

**AUTHORS:**

Catherina Schenck¹

Lizette Grobler¹

Derick Blaauw²

Charlotte M. Nell³

AFFILIATIONS:

¹DSI/NRF/CSIR Chair in Waste and Society, University of the Western Cape, Cape Town, South Africa

²School of Economic Sciences, North-West University, Potchefstroom, South Africa

³Aquila Environmental, Cape Town, South Africa

CORRESPONDENCE TO:

Catherina Schenck

EMAIL:

cschenck@uwc.ac.za

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Reasons for littering: Social constructions from lower income communities in South Africa

Littering has been defined as the careless and improper disposal of small amounts of waste that results in unwanted and unnatural elements remaining in the environment. People tend to blame external factors for their own littering. A person seldom refers to themselves as being the litterer but will rather place the blame on insufficient infrastructure, such as lack of bins, or on other persons. When referring to other people, they identify problematic behaviour and personal traits such as ignorance, naivety, need for convenience, laziness and inattentiveness as causes of littering. This study addressed the gap in the literature on the socially constructed perceptions people hold about reasons for littering in the South African context, as subjectively perceived reasons for littering may correspond with actual causes and could point towards options for tackling the littering problem. Five lower socio-economic areas in South Africa – particularly those that experience major infrastructural challenges – were included in the study. Qualitative semi-structured interviews were held with 322 residents from the respective areas. The data were thematically analysed and the results from the areas compared with each other. The cross-case analysis confirmed that littering is contingent on contextual effects, and unique reasons for littering in the South African context were mentioned. The research reported on in this study highlights that we have only thematically ‘identified’ or named the socially constructed perceptions about the reasons for littering by the participants. The importance of creating platforms and processes for dialogues to deepen our understanding of people’s socially constructed perceptions and subsequent behaviour, is of critical importance.

Significance:

- This study presents subjective or self-reported perceptions of people living in lower socio-economic areas on the reasons for littering and dumping.
- These perceptions about reasons for littering then provide directions for possible interventions to manage and curb littering in the South African context.

Introduction

In a recent study in South Africa, Ryan et al.¹ assessed the prevalence of litter during the 5-week COVID-19 hard lockdown period in 2020. Ryan et al.¹ highlighted the reduction of street litter in two of the cities as a result of less movement due to COVID-19 restrictions. This finding was to be expected, but the authors reiterate that it necessitates a focus on humans as the predominant cause of litter and consequently the need for strategies centred on human behaviour to curb littering.¹ As Ryan et al.¹ point out, the predominant cause of street litter is inappropriate waste disposal practices. Therefore, studies on litter need to not only address differences in the prevalence of litter between what Rutz et al.² term the ‘anthropause’ and periods of normal human activity, but also the root causes of this disposal practice. Rutz et al.²(p.1156), building on the common term ‘Great Pause’ used with reference to the lockdown period during the COVID-19 pandemic, suggested the term ‘anthropause’ ‘to refer specifically to a considerable global slowing of modern human activities, notably travel’.

Littering has been defined as the careless and improper disposal of waste that results in unwanted and unnatural elements remaining in the environment.³⁻⁵ Chaudhary et al.⁶ accept the definition that litter is trash, discarded or scattered about in disorder over a socially inappropriate area. New forms of litter increasingly appear and have been linked to changing consumer patterns in terms of take-away food, the increase in unsolicited advertising materials⁵ and the recent uptake of plastic personal protective equipment during the pandemic^{7,8}.

Van Doesum et al.⁹ relate littering to either active or passive behaviour. Active littering behaviour is defined as the active placement of items in a space when departing, while passive behaviour refers to leaving items behind in a space either intentionally or unintentionally. Personal traits such as laziness, as well as lack of vigilance by municipal authorities, lack of infrastructure such as litter bins in streets, and imitation are given as the main reasons for littering.^{3,10-12} Rodríguez-Rodríguez¹², investigating litter in protected areas of the Autonomous Region of Madrid¹³⁻¹⁵, also mention deficient environmental consciousness and urban origin as further causal factors. The presence of litter can also increase littering.^{3,16-18} This causal relationship is related to the influential ‘broken windows’ theory that provides disorder cues in neighbourhoods that trigger littering and antisocial behaviour.¹⁹ However, Volker¹⁹ indicated that the effect of these cues is not as pronounced as originally postulated and that neighbourhood and individual characteristics play a moderating role.

