

ENABLING FACTORS FOR THE EXISTENCE OF WASTE PICKERS: A SYSTEMATIC REVIEW

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The paper reports on a systematic review research process to determine the enabling factors for waste pickers to operate in the informal economy in South Africa. Twenty-eight South African journal articles, theses and position and policy papers were sourced and appraised. The results indicate that recognition of the waste pickers in the waste system is the most enabling factor for them to operate. The concept of recognition is analysed, described and explained as assisting waste pickers to become more visible, having a voice and to be validated.

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Armoede (Poverty)

*Dit skreeu my in die gesig elke Maandag
-ons buurt se dag vir vullis verwijdering-
Wanneer die dromme uitgesit is
En ek, hartseer- watter rou gesig- mense
In die afval sien grou vir iets te ete
En drinke. Dan laai woede in my hart op.....*

Adam Small from *Klawerjas*

[It screams in my face every Monday
Rubbish collection day in our neighbourhood
When the trash bins are put out
It breaks my heart to see raw-faced people
dig in the waste for something to eat
And to drink. Then rage builds up in my heart...]

INTRODUCTION

The increased pace at which populations have grown in the major cities in developing regions has paved the way for rapid growth in the informal economy (De Soto, 1989; Lyons & Snoxell, 2005). Over the last three decades the International Labour Organisation (ILO) and other role players have become more and more aware of the inevitability of informal sector activities, on the one hand, and of their income-generating potential, on the other (Lyons & Snoxell, 2005). South Africa's informal economy has also become the place where significant numbers of people are trying to make a living in the urban areas.

In the first quarter of 2014 there were 2.446 million people in South Africa (12.3% of the labour force of around 20 million people) trying to make a living in the informal economy (excluding the agricultural sector) (Statistics South Africa, 2014). Compared to countries such as India, where 90% of the people make a living in the informal economy (Harris-White, 2002), the 12.34% of the South African labour force is relatively low. Given the fact that South Africa has one of the highest unemployment rates in the world (25.2% according to StatsSA 2014), more people should theoretically be able to enter the informal economy (Mamphitha, 2011). The question then arises as to whether the low number of people in the informal economy is an indication that circumstances for survival in the informal economy are not very enabling?

In 2003 the then President of South Africa, Thabo Mbeki, mentioned the fact that the informal economy was structurally disconnected from the formal economy and that ways should be found to link the formal and informal sectors (Valodia & Devey, 2012). Schenck, Blaauw and Viljoen (2012), who conducted research on the waste pickers on

landfill sites in the Free State, and Blaauw (2010), who researched the day labourers¹ in South Africa, also referred to the fact that the informal economy remains trapped at the hand-to-mouth subsistence level, with low-profit enterprises that are disconnected from the formal economy. Adding to the debate, Lund and Skinner (2004) attributed the fact that the informal economy in South Africa was still “underdeveloped” to the lack of education and skills, a mind-set or attitude towards the informal economy and policy challenges (Rogerson, 1996; South African Local Economic Development Network, 2013; Valodia & Devey, 2012). Furthermore, Blaauw (2010) and Schenck *et al.* (2012) and the South African LED Network (2013) confirm that there are challenges in providing developmental and inclusive contexts that are conducive to the people in the informal economy being able to function.

Waste pickers are one of the groups of people who make a living in the informal economy by picking waste from the streets and landfill sites throughout the developing world, including South Africa (Samson, 2010a, 2010b). The waste pickers in particular interact with the formal waste system, but it seems as if the structural gap between the formal and informal waste economy remains in place (Samson, 2012; Schenck *et al.*, 2012; Viljoen, Schenck & Blaauw, 2012).

Recycling creates jobs and plays a role in creating an opportunity for people to earn an income by informally collecting and selling waste to the buy-back centres (BBCs), which in turn sell it to the recycling companies and contribute towards waste reduction. This process happens in tandem with the municipal waste systems that collect waste and either dump it on the landfill sites or, if organised, will recycle it to some extent and sell it to the recycling companies (Huegel, 2013; Samson, 2012; Schenck *et al.*, 2012; Viljoen *et al.*, 2012). The research question was therefore: “What factors will enable the functioning of the waste pickers in the waste system?” The aim of this article was to determine the enabling factors by implementing a novel and innovative research method, i.e. a systematic review (Stewart, 2014).

RESEARCH METHODOLOGY

After scrutinising the research concern, it was decided to embark on a systematic review of the existing research and literature on waste pickers in South Africa to determine what research had already been conducted on closing the gap between the formal and informal economy with reference to waste pickers, and what factors could assist or facilitate the functioning of the waste pickers. A systematic review (SR) is described as an overview of primary studies or “secondary” research (Stewart, 2014) conducted according to explicit and transparent methods (Teing, 2007). Teing (2007) further emphasises the fact that the study should be conducted in such a manner that it could be reproducible. A systematic review will answer the question and highlight the gaps in the research and literature, and indicate the way forward for future research.

