

An Investigation into the Life of Child Rag-Pickers: A Case of Quetta City

By

¹Syed Nadeem Ahmed, ²Shahida Habib Alizai

Abstract:

The present study explores the lives of child rag-pickers in Quetta City. For the purpose, 40 child rag-pickers were purposively selected, out of total: 20 were boys and 20 were girls. Exploratory research design was used. In-depth interviews were employed using a topic guide. The findings of the study revealed that majority of the participants were migrants, they followed a tight daily routine, worked 11-16 hours per day, covered 20-30 km distance, collected 20-50 kg wasted materials and earned 150-1200 Pakistani rupee each day depending upon their age and sex. Participants had no social recognition at public places while at homes they were the bread winners and had value. Majority of the participants faced abuse, domestic violence, sexual exploitation, harassment and beating at the hands of elders, owners of Tapal, drug addicts, criminals and police. Life threatening diseases, psychological disturbance, dog bites, lack of toilets, exposure to drugs and lethal weapons were observed. Mass illiteracy and socio-economic pressure existed in them. The government, non-government agencies should provide them with better earning opportunities.

Keywords: Child rag-pickers, violence, health, education, toilets, Quetta.

Introduction:

Rag-pickers are mostly children with age 6-18 years. They move all the day on foot, bicycle or motor cycle and cover 20-30 km distance. They have to visit dumpsters, streets and markets to collect rags like plastic, glasses, irons, cardboard, ceramics, bones, etc. Heavy slags sling behind their shoulders and walk with bended backbone. They work all the day without rest and complain. Their clothes, faces, hands, feet and slags are all dirty and bad smell comes

¹M.Phil. Scholar, Department of Gender Studies University of Balochistan Quetta Pakistan

²Dr. Shahida Habib Alizai, Professor Department of Gender Studies University of Balochistan Quetta Pakistan

from them. No one is ready to talk or see them. The nature of their work has made them alienated from the society and they have internalized their lower social status. They face oral abuse, physical violence, and indulge themselves in drug addictive profession. They may die at the very young age due to dog bites, cancer, skin diseases, stomach issues, etc. Their health is always at the risk but they do not complain. They use open air for stool passing or urinating at public places. They are mentally disturbed people. Abject poverty, ignorance, no skill development, Afghan nationality, adverse environment, lack of role model, huge family size, etc. drag them to rag collecting profession. Rag-pickers live a life of dogs but earn for their families at the cost of their health, life and future. They need proper registration, social recognition, wages, school enrollment, protection from diseases and germs, gloves, shoes, masks and skilled training.

Methods:

This paper would shed light into the issues and problems faced by an individual rag-picker while collecting wasted materials (like rusted iron, papers, cottons, plastics, ceramics, bones, glasses, batteries, cardboards, etc.) at dumpsters, road sides and in streets. The first objective was to understand and reveal the gravity of the social problems faced by child rag-pickers. The second objective was studying the impact of these problems on child rag-pickers' personality.

The research was carried out through exploratory research method and primary research data was collected in the field. The data was analyzed in descriptive research technique. The sample size for this study was 40 out of which 20 male and 20 female rag-pickers. Interviews were conducted via in-depth interview with a topic guide questionnaire. Homogeneous purposive sampling technique was used for in-depth interviews.

The field work for this study was carried out in Quetta city, Balochistan. There existed various Tapals in the city. Huge number of rag-pickers both male and female used to collect rags from dumpsters, road sides, streets, markets and home. The major people of the city were Pathan, Baloch, Beravi, Hazara, Uzbek, and Punjabi.

Review of Literature:

Following are the works done earlier by the researcher on child rag-pickers.

A study conducted in Faisalabad reveals that 72% of trash pickers are illiterate, 52.4% belonged to Changar Caste, 41.2 searches for two times meal and 22.8% follow forefather profession. It is done in 10 Katchi Abadis of the

city. Total 250 trash picker children are investigated and descriptive and inferential statistic methods are applied in the study (Anjum, 2016).

A study carried out by Suresh Lal in Telangana, India reveals that 80% of rag-pickers are 11-15 years old, 74% illiterate, 68% earn low amount, 74% spend income on medical, 90% travel on foot, 85% face health hazards. Poverty, unemployment and illiteracy are the root cause of child rag-pickers. This study is based on primary and secondary data and 250 cluster sampling taken (Lal, 2019).