Al-Khatib et al.⁵ emphasise a lack of social pressure in terms of litter prevention, the absence of ‘realistic penalties or consistent enforcement, social rebellion, and lack of knowledge of the environmental effects of littering’. Poorly designed packaging of commercial products, the amount of litter at a particular location, the presence and wording of littering signs, and the number, placement and appearance of waste disposal bins also contribute to littering.⁵

In a systematic review by Chaudhary et al.⁶ only 70 scientific peer-reviewed articles on research that sought to understand littering behaviour globally, could be sourced. Only a few factors that influence and are useful in reducing littering behaviour were identified. Chaudhary et al.⁶ regard the results as ‘equivocal’. They highlight that most (53) of the 70 articles included in their systematic review were from developed countries while only 13 research

studies were published from eight developing countries.⁶ African studies are almost non-existent. Chaudhary et al.⁶ also emphasised the fact that no qualitative studies had been conducted in developing countries to determine reasons for littering. The research in developing countries is regarded as still in its exploratory phase.

Research has further shown that behaviour is based on perceptions of reality.^{16,20} Therefore, the analysis of public perceptions of litter is important given the link between littering and individual behaviours²¹, and understanding perceptions is one of the primary steps in developing comprehensive and sustainable anti-littering interventions^{16,22}. As a starting point in the context of this study, it was therefore important to determine what residents perceive as, and how they construct the reasons for littering, before considering how perceptions and subsequent behaviour change can be facilitated.

In a study conducted in Switzerland by Hansmann and Steimer¹⁰, it was found that people tend to blame external factors for their own littering. A person seldom refers to themselves as being the culprit but will rather place the blame on insufficient infrastructure such as lack of bins, or on other persons. Conversely, when referring to other people, they identify problematic behaviour and personal traits such as ignorance, naivety, need for convenience, laziness and inattentiveness as causes of littering.¹⁰ Both Hansmann and Steimer¹⁰ and Chaudhary et al.⁶ point out that very few studies have been conducted to determine people's perceptions about reasons for littering. They regard this research gap as unfortunate 'because knowing more about the subjectively perceived reasons for littering seems crucial for understanding the cognitive and motivational processes to this problematic behaviour'¹⁰. They also propose that subjectively perceived and socially constructed reasons for littering may correspond with actual causes and could point to options for tackling the littering problem.

Building on Hansmann and Steimer¹⁰ and Chaudhary et al.⁶, the aim of this study was to explore the socially constructed reasons for littering in the South African context. Globally, very few studies have been conducted on understanding littering behaviour. The aim of these multiple case studies was to contribute to the literature on the correlation between littering and human activity. Our research focused specifically on lower socio-economic townships in South Africa that experience, amongst other issues, major infrastructural and service delivery challenges. This study delineates community-specific perceptions concerning the reasons for littering as a starting point for generating strategies to reduce its impact.

Theoretical framework

In their systematic review of 70 articles written on litter and littering behaviour, Chaudhary et al.⁶ concluded that there is a lack of the use of theories when studying littering, in particular in the studies from developing countries. In this study, we used the theory of social constructionism. It is a theory of knowledge built on the premise that reality is constructed within a socio-economic, political and cultural context.²³⁻²⁵ Social constructionism holds that no single objective perception of the world or reality is possible, but that social constructionism is how people make sense of the world. In 1967 the sociologists Berger and Luckman²⁶ introduced the concept of social constructionism. They argued that people, interacting with each other, over time create concepts or mental representations of each other's and their own actions.²³ In referring to these mental representations, the mathematician Alfred Korzybski commented that 'the map is not the territory'. We only have maps of the territory; we will never know the territory.²⁴ In summary: knowledge and people's perceptions/constructions and belief systems of what reality is, become embedded in the institutional fabric of society. Reality is not seen as objective truth waiting to be uncovered but as multiple realities and meanings continuously created in changing social contexts.²³

The following premises are the foundation of social constructionism:

- How we understand the world is the product of historical, social, political and cultural sense making processes of interaction between people, which means that realities are constructed collectively – the map is not the territory but perceptions or constructions of the territory.