¹ Unemployed people standing next to the road waiting to be employed for the day.

THE SYSTEMATIC REVIEW RESEARCH PROCESS

A systematic review is described as a review which is based on a clearly formulated question, identifies relevant studies, appraises theory quality and summarises the evidence with the use of explicit methodology (Kahn, Kunz, Kleijnen & Antes, 2003; Stewart, 2014). Kahn *et al.* (2003) further state that it is the rigorous and systematic nature of the methodology that distinguishes systematic reviews from traditional reviews or literature studies. The steps of the systematic review process, as explained by Kahn *et al.* (2003), are as follows:

TABLE 1
THE SYSTEMATIC REVIEW PROCESS

Step 1: Framing the question/s for the review
Step 2: Identifying relevant work and the inclusion criteria
Step 3: Assessing the quality of the studies
Step 4: Summarising the evidence
Step 5: Interpreting the findings

Source: Kahn *et al.* (2003)

This systematic review process as described by Kahn *et al.* (2003) was applied to this study and will be discussed next.

Step 1: Framing questions for a review

Kahn *et al.* (2003) state that a clear, unambiguous and structured question should be formulated before beginning the review work, as the question will determine and guide the rest of the process. Teing (2007) specifically explains that a good research question should consist of an *intervention* (I), *participants* (P) and *outcomes* (O). The research question formulated to guide this study is:

What are the enabling factors (I) that will enhance the functioning (O) of the waste pickers (P) in the waste system in South Africa? The aim of this systematic review was to determine the factors which will enable waste pickers in South Africa to make a more sustainable living from collecting and selling waste. In particular the objectives of the study were to:

- determine the prevalence of waste pickers in South Africa's informal economy;
- describe the challenges waste pickers in South Africa experience in order to make a living;
- describe the factors which enable the functioning of waste pickers in South Africa;
- critically appraise the studies under investigation; and
- identify the gaps in the literature for further research

Step 2: Identifying relevant work and the inclusion criteria

The second step is the extensive search for the research studies and the development of clear and explicit criteria for inclusion or exclusion of the studies from the review. According to Kahn *et al.* (2003), Teing (2007) and Stewart (2014), the criteria should be clear and recorded in order to make the study reproducible.

During July 2013 a comprehensive search was conducted of databases such as Ebscohost, Google Scholar, Project Muse, Jstor, Wiley International, Springerlink, Sage Journals and Sabinet. WIEGO (Women in Informal Employment: Globalising and Organising) is an action research policy network with many research publications being produced on the informal economy, of which those on waste pickers are a subgroup. Some of the research/policy documents were from the WIEGO database. In addition, the references in publications were perused for research documents.

The research terms or key words used for the literature search were: “landfill waste pickers”, “street waste pickers”, “garbage pickers”, “scavengers,” “informal waste collectors” in “South Africa”. Originally the concept “informal economy” was included in the search, but was later excluded as articles referring only to the informal economy, without reference to the waste pickers, appeared. It is accepted that the waste pickers function within the informal economy. The inclusion criteria used for the selection process:

- The articles should be published in English;
- Scientific articles, masters and doctoral theses, position papers and policy documents were allowed, since research on waste pickers in South Africa is limited;
- Only South African studies were selected; and
- Only studies on street waste pickers and landfill waste pickers were included. Studies on itinerant waste buyers – those who go from door to door and make a pickup, as well as being part of the municipal collection crew, were excluded.

The initial research yielded 2,982 possible articles and other publications. After applying the inclusion criteria only 29 articles and theses complied with the set criteria. Good systematic reviews aim to include only good-quality papers (Stewart, 2014). According to Teing (2007), the critical appraisal step is one of the most important steps in the systematic review process, as it is the decisive factor in including or excluding a study. The following tool for appraising the articles was developed to determine the scientific value of each study:

TABLE 2
THE CRITICAL APPRAISAL TOOL

	Yes	No
The value of each yes = 1		
The value of each no = 0		
For each of the articles the following questions should be answered:		
1. Are the aims/objectives of the article clearly described?		
2. Is the sampling process described?		
3. Is the research process described? (quantitative / qualitative/ mixed methodology)		
4. Is the data collection process described?		
5. Is the data analysis process described?		
6. Are the findings described and explained?		
7. Are the challenges waste pickers experience explained?		
8. Are facilitating / enabling factors to enhance their existence described?		
Scoring: Total score divide by total number of items multiply by 100		
<i>Good</i> 67-100%	<i>Satisfactory</i> 34-66%	<i>Bad</i> 0-32%

The above appraisal tool was used to evaluate each study. A tool like the above ensures that “unscientific” studies are not used and that the research is not based on opinions and biased comments.