Shabnam Parveen discusses the socio-economic conditions child rag-pickers in Aligarh. She reveals that child rag-pickers have age 8-12 years. They migrate from poor and urban communities to find employment but engaged themselves in rag-picking profession. They do not have access to basic facilities. They have negative interaction with police, criminals, drug addicts and civil society (Parveen, 2015).

A study carried out in Nepal states that 16.3% rag-children live in junkyard shops and many have debt-bondage relation with the owner of shops; police is harsh on them and criminals, drug dealers and pick-pockets traps rag-pickers for personal work (Bal Kumar KC, 2001).

A study done in Brazil reveals that high unemployment, profitable solid waste materials and huge demand of recyclable materials have given acceleration to the rag-picking profession. The results show that 27% have contact with medical waste materials and 80% pick huge load (Silva, 2005).

Ethical Considerations:

Prior to undertaking in-depth interviews with the participants, it was ensured that no harm to any research participant be done, their confidentiality and anonymity was ensured, informed consent was verbally taken from their owners and them, given no false expectation, applied no pressure for interviews, informed them that they could leave the in-depth interview any time if they felt uncomfortable, access to personal data was ensured, pseudonyms was applied. Hand writing pattern was used in recording the in-depth interviews.

Table 1. Sample Demographic Characteristics of Male and Female Rag-pickers (N=20)

Sample Characteristics	Male: N		Female:	
N	%		%	
Age				
6-9	4	20	12	60
10-13	9	45	8	40
14-18	7	35	0	0
Ethnicity				
Pashtun		14	70	16
80				
Beravi	4	20	0	0
Uzbek	1	5	4	20
Religious Affiliation				
Islam	20	100	20	100
Education				
Primary		0	0	0
0				
Left Primary	2	10	0	0
Secondary		0	0	0
0				
Middle	0	0	0	0
Not Seen School		18	90	20
100				
Religious Education				
Visit Madrassah		0	0	0
0				
Visit Mosque	3	15	2	10

Left Mosque	2	10	0	0
Not Enrolled	15	75	18	90
Nationality				
Pakistan		3	15	1
5				
Afghan	17	85	19	95
Field Experience				
6 month-1 year		3	15	6
30				
2-4 Years		5	25	13
65				
5-7 Years		9	45	1
5				
8-10 Years		2	10	0
0				
11-13 Years	1	5	0	0
Family Structure				
Nuclear Family		2	10	5
25				
Joint Family	18	90	15	75
Family Size				
1-6	2	10	5	25
7-12	5	25	6	30
13-18	10	50	9	45
19-24	2	10	0	0
Not Known		1	5	0
0				

Father Occupation

Rag-Picker 25		3	15		5
Donkey Cart	2	10		3	15
Vegetable 0		2	10		0
Daily Wage	2	10		0	0
Drug Addict	3	15		4	20
old	2	10		3	15
Dead	3	15		2	10
No Work 15		3	15		3

Per Day Income

150-350 25		3	15		5
351-551 35		4	20		7
552-752 15		5	25		3
753-953 20		4	20		4
954-1154 5		2	10		1
1155-1355 0		1	5		0
13576-15576	1	5		0	0

House Rent

2000-4000 45		6	30		9
-----------------	--	---	----	--	---

4001-6001 25	4	20	5	
6002-8002 20	3	15	4	
8003-10003	4	20	0	0
10004-12004	1	5	0	0
Do not Know	2	10	2	10
Dog Bites				
No Bite 70	10	50	14	
One Time Bite	6	30	5	25
Two or more Times Bite 5	4	20	1	

Operational Definitions:

Rag-Picker is a person who collects rags or recyclable materials that could be sold for money (Vijaya, 2013).

Tapal is a Pushto language term meaning the shop or store where rag-pickers sell their picked wasted materials. (Male Respondent No.5)

Tapali is a Pushto term which refers to Rag-pickers. It actually means a person whom is tough, hard and never gives up. (Male Respondent No=15)

Results of the Study:

Daily Routine:

The participants followed a tough daily routine and worked 11-16 hours per day depending upon the age and sex of the participants. Participants collected rags at dumpsters, road sides and streets. Participants revealed that the working hours were high. They worked in extreme cold or hot weather and even in the corona pandemic. There was a common myth among them that a Tapali did not get exhaust which stops them from complaining and tiring.