- The identity of the person or constructs of the self and emotions are formed in interaction with other people – they are not intrinsic to the person but produced in social discourses.^{23,24,27}
- Language, an aspect that is fundamental to the process of knowledge production, is not used to describe and represent the world or reality. Instead, realities are constructed through language. Language gains its meaning from its use in context.²⁸
- Furthermore, realities are created through language and meaning making.²⁴ Meaning is not a property of the objects and events themselves, but a social construction. Meaning is the product of the prevailing cultural frame of social, linguistic, discursive and symbolic practice.²⁸
- Social constructionism views research not as the production of knowledge that is fixed and universally valid, but holds that research can open up new perspectives, constructions and new possibilities.²³
- From a social constructionist perspective, change is seen as creating and co-creating new or different perceptions and meanings which will open up new possibilities through participatory processes and within non-hierarchical relationships.^{24,25}

Study settings

Four townships (characterised by lower socio-economic status) and one rural village were included in the study. All selected areas were characterised by high unemployment and grant dependency. The townships were selected based on differences in waste management service delivery. Descriptions of the study areas and reasons for their inclusion are provided below:

- Drakenstein Municipality, where Paarl East and Mbekweni are situated, is a well-functioning municipality with regular consistent weekly waste management practices. Drakenstein Municipality was recognised as being the cleanest and greenest municipality in the Western Cape Province in 2019.²⁹
- Calvinia, situated in the Northern Cape Province, has regular household waste removal but does not provide bins or bags to assist in household waste collection.
- Philippolis in the Free State Province used to have regular waste removal but, due to bad financial management, services are currently irregular and in some instances are managed by the community themselves. Waste removal depends on the availability of a functioning vehicle. No bins or bags are provided to the households to assist with waste removal.
- Matshelapata, under the City of Polokwane in Limpopo Province, does not have any form of waste removal service.

Paarl East and Mbekweni townships

Paarl East and Mbekweni are located in the Drakenstein Local Municipality, which is regarded as a secondary city and encompasses the towns of Gouda, Paarl, Saron and Wellington. Paarl and Wellington are the two major economic hubs in this municipal area.

The municipality has a population of 305 281, which includes 74 230 households and 41 informal settlements. The municipality governs a total of 33 wards. In terms of service delivery, 37 848 households (just over 50%) have access to refuse removal, 68 956 to sanitation, and 68 956 to piped water.³⁰

Mbekweni Township has been demarcated as Ward 12 of Drakenstein Municipality. Mbekweni was initially developed as a black African residential township.³¹ Subsequently, it provided a legal area of residence for black Africans when the Western Cape was classified as a coloured labour preference area in 1955 under the apartheid government.³¹ Census data from 2011 still reflect a population that predominantly mirrors apartheid demographics, with 97% of the residents reported as black African.³¹ A large part of the population are first-generation urban residents, migrants hailing from the Eastern Cape.³¹ The township has high levels of unemployment, with limited economic opportunities and

prevalent social problems.³¹ Barry and Whittall³¹ point out that conflict between state institutions and local residents of the area has a long history connected with resistance against apartheid. The conflict has continued and found expression in protests, for example in relation to housing.³¹

Paarl East

Paarl East is a predominantly coloured community and 82% of the residents live in formal Reconstruction and Development Programme houses with backyard dwellers. Only 41% are formally employed and 38.4% are grant dependent. Paarl East is also known for crime and gangster activities.³²

Philippolis

Philippolis is the oldest town in the Free State Province in South Africa.³³ It forms part of the Kopanong Local Municipality, along with eight other small towns.³³ Kopanong Municipality ranks as the most sparsely populated municipal area in the province and has been a municipal area of dire governmental concern in terms of financial viability for the past two decades.³³