Step 3: Assessing the quality of the studies

The 28 studies included in the study scored as follows:

The majority of the studies were rated as good and scored above 67%. Those with lower scores were included if they indicated or explained challenging and enabling factors for the functioning of the waste picker. The study by Samson (2010b) is also a literature review of studies completed in Africa and was used as a benchmark for this particular study. The focus of her study was different, as it tried to determine what research has been done in Africa on waste pickers. The following table will provide an overview of the type of studies being done and whether they are relevant to the facilitating or enabling factors for waste pickers’ functioning.

TABLE 3
RESULTS OF THE APPRAISAL OF THE STUDIES

Study No.	Authors	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	%
1	Benson & Vanqa-Mgijima 2010	1	1	1	1	0	1	1	1	87
2	Chvatal 2010	1	1	1	1	1	1	1	1	100
3	De Kock 1986	1	1	1	1	0	1	1	1	87
4	Heugel 2013	1	1	1	1	1	1	1	1	100
5	Joubert 2012	0	1	1	1	1	1	1	1	87
6	Langenhoven & Dyssel 2007	0	1	1	0	0	1	1	1	63
7	Mamphitha 2011	1	1	1	1	1	1	1	1	100
8	McLean 2000a	1	1	1	1	0	1	1	1	87
9	McLean 2000b	1	1	0	1	0	1	1	1	75
10	Naidoo 1994	1	1	1	1	1	1	1	1	100
11	Nkosi 2006	1	1	1	1	1	1	1	1	100
12	Oelofse & Strydom 2010	1	1	1	1	1	1	1	1	100
13	Quazi & Dobson 2013	1	1	1	1	0	1	1	1	87
14	Ralfe 2007	1	1	1	1	1	1	1	1	100
15	Roberts 2012	1	1	1	1	1	1	1	1	100
16	Samson 2009	0	0	0	0	0	1	1	1	37
17	Samson 2010a	1	1	1	1	0	1	1	1	87
18	Samson 2010b	1	1	1	1	0	1	1	1	87
19	Samson 2012	1	1	1	1	1	1	1	1	100
20	Schenck & Blaauw 2011a	1	1	1	1	1	1	1	1	100
21	Schenck & Blaauw 2011b	1	1	1	1	1	1	1	1	100
22	Schenck, Blaauw & Viljoen 2012	1	1	1	1	1	1	1	1	100
23	Schoeman & Sentime 2011	1	1	1	1	1	1	1	1	100
24	Sentime 2011	1	1	1	1	1	1	1	1	100
25	Sentime 2012	1	1	1	1	1	1	1	1	100
26	Sobuce 2012	1	1	1	1	1	1	1	1	100
27	Trask 2013	1	1	1	1	1	1	1	1	100
28	Vearey, Richter, Nunez & Moyo 2011	1	0	1	0	0	1	1	1	43
29	Viljoen, Schenck & Blaauw 2012	1	1	1	1	1	1	1	1	100

TABLE 4
DATA EXTRACTION METHOD

	Authors	Research design	Article	Thesis	Position/ policy paper	Facilitating factors suggested	Implemented or applied projects?
1	Benson & Vanqa- 2010	Qualitative		X	Yes	No	
2	Chvatal 2010	Qualitative		X	Yes	No	
3	De Kock 1986	Quantitative/Descriptive		X	Yes	No	
4	Heugel	Qualitative ethnographic		X	Yes	No	
5	Joubert 2012	Qualitative		X	Yes	No	
6	Langenhoven & 2000	Qualitative	X		Yes	No	
7	Mamphitha 2011	Quantitative		X	Yes	No	
8	McLean 2000a	Quantitative/Descriptive	X		Yes	No	
9	McLean 2000b	Qualitative	X		Yes	No	
10	Naidoo (1994)	Quantitative/Descriptive		X	Yes	No	
11	Nkosi 2006	Quantitative/Descriptive		X	Yes	No	
12	Oelofse & Strydom 2010	Qualitative	X		Yes	No	
13	Quazi & Dobson 2006	Qualitative	X		Yes	Yes	
14	Ralfe 2007	Quantitative/Descriptive	X		Yes	No	
15	Roberts 2012	Qualitative observation Site	X		Yes	No	
16	Samson 2009	Qualitative /Case study	X		Yes	No	
17	Samson 2010a	Qualitative case study		X	Yes	Yes	
18	Samson 2010b	Literature review		X	Yes	No	
19	Samson 2012	Qualitative		X			
20	Schenck <i>et al.</i> 2011	Qualitative	X		Yes	No	
21	Schenck <i>et al.</i> 2011	Mixed method/Descriptive	X		Yes	No	
22	Schenck <i>et al.</i> 2012	Quantitative Descriptive		X	Yes	No	
23	Schoeman & 2010	Quantitative Descriptive	X		Yes	No	
24	Sentime 2011	Quantitative/Descriptive	X		Yes	No	
25	Sentime 2012	Quantitative	X		Yes	No	
26	Sobuce 2012	Qualitative		X	Yes	No	
27	Trask 2013	Qualitative/Design		X	Yes	No	
28	Vearey <i>et al.</i> 2011	Existing research/	X		Yes	No	
29	Viljoen <i>et al.</i> 2012	Quantitative	X		Yes	No	

