kamran et al., (2015) analyzed the role of informal sector in recycling of waste in eastern Lahore. Informal sector comprised of street hawkers, junkyard, scavengers and household waste collector. This study showed that more than 500 street hawkers and itinerant buyer in eastern Lahore are associated with collecting and sorting the high price recyclables materials and sold them at a high price to different junkyards. After this owners of junkyards further sell recyclables items to small scale industries to waste dealers and then they sell recyclable items to manufacturing and reprocessing industries. The most valuable recyclables items were found in this study were metals particularly aluminum followed by zinc, steel and lead. Further this study identified that there are 128 junkyards in which 57 are moderately large and bought all kinds of recyclable materials. Moreover 8 to 10 people has employed in junkyard that separate, shred, load and unload the recyclable materials. But the income of these worker is very low 2.72 € ¼ to 4.54 € ¼ per day. Finding of the study also revealed that number of recyclable material extracted by informal sector in eastern Lahore is about 15.30 tons in a day and worth of 681.8 € in a day. So here informal sector is the source of recycling waste in eastern Lahore.

Kyessi & Omar (2018) investigated the socio-economic impact of scrap metal business in Kinondoni Municipality, Tanzania. This study showed that scrap metal collectors and scrap metal dealers both get benefited by indulging themselves in scrap business. Findings of the study revealed that business of scrap metals provides employment chances for the underprivileged people and their monthly income is greater as compared to those who are working in formal sector with having minimum wage. Scrap metal dealer also provide employment opportunities as they give people office work including determining the quality of scrap, weighing scraps and type of scraps and handling financial transactions. Further shipment of scrap collections are also associated with employment production as on and off loading work doing by average 4 people by taking scraps to shipment vehicle and through doing this they generate income and meeting their livelihood. Moreover, scrap dealer sell scraps to different industries particularly steel industry through the use of transport system this indicate that there is another job opportunity for vehicle owners and their drivers. And there were 85 scrap dealers in municipality this means they visit 85 times in a month so in this case 170 employment opportunities are produced. Hence this study proved that scrap metal collection has a very important and huge impact in creation of jobs.

2.1.Theoretical Framework

The current study adopted the Cultural Ecology (1950) theory as its framework of the research analysis. Cultural ecology is a theoretical approach that addresses to explore the relationship between human and environment, focusing culture as a vital to understand the evolutionary process, differently from other living being. So, Julian steward's notion of cultural ecology suggests that economy and technology influence our interaction with the environment. Economy and technology are part of a complex cultural system that includes tangible artifacts, values, norms, ideas, and human enterprise (Lapka et al., 2012). This means that adaptation towards technology can helpful in creation of economic wealth as well as solve environmental problem. Moreover, the relationship of nature and culture is a dialogue between two parties and this dialogue helpful in order to understand the dominance of one side. As our daily life experiences and interaction demonstrates human-environment relationship. Therefore, the nature has a strong influence on culture like societies able to use nature as substitute in the form of great availability of local resources (by the transport of food, goods, energy, money, and information) and to create the appearance of being independent of natural rules. Moreover, despite the many human inventions, we still count on ecosystem services and natural resources. In this context, this study focused on people adaptation towards their physical environment in terms of collecting scrap waste materials and maximizing economic benefit by generating income and feed livelihood as well as reducing the waste or move towards sustainability. People show positive attitude towards collecting of scrap waste and they know by doing this we automatically participate in the process of cleaning the environment. Further there are certain belief exist in culture that many people use scrap waste as reused the metals to improve their health conditions. On the other hand, role of technology and economic activities are also played crucial role as collection and recycling of scrap waste create job market for individuals. Scrap waste once collected, sold and then transfer to recycling industries where scrap materials turned into new shapes. So, the purposed theory suggested that humans have a strong association with their existing environment and completely well aware about the utilization of resources available in their environment which help them for survival and meeting the current needs.

3. Research Methodology

3.1. Universe of the study

The existing research study was carried out in cantonment area of Rawalpindi city. The interviews from respondents were conducted in their junkyard. In addition, during the interview process only researcher and respondent were present. Moreover Due to economic and time constraint study was restricted to cantonment area of Rawalpindi only, so researcher can easily access to targeted population for data collection. Moreover, there is no any study is conducted in Rawalpindi city especially on research topic under investigation.