With regard to municipal services, data from 2011 listed the percentage of flush toilets connected to sewerage at 82.1% for Kopanong Municipality and 80.5% for Philippolis; 46.7% for piped water inside dwellings in Kopanong Municipality and 74.5% for Philippolis; and weekly refuse removal at 76.5% for Kopanong Municipality and 99% for Philippolis. The current Integrated Development Plan for the greater Kopanong Municipality states that all households have '100% access to refuse removal'³⁴. However, this statement is qualified with reference to waste removal challenges:

[S]ometimes the municipality could not adhere to weekly refuse removal schedules in some of its towns or wards due to ageing yellow fleet and its constant mechanical breakdowns – notwithstanding the fact that most of the yellow fleet is not appropriate for waste removal.³⁴

Recent media reports confirm that Philippolis, along with other Karoo towns, are challenged in terms of service delivery.³⁵ Consequently, local communities have attempted to deal with water provision, waste management and recycling issues themselves.³⁵ Residents from Philippolis have conducted waste dumpsite clean-ups and also cleaned the entrances of the town.³⁵ At the time of the study, due to Kopanong Municipality's non-payment of their water bill to Bloemwater (the major water provider), households only had access to water for a few hours per day.

Calvinia

Calvinia, which forms part of the Hantam Local Municipality, is about 400 km from the large urban centres of Cape Town, Springbok and Upington. The 2011 census recorded a population of 9680, and the town had 2509 households with an average household size of 4 members.³⁶ The percentage of formal dwellings was recorded at 97%. In terms of service delivery, 80.5% had flush toilets connected to sewerage, 65.2% had access to piped water inside dwellings, and 97.4% received weekly refuse removal.

The coloured township Calvinia-West formed part of the study.

Matshelapata

Matshelapata is a small village in Mentz located 70 km from Polokwane, the capital of Limpopo Province. The residents are black African and mostly Sepedi speaking. No waste management services are delivered to the village. Although the community has access to piped water, during our visit, water was delivered to the houses by a truck due to the drought in the area. In addition to the political ward councillor, the village is still under the traditional rule of an *Nduna* and a Chief.³⁷

Table 1 provides a summary of waste management services rendered in the selected areas.

Table 1: Summary of the townships studied

Name of Category B Local Municipality	Focus areas	Level of waste management service rendered (2019–2021)
Drakenstein	Mbekweni and Paarl East	Weekly door-to-door waste collection by the municipality. Daily mini drop-off waste collection by the municipality.
Hantam	Calvinia West, Calvinia	Weekly door-to-door waste collection by the municipality.
Kopanong	Poding-tse-Rolo and Bergmanshoogte, Philippolis	Weekly door-to-door waste collection by municipal workers and trucks, if and when available, alternatively by local residents. Collection services funded by the Philippolis Concerned Citizens group as a result of bankrupt municipality.
Polokwane	Matshelapata	No waste collection services rendered by the municipality.

Methodology

Building on the theory of social constructionism, qualitative cross-sectional studies were completed in the aforementioned four townships and rural village (Matshelapata). The studies were part of the DSI/CSIR-funded Clean City/Town project which seeks to gain an understanding of how people make meaning of the reasons for littering in these towns. Multiple mixed methods were used to collect data. The research was approved by the Humanities and Social Sciences Research and Ethics Committee of the University of the Western Cape (HS19/5/5). In this article, we report on only one of the datasets collected.

In Drakenstein Municipality, data were collected in the townships Mbekweni and Paarl East. In Mbekweni, 40 semi-structured interviews were completed by students from the University of the Western Cape. In Paarl East, 91 interviews were completed by three members of the community. Community members were recruited as a result of concerns raised by the municipality about the safety of students due to high crime levels and gangster presence. The councillor of the area assisted in selecting three unemployed women from the area who had easy access to the community and who would be able to navigate the research process. The fieldwork also provided an income to the three fieldworkers, which created credibility and acceptance of the research process in the community.

In Calvinia, three unemployed community members were recruited with the assistance of the official responsible for the Extended Public Works Programme's (EPWP) database of unemployed individuals. Three men were recruited, and together they completed 73 interviews.