Fifteen of the studies were published as articles in academic journals or on the internet, while nine were master's dissertations. There was no doctoral study amongst the studies. The studies indicated as policy or position papers were those published on the WIEGO website. The first and oldest study was the dissertation by De Kock (1986); none appeared between 1990 and 1999. In 2000 there were two articles by McLean (2000a, 2000b) and it was only after 2005 that research on waste pickers was published (4) and 21 research documents were published after 2010. One can only speculate on the reason for the sudden interest in the waste pickers. Similar to Samson's (2010b) research, most of the studies are empirical and are case studies of the waste pickers' demographics and their working conditions. Most of the studies consist of small samples and are localised to a city or to landfill sites. The article by Viljoen *et al.* (2012) is the only one which focuses predominantly on the buy-back centres (BBCs) and provides good insight into the functioning of this important role player in the lives of the waste pickers. Nkosi (2006) is the only study determining whether the waste pickers have a significant impact on the reduction of the waste on the landfill sites, and influences and extends the life expectancy of the landfill sites.

Trask (2013), an architectural student, submitted a proposal for an innovative design for a building which would facilitate the functioning of the waste pickers in Newtown, Johannesburg, but it was not implemented. The studies by Samson (2010a) and Quazi and Dobson (2013) are the only articles which reported on projects to be implemented in order to improve the livelihoods of the waste pickers.

Step 4: Summarising the evidence

According to Stewart (2014), the collected qualitative evidence is summarised as a narrative synthesis. This enables the researchers to bring together the findings of the different studies.

Prevalence of waste pickers in South Africa

To determine the exact prevalence of waste pickers in South Africa is nearly impossible, as they operate in the informal economy, and are unregistered and unregulated. Only estimated numbers could be found in the studies. Langenhoven and Dyssel (2007) cited the South African Yearbook 2000/2005 as indicating 37,000 waste pickers, while Schenck *et al.* (2012) suggested that 70,000 waste pickers may be operating in South Africa. The study by Viljoen *et al.* (2012) indicated that it is difficult to determine how many people are picking up waste on the streets and landfill sites of South Africa, as you cannot merely aggregate the number of waste pickers by the sales of their collections to the BBCs, as they sell to more than one company. Waste pickers enter and leave waste picking, and there are those who collect and sell only when they need additional income (Chvatal, 2010; Schenck & Blaauw, 2011a). No national study or survey has been completed that could give a more accurate overview of the numbers nationally (Quazi & Dobson, 2013).

What was emphasised in the studies is that there are no barriers to entering waste picking. No skill or education is required and people can do it for a living or to add to their income (Viljoen *et al.*, 2012). All the articles and sources were positive about the

opportunities that waste picking provides for people to survive and make a living, and support the idea that enabling factors should be put in place to enhance the functioning and income of the waste pickers on the streets and landfill sites. These factors will be dealt with in the next section.

Challenging and enabling factors for the functioning of the waste pickers

To be able to discuss the enabling factors for the functioning of the waste pickers, the challenges they face must be discussed to provide the relevant context. The research studies identified certain challenges the waste pickers experience and then suggested the possible enabling actions to be taken. Most of the enabling factors were given as suggestions and only two studies some actual actions taken (Quazi & Dobson, 2013; Samson, 2009, 2010a). No study was found which evaluated the impact of implemented policies, programmes or projects, which indicates a serious gap to be investigated.

To make sense of the data emerging from the literature, the authors used Creswell's eight steps of data analysis (Creswell, 2009). Table 5 illustrates the major themes of the challenges and enabling factors which emerged from the systematic review.