“We are Tapali. We are tough. We never get tired. A Tapali is believed to be strong.” (Male Respondent No=04)

“Although, I am not getting tired but waking up in the morning is hard for me. My father uses to kick me in the ass to wake me up in the morning. But at night, I had no energy left.” (Female Respondent No=14)

Social Recognition and Status:

Participants revealed that they had zero social acceptability in general public. Majority of the participants complained of the social discouragement from the society. They mentioned that the society did not want to see them and they even could not look or touch people’s belongings on roads and streets.

“One day, I touched a person car. He came out of the car and hit me on the face. I cried and run off.” (Female Respondent No=06)

“People always hate us. They do not look at us. We are afraid of them. They are dangerous for us.” (Male Respondent No=17)

Few female participants revealed that people sometimes helped them and gave them positive regards.

“I am ok with the society because people like me and give me money and food sometimes.” (Female respondent No=20)

Social Abuse and Stigma:

Participants revealed that they faced abuse, stigma and stereotypes in the field. The rag-pickers were always called upon with bad names and considered dirtiest people of the world. Murdarkhor (Dirty), (poofter), Ghal (thief), Bherva (a local abuse), Kuchro wala (waste pickers), Falto log (people having no value), etc. were some of the abuses which they hear all the time. Girl rag-pickers were named as (daughter of slut), (flirty), Besharma (having no secrecy), etc. They faced multiple abuses each day but the fear of police made them silent. They lacked power and social recognition which had compelled them to internalize their lower social status. This had made them very upset.

“We daily face hundreds of abuses from all around. But we are silent because of the fear of police and people.” (Male Respondent No=12)

“Abuses make us upset and psychologically inferior to others.” (Female Respondent No=06)

“We are working for our families and survival but people abuse us. Why do they abuse us? Why am I afraid of them? Why do I face abuse?” (Male Respondent No=22)

Social Pressure:

The participants revealed that they were socially alienated from the society. They had to earn and live isolated lifestyle. Hikes in food items prices had made them worried. Either to take oil, flour to home or chicken, sugar, etc. They also had to pay high rents for their houses. Majority of the participants were in social pressure in order to run their kitchens, pay per month rents and look after the old and patients of their homes. Abject poverty has stopped the participants to get enrollment in schools or skilled works. The participants needed to earn 400-1200 per day at any cost, thus Rag-picking profession became an easy way to earning and putting social pressure at bay.

“One day, I cried when I was collecting rags from a dumpster and school children were celebrating Pakistan day. I wanted to participate but my brother told me to collect rags because there was no flour in our house.” (Male Respondent No=12)

“I am always worried because I have to earn 500 Pakistani rupees per day because my father would beat me as if I am failed to earn this amount.” (Female Respondent No=5)

“My father is sick and the brother is very small. My mother and I have to earn for them. Therefore, we do not waste a single moment. If we do not earn then who will provide for us?” (Female Respondent No=16)

Sexual Harassment:

Majority of the participants faced sexual abuse. There were countless child rag-pickers in Quetta, therefore, the chances of rape, sexual harassment, abuse was high among them. Majority of the participants faced sexual harassment from people, police, drug addicts, the elder Tapalis, the owner of the Tapal. Some even revealed rape cases with their friends and colleagues. There was no one to stand for them and register complains. Gay culture was also observed among the male participants. The skinny boys or girls were given much valued in the Tapal by the owner and the elders.

“There are people who used to touch our private parts. We only cry and run off.” (Male Respondent No=3)

“Our owner likes beautiful boys. He has two skinny children. He gives much value to them”. (Male Respondent No=10)

“One of my friends was gang raped by drug addicts in old meat market at Mehzan Chock.” (Male Respondent No=16)

“We girls also face sexual harassment from the hands of men, mostly.” (Female Respondent No=5)

Physical Violence:

Participants faced physical violence (beating and torturing) at the hands of their parents, elder brothers, police, shopkeepers, drug addicts, the people in the streets and the elder rag children. Participants mostly worked in fear and violent environment. Girls’ participants faced domestic violence.