3.2. Sampling

All the scrap dealers within the cantonment area of Rawalpindi city were constituted the population of this research study. Further this study adopted purposive sampling technique of non-probability sampling type to gain in-depth understanding of the problem under investigation. Therefore, 6 scrap dealers were selected for this study through purposive sampling as the sample size is small in qualitative studies. Further the researcher limits the study to 6 respondents as data saturation is achieved.

3.3. Methodology

The existing research study was qualitative in nature and used case study approach. Moreover researcher adopted this methodology to explore all the business activities associated with scrap waste collection as well reusing of scrap waste locally. The advantage of using this methodology was to find out rigorous view of scrap dealers and in the lights of those opinions of scrap dealers to suggest a job opportunities associated with scrap waste collection and also suitable ways of scrap waste recycling process.

3.4. Methods

In this study researcher used participant observation and interview method to collect in-depth information about the problem under consideration. As for participant observation researcher spent whole day with respondents. Further due to qualitative type of data un-structured interviews have been conducted. Moreover, researcher used interview guide and field notes as a tool to collect data. Questions in the interview guide were open-ended with clear worded so that

respondents are not just simply said yes or no but they have to explain the topic in detail. Hence, each scrap dealer's interview was lasted for 30 to 45 minutes.

3.5. Data analysis

For this research study thematic analysis approach was used for analyzing the data and generate themes. Thematic analysis based on 6 steps, i) familiarization with existing data, ii) creating codes, iii) searching the themes available in existing data, iv) Revising the themes, v) Describe and title themes then vi) generating report.

4. Results

4.1 Theme 1: Job creation market

4.1.1 Collecting scrap

The very first step is to reduce the waste is collection of scrap waste. Collecting scrap waste is a way in which the people who are illiterate can earn easily by picking valuable waste materials. Scavengers earned their livelihood through scrap collection and sold them at best prices to the scrap dealer. Scrap dealer narrated that scrap waste is collected by cycle hawker from door to door visit and they have a special focus on collecting aluminum, iron, steel, copper, and plastic because they know the worth and prices of these material are high and they earned more income by selling these materials. Ultimately their income depends on the amount and worth of materials which they collected. On daily basis scrap collector earned minimum 1200 Rupees from which they feed their family.

I bought all kinds of scrap materials from cycle hawker but when they sell me valuable items such as aluminum, copper, steel, iron and glass i pay them more because i know that these materials are costly and in high demands of factories and industries which are also give me more profit. So my preference is to take these sought of materials and sent for the recycling process. (Scrap dealer1)

4.1.2. Sorting of scrap

Majority of scrap dealers are employed people to sort waste materials. They sort the materials and put them in different section like this was small pieces of steel, this was large pieces of plastic or which material is used for recycling and which materials just needs some sought of repairing

and used for own purpose. Moreover despite the technology, workers manually separate the materials because they know machines cannot capture the materials as well as not suitable for recycling process. Further on the time of dealing with industries or large scrap units these people were loading the materials into vehicle and went along with vehicle until the payment was done.

I employed 7 to 10 people at my junkyard because it is very difficult to managed the things on my own, so these people are handing all the materials which scavengers selling to us and keeping them in their particular place and sending them to their respective factories. Some of these workers are engaged in separation of electronic scrap, and magnetic separation from the materials. (Scrap dealer 3)

4.1.3 Processing of scrap

Sorted waste materials go through a process that makes them ready for recycling and may include shredding, cleaning, melting and crushing the material. So in terms of segregation the waste, scrap dealer heir the people to perform the processing activities in their junkyard in the form of cutting the plastic bottle into pieces to reduce its volume further they meltdown the plastic and molded into pellets while metals were transformed into ingots, tires are separated and cleaning of glass bottle are also the part of processing. After the process these materials are sold to respective industries particularly in Lahore and Islamabad.

Scrap waste processing activities are impossible without hiring people because they are trained people as most of them are scavengers so they fully know how to separate small and large materials and did not need any training for this work. Therefore, the scrap yard workers earned their livelihood by involving themselves in scrap processing activities. Scrap dealer 3

4.1.4 Transporting the scrap

From truck drivers to rail drivers both get benefited and generate income by transporting the scrap materials from one industry to another. Most of the scrap dealer narrated that we have done the dealing of scrap materials twice in a month. And all the materials are transported to Lahore, Taxila and Gujranwala industries, with this respect the route and travelling distance is very long and also in Rawalpindi we don't have any industry to recycling the scrap. So considered this factor both are heavily paid by respective scrap dealers or industries. Moreover the expense of petrol is borne by scrap dealer and industrial owners.