TABLE 5
THEMES OF CHALLENGES AND ENABLING FACTORS IN THE
FUNCTIONING OF THE WASTE PICKERS

Overarching theme: Recognition		
Sub-theme 1: Policies and strategies (Voice)	Sub-theme 2: Operational challenges and enabling factors (Validity)	Sub-theme 3: Attitudinal challenges (Visibility)

Source: Authors' framework

Overarching theme: Recognition of the waste pickers

Most of the studies suggested that the waste pickers' functioning is challenged by the fact that they are not *recognised* and that if recognition were given to the waste pickers, their functioning could be enhanced. The concept of *recognition* itself was not explained or unpacked, but through the review of the literature the concept of *recognition* emerged in three sub-themes which are similar to the concepts in the change process that Quazi and Dobson (2013) refer to. Recognition can be seen as a process of becoming *visible*, gaining *validity* and having a *voice* (Quazi & Dobson, 2013).

Sub-theme 1: Voice: Recognition through legislation, policies and strategies

On more than one occasion and at various levels the South African government has acknowledged the value of recycling and recognises that recycling can help to sustain the livelihoods of impoverished communities. Examples are the 1998 Polokwane conference of the ruling party, the newly adopted 2011 National Waste Management Strategy (NWMS) and the National Environment Management Act 59 of 2008 (NEMA). In 1998 they encouraged entrepreneurs to open BBCs, but no recognition was given to the informal waste pickers who collect and sell to the BBCs (Langenhoven & Dyssel,

2007; Mamphitha 2011; McLean, 2000b; Quazi & Dobson, 2013; Samson, 2012; Sobuce, 2012). The implication of this omission from the policies and legislation is that the waste pickers function on the margins or outside of the formal waste management system and are excluded because they do not have a voice. Samson (2010b) also found in her literature review that no mention was made in the African literature of any formal institutional recognition given to the waste pickers.

Suggestions therefore refer to the recognition of the waste pickers as significant role players in the broader waste management system (Langenhoven & Dyssel, 2007; Chvatal, 2010; Schenck *et al.*, 2012; Viljoen *et al.*, 2012). Oelofse and Strydom (2010) suggest that local government should incorporate the informal waste pickers into their strategic plans for waste collection and make them part of the operational waste collection system (Chvatal, 2010; Sobuce, 2012).

Evidence of recognition of waste pickers can be found in the article by Joubert (2012), which indicates that the Tshwane municipality “allows” the people on the Garstkloof landfill site, where they organise themselves as to how they function and operate on the landfill site. They were encouraged to organise themselves with their own committee which manages the picking of waste on the landfill site. Quazi and Dobson (2013) also describe a project that involves organising the street waste pickers in Durban, with recognition and support from the local government, the public and private sectors, and the Department of Social Work at the University of South Africa’s Bright Site project.

Furthermore, Samson (2010b) and Chvatal (2010) describe case studies of landfill sites where the waste pickers were officially and legally allowed to operate. To “allow” the waste pickers on the landfill site does not always imply recognition without other forms of support or inclusion in other decision-making structures or proper management of the landfill sites. Roberts (2012) found in his observations of the landfill sites in the Free State that many of the landfill sites “allow” waste pickers but, without proper management of the landfill sites by the local government, they become metaphorically speaking unmanaged “dumpsites” instead of properly managed landfill sites; this consequently reflects mostly on the inefficiency of the local government’s waste management strategies.

The fact that none of the mentioned national policies or strategies (NEMA and MWMS) recognise the waste pickers leaves the local governments to decide on how they would act upon, interact with or exclude the waste pickers (Benjamin, 2007; Chvatal, 2010; Farthing, 2009; Langenhoven & Dyssel, 2010; Samson, 2010a).

Sub-theme 2: Validity: Operational challenges and enabling factors

Validity is an aspect of the recognition of waste pickers, which is achieved when they are supported in their daily functioning. The following areas where the waste pickers’ functioning can be enhanced have been identified in the studies.

Enhance the access to waste

The main aim of the waste pickers is to collect and sell sufficient waste to make a living. Their income is directly linked to their access to the waste. Waste is also collected for

their own household use and items such as pots and pans for cooking, clothes and even food are salvaged (Chvatal, 2010; Schenck & Blaauw, 2011a, 2011b; Schenck *et al.*, 2012).

According to Chvatal (2010), 95% of waste produced in South Africa is still disposed of on land, while South Africa currently recycles only around 50% of its recyclable waste. Mamphita (2011) mentions that South Africa on average only recovers 52% of all recyclable paper and 26% of all recoverable plastic. These figures are low when compared to those in developed countries, where close to 90% of paper is recovered. The rest still goes to the landfill sites. There should therefore theoretically be sufficient waste for the waste pickers to collect and sell. Factors such as the fact that people do not separate at source (Viljoen *et al.*, 2012), bulldozers cover the waste before the waste pickers can reach the waste (Schenck *et al.*, 2012), and/or the waste collection trucks get to the bins on the streets before the waste pickers can do so (McLean, 2000a, 2000b) make it difficult for the waste pickers to access sufficient waste. Some of the local authorities also prevent the waste pickers from accessing the landfill sites (Samson, 2010a). Some of the researchers indicated that people, for instance, security guards or municipal workers, will prevent the waste pickers from accessing the waste and, in particular, the valuable items (such as metal) which they want to sell themselves (Chvatal, 2010; Sobuce, 2012).