“I want to kill my father because he beats me with no reasons. And in the field the owner is very hard on me.” (Male Respondent No=3)

“We often face beating and torture from father, brothers, shopkeepers, the owner of the tapal, the drug addicts and from the elders of our community. We do not make complains because no one helps us at all.” (Male Respondent No=15)

“I used to receive beating from my father all the time. At dumpsters and road side the police and the elders beat me sometimes. I am a small girl. I cannot fight back. ‘She cried’.” (Female Respondent No=10)

“My father beat me if I take little money to home or if I sleep early at night.” (Female Respondent No=16)

Police:

The Participants mentioned that the traffic police sergeant and the road side police were dangerous to them due to their age, Afghan nationality and working early in the morning. They were the soft targets for police. Few participants revealed extraction of money by police from them. Sometimes, police took them to prison where they were investigated and then told to clean their offices and toilets. They avoided complaining in police station. Majority of the male and some female respondents revealed harassment from the police.

“I used to give 50 rupees per day to police. They take us to police station for investigation and to clean whole police station. I fear and hate them.” (Male Respondent No=2)

“Police is dangerous for us. They take advantage of our childhood and Afghan nationality. I am afraid of them. Many times, I had received slapping

and kicking in my ass from them. I do not look at them.” (Female Respondent No=22)

Health Condition:

Majority of the participants had one or another health concerns. Sickness was common in them. Five Participants suffered from cancer, two from Cutaneous Leishmaniasis. Many had skin rashes, back bone and joint problems, eye sight, yellow eyes, stomach issues, shoulder and foot pains were observed in them. The participants had no idea of face mask, gloves, hand sanitizer, etc. Food and nutrients deficiency was also observed in majority of the participants. Further, they had little access to clean water and clean food.

“I am facing the throat cancer for 4 years. I had gone through Camo therapy. I work here to earn and buy my medicines. No one supports me.” (Male Respondent No=17)

“My foot and shoulders pain at night. I had no energy left at night.” (Female Respondent No=4)

“Many times, I got sick but we did not had money to buy the medicine. My younger brother died of diseases. We used to play and collect rags together.” (Female Respondent No=15)

“I have not seen hand sanitizer, gloves and good shoes. I work without taking care. I am fine. But I fear of body cuts which is common among us.” (Female Respondents=20)

Education:

All of the participants were out of school. A few participants were interested to be enrolled in schools. Financial and social constraints had kept them away from the education sector. Few participants visited Madrassah and Mosques for religious purposes but left early. Due to the work burden and abject poverty, the rag children did not take interest in learning.

“I want to get education but who will support me? We are poor. We work for livelihood.” (Male Respondent No=04)

“I am not interested in school. My school is at dumpster.” (Male Respondent No=12)

“I visit Mosque for learning Islamic education. I do not like it but my father forces me to go.” (Male Respondent No=17)

“We are poor. Our father does not want us to be in school. He wants us to earn for the family.” (Female Respondent No=09)

“I am not interested in school. I enjoy my time here.” (Female Respondent No=23)

Drug Abusers and Criminals:

Participants revealed that they had closed interaction with drug addicts and criminals at dumpsters. Majority of the male and some female participants had experienced drug usages with the drug addicts. They had touched weapons like pistol, Kalashnikov and many had daggers in their pockets/slugs. Furthermore, participants had heard and learned vulgar language, hat speech, jihadi sentiments from at dumpsters. Small portion of girls and boys rag-picker had even faced rape and sexual harassment. The participants mentioned that the drug addicts were also rag-pickers in their childhood days but interaction with the drug abusers at dumpsters had them so.

“I have many friends in drug profession. Sometimes, I take hashish from them. They are dangerous people. They used to harass other children.” (Male Respondent No=19)

“I hate drug addicts. One day, one of them gave me heroine. I was not aware of it. All the day my head spins and I got unconscious.” (Male Respondent No=23)

“One day, drug addicts captured me. They wanted to have sex with me. But my mother came and she got me fee from them.” (Female Respondent No=20)

“I fear drug addicts. They have enmity with us. We always fight with each other. I do not like them because many of our elders became one of them.” (Female Respondent No=25)

Toilet Issue and the Rag-Pickers:

Participants mentioned that the Quetta city has no functional public toilets. Majority of the participants faced sexual harassment, shame and distress while urinating or passing feces at dumpsters. Participants were worried about the lack of toilets. They feared of harassment and rape from the elders, drug addicts and the passing-by people while urinating at dumpsters.