People ranging from young to middle-aged are employed as drivers to transport scrap metal from scrapyards to processing plants or recycling industries. And we hire them because we don't have any processing plant in Rawalpindi, so these are the people who carefully transfer the material to industries. Moreover we pay them twice in a month which they meet their needs. Scrap dealer 4

4.1.5 Scrap logistic service

Scrap materials not only provide the opportunities for illiterate people but educated people also indulge in scrap logistic services like scrap dealer explained that many people who have some sought of degree related to marketing and business working as executive assistant or service representative in logistic unit. Each scrap waste has different market value depend on the quality of waste material; these people organize and preserve the material in effective way before dealing or selling to the industry.

A loaded scrap bin indicate great demand of worker as the focused point is to effectively organized the scrap which simply turn the debris into rupees. By generating income from this, worker observe the volume of scrap waste as which level of scrap is available and which industry is suitable for selling the scrap waste. Moreover these workers also analyzing which volume of material give them high profit of margin. While these people also indulge in the exporting of scrap materials to England like aluminum and copper are in high demand among household consumer of England. Scrap dealer 6

4.2 Theme 2. Local recycling & Re-usage practices of scrap waste

4.2.1 Up-cycling of scrap materials

Collection of scrap waste materials like plastic bottles, cardboard and old tires are transform into new products and these new products are consist bird feeders, planters and decorative items. Moreover at local level old tires are converted into biofuel by doing the shredding as cutting down the tires into pieces and decomposition of the tires by melting at high temperatures and make a special catalyst. At high temperature of heating the vapors can be dried and form pyrolysis oil and bio oil. It may also be burnt directly to produce electricity. Certain molecules that are too small for condensation remain as gasoline and are burnt as fuel. So thermal conversion of scrap tires are

considered as clean and alternative fuel which leads to the environment friendly approach to reduce the solid waste material.

Scrap waste material is helpful in reduction of solid waste like plastic tube, rubber tires, burned mobile and plastic are send to industry for recycling as well as locally utilize among people as scrap tires, after melting them are used for road construction in addition to, it is used as a tool for protest on roads. Scrap dealer 3

4.2.2 Repurposing scrap material

Glass processing and recycling has a potential to turn the waste glass into new form of product for usage and this involve washing the glass, crushing them into pieces and then melting down after that molding the glass into jars, bottles and containers. This procedure can be constant indefinitely without any loss of quality in the finished product. This type of scrap material is locally recycled as many glass scrap owner practice this activity in their own scrap yard and selling the new product in the market.

I prefer to take the glass scrap because it is locally transform into new product without sending them into big factories or industries. Like sometime glass only needed to be cleaned and after that it utilize in home to putting the things in it. Scrap dealer 4

4.2.3 Scrap materials used in art and sculpture

Gathering scrap materials particularly wood, plastic and metals are very helpful in creation of sculptures and mosaics from broken ceramics and can go through the procedures like craving, assembling and welding the materials. Scrap dealer narrated that many students particularly from the field of engineering and art comes to the shop and purchasing the scrap metal by saying that we are working on a project like creating the robot as well as sculpture of animal or insects, so in this respect molding the metals into the shapes which you want creating something new from broken pieces refers to the incredible futuristic innovation.

We are technically aware of this thing that there are different type's metals which are utilized in making of art and sculpture, so we carefully separate them and when someone comes to us we sell them. Scrap dealer 3

4.2.4 Scrap material used in making musical instrument

Scrap waste material particularly steel and wood are utilizing in making of musical instruments such as guitars, wind chimes and drums. Scrap dealer narrated that musical instrument shop keeper purchase these material from us and make instrument locally and sold. Moreover small music band just use different scrap metal for playing music without transforming them into certain shapes. They used the material as a way they exist or he purchased it.

People come to us and purchasing the certain metal that benefits them and helps to boast up their work or business. Just as a one man comes to the shop and examines all the metal, which metal sounds produce good he buys it. Scrap dealer 5

4.2.5 Scrap materials used in play and toys

Scrap material such as wood, plastic and steel are used in creating of toys and play. Many small level manufactures are buying scrap materials and make wood and plastic toys including the making of dolls as well. Further play materials like playground equipment such as swing and slide also made up of scrap materials.