Accessing waste is an operational as well as an institutional factor and some suggestions that may assist the waste pickers to access more waste were made in the studies.

- At an institutional level: Recognising the waste pickers in policies and national strategies such as NEMA and NWMS will assist in managing the waste picking on the streets and landfill sites (Chvatal, 2010; Quazi & Dobson, 2013; Sentime, 2012; Sobuce, 2012). Thus, it is not up to the local government and political and community dynamics to determine whether the waste pickers may or may not function on the landfill sites (Samson, 2009, 2010a, 2012).
- On an operational level the most important suggestion is for the public to “separate at source” (Sobuce, 2012; Viljoen *et al.*, 2012). It is easier for street waste pickers to pick up bags of dry waste than having to scratch between the wet waste for the recyclables.
- For the landfill waste pickers, suggestions were made to the local authorities or private companies managing the landfills not to cover the waste until the waste pickers have had the chance to salvage the waste, or that they establish Material Recovery Facilities (MRFs), where waste can be separated by the waste pickers before it goes to the landfill sites (Schenck *et al.*, 2012; Sobuce, 2012).
- The private sector can assist by providing the waste to the waste pickers to be picked up and sorted, e.g. cardboard boxes and white paper (Quazi & Dobson, 2013).
- Awareness of the value of recycling and of the waste pickers and well-managed landfill sites will assist access to waste for the waste pickers (visibility and validity) (Quazi & Dobson, 2013).

Registration and identification of the waste pickers

Quazi and Dobson (2013) and Chvatal (2010) highlight the importance of developing visibility and validity as part of the recognition process of the waste pickers and suggest the registration and identification of waste pickers. The provision or accessing of uniforms or T-shirts and/or protective clothing would add to the visibility and validity of the waste pickers. The articles do not state clearly who should take responsibility for these processes/actions.

Attention to health risks and Illness

Concern was expressed by most of the authors about the health risks of waste picking (Langenhoven & Dyssel, 2007; Oelofse & Strydom, 2010; Schenck & Blaauw 2011a, 2011b; Schenck *et al.*, 2012; Schoeman & Sentime, 2010). The waste pickers have to scratch through the waste in the bins or on the landfill sites. The waste can be toxic or they can be hurt by sharp objects (Vearey *et al.*, 2011). The waste pickers complained about aching backs, upper respiratory infections, bruises and scratches, and toxic waste effects, and indicated that protective clothing like masks, gloves and boots would improve their working conditions (Benson & Vanqa-Mgijima, 2010; Langenhoven & Dyssel, 2007; Mamphitha, 2011; McLean 2000a, 2000b; Oelofse & Strydom, 2010; Schenck & Blaauw, 2011a; Sobuce, 2012;).

Further suggestions were made for the provision of basic health services, vaccinations and healthier working conditions (Oelofse & Strydom, 2010; Quazi & Dobson, 2013). It is difficult for the waste pickers to attend a clinic for a day as they lose income. Mobile health services at the landfill sites should be considered (Chvatal, 2010; Sobuce, 2012).

Provision of sorting facilities, shelters and basic amenities

The studies by Mamphitha (2011), Schenck and Blaauw (2011b), Sentime (2011) De Kock (1986), McLean (2000a, 2000b) and Nkosi (2006) showed that the majority of the waste pickers in Pretoria, Durban and Johannesburg were intra-country migrants coming from rural areas in provinces within South Africa. A small number of waste pickers were migrants from neighbouring countries. In most cases they do not earn enough to pay for shelter, and do not have a place to leave their trolleys or to sort and store their collected goods. They therefore sleep on the street or at the landfill sites without access to basic facilities such as toilets and water to wash themselves (Benson & Vanqa-Mgijima, 2010; Chvatal, 2010; Langenhoven & Dyssel, 2007; McLean, 2000a, 2000b; Nkosi, 2006; Roberts, 2012; Sobuce, 2012). The need for shelters on the landfill sites, where the waste pickers can sort and store their waste to protect it from getting wet, as well as to provide protection from the gruelling sun while sorting waste, was also highlighted (Chvatal, 2010; Nkosi, 2006; Sobuce, 2012). Trask (2013), writing as an architect, highlighted the need for and designed a facility where street waste pickers could store and sort their waste and have access to basic amenities in Newtown, Johannesburg. No studies could be found that indicated where any of these facilities were made available to the waste pickers, except the study by Viljoen *et al.* (2012). One buy-back centre provides shelter for the waste pickers who sell to the particular buy-back centre. Most buy-back centres allow the waste pickers to access toilets and water at the buy-back

centre. The study by Quazi and Dobson (2013) notes that the NGO Asiye Etafuleni (isiZulu meaning “bring to the table”) in Durban provides basic facilities to the street waste pickers. The provision of sorting and storing facilities, basic amenities and shelter will minimise health risks, enhances the dignity of the waste pickers and promotes recognition of them.