“It is hard for me to pass feces or urinate in public. We use to guard each other while passing feces many of our friends through stones and garbage to us when we pee.” (Male Respondent No=02)

“We use to pee or urinate at dumpsters and City Nala. It is hard for us. I am ashamed of it but there is no way to go.” (Male Respondent No=12)

“We are girls. It is very dangerous for us to pee or urinate at dumpsters. Boys used to harass us all the time. We do it in groups of two or three. I am very upset over this issue.” (Female Respondent No=5)

“I always hold my feces or urine for a lot of time. But in emergency, I go to dumpster, where my friends guard me. It is very shameful for us. Most of the girls got raped due to this issue. And many girls quit this job due to the lack of public toilets.” (Female Respondent No=25)

Street Dogs:

Participants revealed that the street dogs and they searched at dumpsters for sustaining life which had developed a continuous enmity. The slum dogs searched for bones to eat and the rag-pickers collected bones to sell. Many of the participants were bitten by the slum dogs. This problem had made the participants very careful at dumpsters. Participants mentioned that every four children out of five had bad experiences with the slum dogs, even few had been bitten twice and thrice. Participants were aware of the rabies infection.

“Street dogs are dangerous especially when you are alone at dumpsters. I do not like them. I got two times bitten by slum dogs.” (Male Respondent No=5)

“One day, a sleeping dog attacked me. I was bitten by it. I took vaccine because one of my friends died of dog bite.” (Male Respondent No=24)

“I fear dogs. One day, two dogs run behind me. I was bitten by them. I want to kill all of them.” (Female Respondent No=6)

“Street dogs are dangerous for us. They always bark behind us. We use to collect wasted bones at dumpsters due to which they fight back. I got three times bitten by dogs.” (Female Respondent No=19)

Discussion, Suggestion and Conclusion:

The rag-pickers were mostly male. A small portion of female child rag-pickers existed in Quetta city due to their sex and gender discrimination. The age of the participants ranged 6-18 years. Participants had to follow a tough daily routine and were supposed to work for 11-16 hours per day. But the earning was very minimal compared to their working hours. They earned 150-1500 Pakistani rupees per day according to their ages and sex. Girls earned less because after sunset, they were supposed to be at home due to *parada* (veil) issue and domestic work. Md Abdul Hai revealed that most of the rag-

pickers especially girls were powerless. They faced the brutalities by the hands of aged rag-pickers, police and people (Hai, 2014). Rag-pickers had great value in families but at public places their social status died and no one encouraged and supported them. They were viewed as Murdarkhor, Kuchro wala, Bangi, Randi, Kusaka, etc. They were not allowed to be active part of the society. They could not touch, look and nearly pass people in streets and road sides. Each day, they heard thousands of abuses all round. There was a huge family pressure on them. They had to earn at any cost to run their families. In cold season, in hot weather, in rain, in snow, in storm, in this corona virus pandemic, they were supposed to collect rags and earn for their families. They even faced physical violence at the hands of their elders and people in public areas. The police also committed violence against them. They were questioned and told to clean the police offices by force. Majority of the participants offered protection money to police. With all these problems, they also encountered health issues. A study revealed that the rag-pickers were not beggars instead they work hard, they faced abuse, sexual exploitation, false accusation and imprisonment with elder prisoners, therefore, the society needed to change its attitudes toward them and they should be enrolled in public life actively (Chary, 2006). Many of them were sick, had cancer, and skin, stomach, eye, foot, shoulder and backbone problems. A study done in Brazil revealed that 45.1% rag pickers had pain in lower extremities compared to 38.3% of non-rag pickers, 80% feared of injuries at work place, 71% believed their work was dangerous, 59% had body cuts, the most effected parts were hands (50%), followed by lower extremities 20% (Marcelo Cozzensa da Silva, 2005). A study done in Karachi revealed that 32% rag-pickers had skin issue, 20% had stomach problem, 4% had cough issue and 20% had respiratory issue (Aamir Abbas, 2018). Due to abject poverty, ignored parents, lack of motivation force, they had never seen or visited school and many had left Madrassah. Ayaz Ahmed discovered in his article that poverty, lack of parental motivation and quality education were the utmost reasons for child Labour (Ahmed, 2017). The drug abusers and dogs were also serious issues concerning their presence at dumpsters. Many of them were the victimhood of drug addiction. A study revealed that majority of the child rag-pickers used smoking and alcohol, they did not want to quit the work, majority believed that the work was dirty and gender discrimination was evident between male and female rag-pickers, boys were in majority in this work (Giri, 2011). Dog bite was also a common issue among them. They faced the problem of passing stool or urinating at public places because there were no functional toilets at public places. A study done by S. Charles revealed that 95% women rag-pickers were illiterate, 82% were working more than ten hours per day, 92% earn Rs.200-400 per day, 83% complained of