In Philippolis, eight young unemployed community members (seven women and one man) were recruited to conduct 70 interviews. The fieldworkers collectively covered Bergmanshoogte, consisting mostly of coloured Afrikaans-speaking residents, and Poding-Tse-Rolo, which is a predominantly black, Sesotho-speaking community. The fieldworkers were recruited through one of the teacher assistants in the local school who was in close contact with the unemployed youth.

In Matshelapata, students from the University of Limpopo, which is close to the community of interest, completed 48 interviews. These students can speak the local language, Sepedi.

The students and community members were well trained to approach participants, obtain consent and conduct the interviews. In an interactive workshop session, they were allowed to practise the semi-structured questionnaires with each other. The fieldworkers worked in pairs – one conducted the interview and the other captured the answers given by the participants on the questionnaires, using the words of the participant. We are aware that this way of capturing some answers might be selective and biased. Working in pairs attempted to curb these biases. The fact that the same themes appeared for all selected areas supports the validity of the results.

In total, 322 semi-structured interviews were conducted. Braun and Clarke's³⁸ six stage thematic analysis was used to analyse the data. The six stages consist of: familiarising of data; generating of the initial codes; searching for the themes; reviewing the themes; defining and naming the themes; and producing the report.

We captured the answers from the questionnaires in a single document. Each township and the village's answers were captured and analysed separately, and then compared with each other. Capturing the data from each area already allowed for familiarisation with the data. Then we colour coded the data and identified and named the themes. Some of the themes could immediately be linked to the literature and a few unique South African themes emerged, as will be described in the following section.

Findings

Themes on reasons for littering

Firstly, Table 2 presents a summary of the themes identified in each of the selected areas. Theme 1 (Value systems and personality traits), Theme 3 (Non-caring government), Theme 4 (Lack of infrastructure and resources), and Theme 6 (Lack of education/awareness) appeared in all five research areas. Theme 2 (No respect and care for self, others and the environment) was regarded as a reason for littering in all areas except for Paarl East. Theme 5 (Littering and dumping leads to job creation) emerged in four areas (Matshelapata, Philippolis, Calvinia and Mbekweni). Each theme will be briefly discussed.

Theme 1: Value systems and personality traits

Oguntayo et al.³⁹ define the personality of a person as individual differences and an enduring characteristic pattern of thinking, feeling and reasoning that leads to behaviour. The American psychologist Carl Rogers views behaviour as intentional and determined or constructed by a person's emotions, thoughts, experiences, perceptions and locus of control.⁴⁰ As indicated, social constructionism views the identity of the person as a construct of the self, formed in interaction with other people – it is not intrinsic to the person but produced in social interaction and discourses.

In all townships, littering was constructed as emanating from personality traits and as being part of the value and normative system of the person. The question asked was 'Why do people litter?', not 'Why do you litter?' It was therefore easy for the people to ascribe the personality traits to other people. Freije et al.⁴¹ cautioned against asking participants whether they litter, as the majority of participants in Freije et al.'s study in Bahrain denied that they littered.

In the current study, participants identified constructs such as laziness ('because they are too lazy to use rubbish bins'; 'People are lazy and don't want to be clean'), ignorance ('... ignorance and not wanting to take

responsibility for their waste'), naivety, ('nevermindedness') and habit ('... like at home that's how they act in other places too') as reasons for littering. Upbringing and 'It's a lifestyle' were mentioned. 'You eat chips and cold drink not near a bin so you just throw in the streets. If you are not clean and tidy in your own house you will not be clean outside. I like cleanliness outside and inside.' In Paarl East and Mbekweni, blame for littering and dumping was attributed to 'those from the rural areas' (of the Eastern Cape and/or foreigners). 'People are lazy and don't want to be clean.' Given the previously described historical context of Mbekweni, the other townships are more homogeneous and the local people are less exposed to the influx of migrants and in-migrants.