Transportation of collections

For the street waste pickers trolleys are the best mode of transportation for their collected waste to the buy-back centres. Langenhoven and Dyssel (2007) found that those collecting with trolleys earn more than those who collect with bags simply because more can be loaded onto the trolley. They need the trolley to do their work efficiently. According to Langenhoven and Dyssel (2007), the street waste pickers also cleverly modify the trolleys to transport their goods more easily and prevent confiscation by security companies, who collect trolleys taken from supermarkets.

The trolley is also the reason why many waste pickers have to sleep on the street as they cannot take the trolley and the collected goods home (Schenck & Blaauw, 2011b). Some BBCs provide or lend trolleys to the waste pickers and they store the trolleys at the BBC (Quazi & Dobson 2013; Viljoen *et al.*, 2012). In the case study by Quazi and Dobson (2013), a tailor-made trolley was facilitated by the NGO Asiye Etafuleni and provided to the waste pickers, which makes it possible for them to load and push it more easily.

Suggestions were also made to assist with transport to collect their waste instead of their having to push it to the buy-back centres. An example is having pick-up points in areas where waste pickers are active. More regular pickups from the landfill sites can increase income. If waste is collected more regularly, the waste pickers may not have to sleep on the landfill site to protect the waste they collected (Roberts, 2012; McLean, 2000a, 2000b). Again, there was no indication in the literature as to who should take responsibility for any such policy intervention.

Enhance safety and security

Sobuce (2012), Benson and Vanqa-Mgijima (2010), Schenck and Blaauw (2011a, 2011b) Schenck *et al.* (2012) and Langenhoven and Dyssel (2007) in particular highlighted the safety and security issues faced by the waste pickers. Theft is experienced by the waste pickers if they do not have a secure place where they can store their recyclables. After selling their waste they are robbed of their cash on the street by gangs (Schoeman & Sentime, 2011). Racketeering often occurs on landfill sites if these sites are not well managed (Schenck *et al.*, 2012). One of the measures the waste pickers on the streets take to protect themselves is to sleep together on the streets (Schenck & Blaauw, 2011b). The facility proposed by Trask (2013) is an example of a way to address these needs.

Suggestions were made for the provision of storing and safekeeping facilities for their goods, more regular collections of the waste collected by the waste pickers (Roberts, 2012; Trask 2013) and having shelters in which to sleep (Trask, 2013; Viljoen *et al.*, 2012). It was again not clearly stipulated in the literature who or which institutions should take responsibility for these actions.

Another safety issue experienced by the landfill waste pickers in particular was safety on the landfills where they try and recover recyclables before the trucks cover the landfill. This poses a major threat, as waste pickers have been hurt or even killed in the process. Suggestions have been made for local authorities or landfill managers to allow the waste pickers the opportunity to recover the useful and recyclable waste before it is covered, either on the landfill site or at an MRF (Samson, 2009; Schenck *et al.*, 2012; Sobuce, 2012).

Develop literacy and skills levels

The low educational level of the waste pickers is seen as one of the reasons why they are doing waste picking. Waste picking requires no skill or qualification. Most of the waste pickers have only primary school qualifications (De Kock, 1986; Mamphitha, 2011; Schenck *et al.*, 2012). An improved literacy and skills level will not necessarily improve their income (Mamphitha, 2011; Schenck *et al.*, 2012), but it can make them more employable, less vulnerable to exploitation, and prepare them to manage their own micro-enterprise better (De Kock, 1986; Mamphitha, 2011; McLean, 2000a, 2000b; Schenck & Blaauw, 2011a, 2011b; Schenck *et al.*, 2012; Sobuce, 2012).