sexual harassment, 92% used tobacco, 12% were regular consumer of alcohol and 66% of them were unhealthy (S.Charles, 2018). This problem was much more dangerous for girls and boys at the age of 6-15 years. Thus, the participants confronted thousands of socio-economic and political problems each day. There was no one to save them, give them protection, provide them proper training and easy education, save them from the brutalities of police, drug addicts and people in the public areas, spread awareness among them regarding dangerous diseases like AIDS, hepatitis, corona, typhoid, skin diseases, etc. In short, they needed attention. This was a serious social issue.

Therefore, the government and the non-governmental organizations should come for their aid. Proper registration, formal wages, police facilitation centers, formal training, proper gloves, masks and shoes, easy school enrollment, skilled work teaching, medical help like quick and random HIV, Hepatitis, etc. tests and to offer free medication to them, vaccination of street dogs or their eradication, change in public perception that they are not Kuchro-wala (Rag-pickers) instead they are the cleaner for the society, financial help like poor dues and easy loans to start their own business, and media help is also to the point. They are the un-heard heroes for their families and community. Therefore, the state should recognize their work and social status.

Bibliography:

- Aamir Abbas, D. S. (2018). A Socioeconomic Characteristics and Health Problems of Trash Picking Children in Karachi. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, 143-158.
- Ahmed, A. (2017). Poverty, Education and Child Labour in Aligarh City-India. *Journal of Social Sciences*, 162-172.
- Anjum, Z. B. (2016). A Sociological Study of Trash Picker Children in Faisalabad City, Punjab,. *Pakistan Journal of Life and Social Sciences*, 33-37.
- Bal Kumar KC, Y. B. (2001). *Investigating the Worst Forms of Child Labour, Nepal, Situation of Child Ragpickers.*. Geneva: International Labour Organization, International Programme on the Elimination of Child Labour (IPEC).
- Chary, L. B. (2006). AN EMPIRICAL STUDY ON CHILD RAGPICKERS IN WARANGAL CIT. *Indian Journal of Human Rights and Justice*, Vol. 2,, 39-48.
- Gelling, L. (2013). A feminist approach to research. *Nurse Researcher* , 6-7.
- Giri, S. (2011). Status of Rag Pickers A Study of Narayanghat Bazaar, Bharatpur, Chitwan, Nepal. In S. Giri, *Status of Rag Pickers A Study of Narayanghat Bazaar, Bharatpur, Chitwan, Nepal* (pp. 1-48). Bharatpur, Chitwan: Maiya Devi Girls College Bharatpur, Chitwan.
- Hai, M. A. (2014). Problems Faced by the Street Children: A Study on Some Selected Places in Dhaka City, Bangladesh. *International Journal of Scientific & Technology Research*, 45-56.
- Lal, S. (2019). Child Ragpickers in India: An Investigation into Waste Managment Health Hazards and Earnings in Telangana. *Economic Challenger*, 107-116.
- Marcelo Cozzensa da Silva, C. E. (2005). World at Work: Brazilian ragpickers. *ResearchGate*, 736-740.

- Parveen, S. (2015). Child Ragpickers in Aligarh City. *International Journal of Scientific Research*, 200-201.
- S.Charles. (2018). A Study among the Problems Faced by Women Rag Pickers in Madurai Corporation. *World Wide Journal of Multidisciplinary Research and Development*, 42-43.
- Silva, M. C. (2005). World at work: Brazilian ragpickers . *Occupational and Environmental Medicine*, 736-740.
- Vijaya, B. S. (2013). Problems of Child Ragpickers. *International Research Journal of Social Sciences*, 6-11. Retrieved from <http://isca.me/IJSS/Archive/v2/i2/2.ISCA-IRJSS-2012-03.pdf>