Both Govender and Reddy⁴² and Salvia et al.⁴³ confirm the constructions of similar value systems and personality traits of those who litter.⁴⁴⁻⁴⁶ Chaudhary et al.⁶ identified five stages of litter research in developed countries. The period from 2001 to 2010 is referred to as the time when the focus of the research was on factors associated with littering such as values, religion, culture and gender, with no conclusive results. However, Ojedokun and Balogun⁴ emphasise traits such as altruism and locus of control as anti-litter personality traits. Locus of control refers to a psychological concept indicating how strongly people believe they can take control over the situations and experiences that affect their lives. From a behavioural theoretical perspective, Singh and Kaur⁴⁷ identified self-efficacy as an anti-litter trait. Self-efficacy refers to the belief in one's ability to succeed. The stronger the internal locus of control and experience of self-efficacy, the less likely the person will be to litter as they take responsibility for their own behaviour.

What is significant from the results of Ojedokun and Balogun⁴ and Singh and Kaur⁴⁷ is that the socially constructed belief of a person in themselves and their abilities will facilitate the person to take responsibility for their own behaviour and actions, including towards the environment.⁴⁶

Theme 2: Those who litter have no respect and care for self, others and the environment

This theme confirms the results by Ojedokun and Balogun⁴ and Singh and Kaur⁴⁷ (mentioned in the previous discussion) that people with a disregard for self, others and the environment will take less responsibility for their own environment – the responsibility will be assigned to other persons or institutions. In this study, participants highlighted the following traits as reasons for littering: 'They have no self-respect for themselves and other people'; 'They do not care about the environment'; 'They do not care about the community.'

The non-caring behaviour is also ascribed to '... being raised badly. Not raised properly at home. Neverminded attitude. It looks right to us but actually it's very wrong.' A participant confirmed that littering is due to '... no discipline. No respect. Because we don't think.' One participant

Table 2: Thematic analysis of reasons for littering, by area

Themes	Matshelapata	Mbekweni	Paarl East	Philippolis (Bergmanshoogte and Poding-Tse-Rolo)	Calvinia
Theme 1: Value systems and personality traits	X	X	X	X	X
Theme 2: No respect and care for self, others and the environment	X	X		X	X
Theme 3: Experiences of a non-caring government	X	X	X	X	X
Theme 4 Lack of infrastructure and resources	X	X	X	X	X
Theme 5: Littering and dumping leads to job creation	X	X		X	X
Theme 6: Lack of education and awareness	X	X	X	X	X

then also explained the notion of internal locus of control and self-efficacy in her own behaviour:

I have a rubbish bin at home so I keep everything in my pocket until I reach home. We have to keep our town clean. People have no discipline at their homes. Need to care.

In addition, the lack of caring for self, others (the community) and the environment is also constructed as a result of experiences of a non-caring community or context: 'People litter simply because they see other people don't care; they just throw their litter in the streets.' This view links with the broken window theory: 'People litter sometimes because the area is already dirty and they just add on to the dirty place'; 'People don't respect [town's name]'; '... because they find the place already littered so they think that there is no need to bother looking for bins.'

The comments reflecting non-caring relate to the lack of social cohesiveness in the communities. Manca⁴⁸ defined social cohesion as connectedness and solidarity among groups in society. Socially cohesive communities provide a sense of belonging and caring to community members. The non-caring attitudes can also relate to socially disorganised communities due to structural poverty, vulnerability and the historical, political and economic landscape of South Africa.^{48-50.}

In Philippolis and Calvinia, the absence of community collaboration and cohesion was constructed as a reason for littering: 'They litter because they don't encourage each other not to. They don't understand how important it is to keep the streets clean.' The importance of socially cohesive families and communities was confirmed by Chergn et al.⁵¹ who found that communities that are not cohesive do not work together and encourage each other to take responsibility for their environment. Participants emphasised the urgency for cohesion in communities in order to create cleaner, dignified environments as a collective.

Theme 3: Experiences of a non-caring government

The non-caring constructed theme continues in the participants' reported experiences of a government (local and national) that lacks care for their residents: 'Honestly, I couldn't care less [about the litter]. The South African government doesn't take their citizens seriously'; 'Some people already decided that there is nothing good left for them because the municipality is corrupt and so they will keep on littering.' This attitude was explained as deliberate: 'They [residents] are spiteful ('aspris')'; 'At times they are spiteful – even if they stand next to the bin they will still throw it [the litter] on the ground.' It was explained that people litter '...because they can'; 'People litter because some of them just want to.'