Sub-theme 3: Attitudinal challenges and enabling factors (Visibility)

One of the biggest challenges experienced by the waste pickers is the perceptions and attitudes of the government officials (municipal police and municipal officials), “business partners” (BBCs) and the public towards them (Chvatal, 2010; De Kock, 1986; Huegel, 2013; Samson, 2009, 2012; Schenck & Blaauw, 2011a; Schoeman & Sentime, 2011; Sentime, 2012; Sobuce, 2012). Sobuce (2012:68) states that the waste pickers are negatively viewed as they work in a negative environment: “*Now that we work with waste, they treat us as if we live here*”. Waste pickers, on the other hand, see themselves as doing “honourable” work, cleaning the environment in the process and earning an honest income (Benson & Vanqa-Mgijima, 2010:13; Schenck & Blaauw, 2011a). They view waste picking as a job and they go to work every morning like any other worker, even when it rains (Benson & Vanqa-Mgijima, 2010; Chvatal, 2010; Ralfe, 2007).

It appears that both the public and the local authorities regard the waste pickers as undesirable and posing problems to society. They prefer not to see the waste pickers and look down on them for doing such dirty work and even harass them. They are considered as the outcasts of society, seen as contravening bylaws and are marginalised as a result (De Kock, 1986; Langenhoven & Dyssel, 2007; Mamphitha, 2011; Samson, 2009; Schenck & Blaauw, 2011a, 2011b).

Attitude changes are required as suggested by Samson (2010), in particular with reference to the government, which needs to acknowledge the worth of the waste pickers. This will assist the recognition and validation process in policies, legislation and strategies (Farthing, 2009; Langenhoven & Dyssel, 2007; Samson, 2009, 2010a, 2010b; Schoeman & Sentime, 2011). Currently the waste pickers remain invisible and voiceless in the waste management system and no efforts at promoting recognition have succeeded as yet (Huegel, 2013; Samson, 2009:16).

A number of studies (De Kock, 1986; Huegel, 2013; Joubert, 2012; Schenck *et al.*, 2012; Schenck & Blaauw, 2011a, 2011b; Sobuce, 2012) have shown clearly that the waste pickers value their independence and that this should be enhanced and respected. Their independence is one of the reasons why they do waste picking. They are not controlled by anybody, they regulate their own work, and their work depends on their energy, stamina and capabilities. Sobuce (2012:44) cites one rationale: “*your employer does not push you, even if you are not feeling well, you work as much as your health permits ... he does not push you, he is not after you, you push yourself, your pay is determined by you*” and De Kock (1986:42) quotes another as saying “[there is] no one to cheat me”.

Step 5: Interpreting the findings

The systematic review unpacked the major theme of “recognition” of the waste pickers, which should be facilitated in order to enhance their functioning in the informal economy. For most waste pickers this work is a matter of survival (Mamphitha, 2011; Schenck *et al.*, 2012). Recognition at the level of policy (national, provincial and local level), operations and attitudes is required. These aspects are, however, interdependent and must be addressed as such by all role players in the waste management system.

The studies further highlighted the following gaps in the research which, if addressed, will assist the recognition process:

- As most of the studies are small scale and quantitative, a national study is needed to provide a broader picture of the waste pickers and their socio-economic circumstances;
- More qualitative studies will be able to register the voices of the waste pickers, how they perceive their circumstances, their wellbeing, their future and what recognition should entail;
- Identification and evaluation of current projects and programmes are needed to be able to determine best practice models which can guide the national, provincial, local governments and the NGOs;
- Studies might also be important to determine the amount of waste salvaged by waste pickers from the streets and landfill sites. This will hopefully enhance the appreciation of the waste pickers;
- Studies are needed to determine the possible role waste pickers can play in the broader waste management system.
- Other questions that require answers as highlighted in the review are: Who should take responsibility for the interaction with the waste pickers and their operational needs? Who should collaborate with them and how? Who should provide the services suggested in the literature?

CONCLUSIONS

Waste pickers are a permanent feature of the South African informal economy. They can be viewed as part of a problem or the solution. Deciding on the first option will be counterproductive and carries with it a significant lost opportunity. The second

option is the more prudent one. This requires that the role of informal waste pickers in the broader waste management system must be researched more comprehensively and the findings should inform policy debates. Given that what was once thought to be a temporary phenomenon is now accepted as permanent, it is necessary to alter the existing planning priorities to incorporate the waste pickers on a permanent basis (see also Groth and Corijn, 2005).

Policies need to be informed by facts, figures, including cost analysis, and the voices of the waste pickers to provide the appropriate knowledge to the policy makers to make informed decisions as to how to develop the policies and strategies that will provide sufficient recognition and dignity to waste pickers. As Samson (2010a) emphasised, there can be no recognition without listening (voicing), validation and the visibility of the waste pickers. Let them take co-responsibility in assisting with the waste management of the towns and cities, because waste picking is, and will be, an important means of survival for the poor. Social workers can play a significant role in facilitating the enabling processes between the waste pickers and the formal management system, buy-back centres, the public and the other stakeholders.

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