Small private school owner and household consumer purchase steel, wood and plastic from us and made swing for their children. Scrap dealer 5

4.2.6 Repairing of electronic scrap waste

Collections of electronic scrap waste are particularly focus on fixing of appliances and reused them. Scrap dealers narrated that most of the electronic scrap are just need some repairing after adding the things like aluminum copper wire on it the appliances start working again. Most of time iron and electric fan scrap are reused after fixation.

Most of the people sold their damaged appliances to us and we used them own purpose after repairing the damaged appliances. Scrap dealer 2

4.2.7 Scrap utensils used for eating and drinking

Despite the innovation in the practice of modern cooking people still prefer to use old utensils as they considered best utensils for cooking because they have no negative impact on health. Scrap dealer narrated that people who are suffering from health problems comes to us and buy copper vessels, silver, and bronze utensils in order to resolve health issues they faced. They started eating

and drinking on these utensils because there were old saying that these metals improve immune system, improves metabolic system as well as your complexion.

Purchasing or selling of such metallic utensils benefits both the parties for us it is commodity and for other people it is used as medicine to cure the disease. So scrap metal are recycled as well as it is locally reused at household level. Scrap dealer 3

4.3 Discussion

Informal business activities are very common in the less developed countries of the world. The informal sector is incomplete without scavengers or waste pickers they are the people who govern that business in the form of collect recyclable material and enhance resource recovery (Velis, 2017). So this existing study focused on significant role that collection of scrap waste played to generate economic opportunities for people as well as reduce the solid waste through recycling and reused practices in Rawalpindi city. Informal waste pickers operate and contribute to informal economy as they collect scrap from streets, households and industrial areas. By selling the scrap materials they earned livelihood from it and after selling the valuable things to the scrap owner, things went for recycling or reusing which improving the waste management outcomes. Business of scrap waste material emerges as important economic hub where all types of scrap materials are recycled, processed and traded. These scrap marketplaces not solely benefit the local economy but they also create job opportunities and assist small enterprises. Scrap market become more transparent, efficient and environmentally sustainable by upgrading the physical infrastructure and regulatory structure to governing scrap business effectively. Moreover establishing market connections along value addition efforts can boost innovation and economic growth in field of recycling. Further this study also highlight that people have awareness regarding the recycling of waste and they know how to use the scrap waste material into effective way by molding or repairing them. Not just this they also used scraps utensils for eating and drinking. So, by noting that point general public automatically linked themselves in reused or recycling practices.

4.4 Conclusion

This study provided the evidence that collection of scrap waste provides economic opportunities for unemployed people and defined the job composition for them. As many illiterate

or literate people are working with scrap dealers and show their association with scrap business. These people are associated with collection of scrap then sorting, processing and transporting the scrap material along with working on logistic center to carefully managing the scrap and dealing with factories or industries. All the collection of scrap waste is exist in junkyard and the processing and sorting activities also done in scrap yard under the supervision of scrap owner. Moreover in terms of recycling of scrap waste materials, generally plastic, wood, glass, rubber tires, metals like aluminum, steel and copper are most locally recycled and reused. While glass is widely recycled and reused locally because it needs only the process of washing or molding which scrap owner do in their junkyard. Furthermore people also used scrap utensils made up of silver and copper just to protect themselves from threatening health issue. These locally practices of reused scrap material indicate that people show their concern towards cleaning the environment and adopt friendly practices which are the usage of bio fuel generating by melting the rubber tires. In addition, most of the scrap materials are transported to the industry in other cities like Lahore Gujranwala Taxilla. There is increasing number of people in Rawalpindi cantonments who are working in reduction of scrap waste by collecting door to door and earn livelihood from this and their contribution must be acknowledge by waste management company.

4.5 Recommendations

1. It is suggested there should be local industry for recycling process should be setup to decrease the cost of transportation when transport cost decrease this saving may be transferred to other stakeholders
2. There is need for proper mechanism of generalizing this industries to protect the primary waste collectors who got meager amount by the lean share is in engulfed by the scrap dealer and industries linked to the recycling process.
3. Researcher only targeted the male scrap waste collector while a lot of female are also attached with this unnoticed industry hence there is need for research to be conducted in future on female scrap waste collector.

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