'They [the municipality] don't have facilities. They don't care about the community'; 'All the bins are broken'; 'People litter because municipality don't collect waste'. This theme also emerged in the study with train and taxi commuters.^{44,46} The failure of service delivery in South Africa is further evident, as Botes⁵² explains, in the increase in service delivery protests. According to Botes⁵², in 2018, two million people per year were taking to the streets to protest against the lack of service delivery, authoritarian governance and political decisions and non-responsive governance. In the 2020/2021 Auditor-General South Africa (AGSA) report on municipalities⁵³, only 16% of the municipalities received clean audits. Interestingly, by the time of the publication of the report from AGSA⁵³, the Kopanong Municipality (under which Philippolis, Bergmanshoogte and Poding Tse Rolo reside) had not even submitted their financial statements. Botes⁵² is of the opinion that it is in fact the poor people who suffer the most as a result and that the protests are an attempt for freedom and human dignity. Some of the participants also argue that littering and dumping are part of the broader systemic issues in the communities such as overcrowding, crime, vandalism, unemployment and general unhappiness with service delivery: '... because so many people are living together on one stand and there are not enough bins'; 'Our people love to vandalise. They do get the needed facilities but then it is stolen'; 'Some people steal the dustbins'; 'People are unemployed'; 'The dustbins are stolen and burnt'; 'Governmental problems, unemployment problems'; '... because there are no jobs.'

Green⁵⁴ emphasises that competence, fairness and care are the three main elements for a government to be regarded as legitimate and be taken seriously. Political interference and corruption should be eliminated. The provision of appropriate infrastructure is a sign of engaged and caring service delivery. We support Kalina's⁴⁹ viewpoint that 'if we want to safeguard the environment and create cleaner communities, the poverty, unemployment and inequalities must take centre stage'. Kalina⁴⁹ further argues that waste management studies have yet to effectively acknowledge the systemic and structural inequality, crime, poverty and unemployment in South Africa. Only then will research on societal issues in waste be meaningful.⁴⁹

The lack of service delivery and experiences of a non-caring government were therefore evident in the lack of provision of sufficient waste infrastructure and resources, as described next.

Theme 4: Absence of infrastructure, resources and waste removal

Sotamenou et al.⁵⁵ and Salvia et al.⁴³ found that people's waste behaviour in Cameroon and Kisumu, Kenya, respectively, was determined by the disposal resources and alternatives available to them. Similarly, the lack of sufficient and appropriate receptacles and resources or waste infrastructure was noted as a reason for littering in all five townships involved in the current study: 'There are no dustbins here at the shops'; 'I think it's the lack of proper facilities because street vendors even opt to use card-boxes as bins'; 'Lack of dustbins around. When there are no dustbins near, a person can litter because they want to get rid of the waste they're carrying especially when they have just finished eating.'

Also, a shortage of cleaning staff was construed as part of the problem: 'Because there aren't enough cleaners or facilities for waste disposal available.' This issue was confirmed by Philippolis participants who commented: 'They [the municipality] can't afford to buy facilities'; 'Not enough resources for waste. They don't have facilities at all.' At Philippolis, residents referred to stray animals causing litter in the streets. Due to the late or non-collection by the municipality and lack of appropriate facilities, dogs and pigs get to the bags first: 'The municipality don't collect waste. People don't have enough facilities and they use old maize meal bags and you find out dogs and pigs tear the bags.'

Theme 5: Littering and dumping leads to job creation

Littering was mentioned as a motivation for job creation in Calvinia, Mbekweni and Matshelapata: 'People litter because they think it is a way for them to create jobs for others.' The following comment by a resident from Matshelapata was interesting: 'We are black and a black child will always want to give another person a job.'

A participant in Matshelapata expressed the following view: 'I think that democratic rights has been well explained to people because people use this (to) act literally and they end up thinking that when they litter, many jobs would be opened because the municipality would see (the) need to hire more waste pickers.'

A slightly different perspective was raised in Philippolis (where the municipality is not functioning): 'The municipality should hire us to do the work as they [Kopanong Municipality] are not doing their work'; and 'The municipality should give our children the work as they don't do their work.'

Although the waste management system in Philippolis was not functioning, the municipality employs a number of EPWP workers to clean the streets. Similarly, in Calvinia, there were very active EPWP and community development worker programmes to keep the streets of Calvinia clean. Participants from these two communities believed that residents abdicate responsibility for a clean environment because someone will eventually clean up: 'The problem lies with the people that likes to live like this and expect the municipality to clean'; 'Spiteful, because they know there are people who clean after them and that they [the cleaners] get paid.'

Studies by Freije et al.⁴¹ in Bahrain and by Salvia et al.⁴³ in Kisumu (Kenya) are the only studies that also refer to littering as an act of job and income creation. In the studies by Schenck et al.⁴⁴⁻⁴⁶ among street vendors, train

commuters, taxi drivers and taxi commuters in South Africa, the same theme of job creation came to light.

Theme 6: Lack of education and awareness

In their systematic review, Chaudhary et al.⁶ identified one of the phases of littering research during the period 1991–2000 in the USA as the education and awareness phase to curb littering behaviour. They concluded that raising awareness and education are important, but that these aspects should be seen in the context of the real-life world of each community. It is one of the aspects that needs attention to address wicked waste problems.^{43,45}

In all townships except Calvinia, littering was ascribed to the fact that people are not 'waste wise'⁴⁸ or not aware of the consequences of littering, or that they have not been educated and raised not to litter: 'Some people are negligent and others lack education and awareness about a clean environment'. Concerns were raised about the youth and children not being disciplined and taught by their parents: '[It is] children that are not taught to be respectful to throw litter in bins'; 'The parents do not teach their children not to litter'; 'You as parent have to teach the child. Neatness and cleanliness come from the parent.'

Suggestions for improvement

The participants also added suggestions for improvements to the current waste management practices. The thematic suggestions were clearly based on the reasons constructed in the previous section, as discussed below.

Suggestion 1: Ensure the provision of services and sufficient and appropriate facilities and waste infrastructure

To assist residents to manage waste and prevent littering, appropriate and accessible infrastructure is needed.^{6,43} Participants requested regular refuse removal, and bags and bins for those areas that do not receive them. Although Mbekweni and Paarl East households receive bins and bags, backyard dwellers have to do without these amenities, therefore they requested that they be given the required receptacles. Comments included: 'Collect waste on time'; 'I think if backyard dwellers and informal settlements got their own reusable bins and more green projects in wards'; 'Collect the waste weekly'; 'Provide bins and bags'; 'Provide skips'; 'Waste managers must always make sure that bins get emptied on time.'

Diligent service delivery and the provision of services and infrastructure are seen as evidence that the authorities do in fact care and that participants are not left alone with managing their own waste⁴⁶ over and above all the other aspects of poverty such as lack of housing, proper roads, water, electricity and sanitation. This echoes a statement by a participant in the study by Salvia et al.⁴³ that 'waste management is not for the poor – but for the rich'.

Suggestion 2: Establish collaboration with and within the communities

Suggestions were made for collaboration between the municipality and the community towards a cleaner environment. Residents do not only see area cleaning as a municipal responsibility but an opportunity for community engagement: 'We as the residents of this place can help to keep this town clean'; 'Organise workshops to keep clean. Get people to talk about it. Schools teach children'; 'Appoint people to keep their own areas clean.' Residents from Calvinia commented: 'Community and municipality for service'; 'Train a team to monitor the cleanliness of the town', and 'Community groups must be made responsible for cleaning the town.'

The request for collaboration is an expression for the need for participation, for participants to have a voice which they seldom had in the past and currently have – a movement towards a stronger internal locus of control. Collaboration with each other and government can create a greater sense of social cohesion, respect and dignity and a sense of care from the authorities.

Suggestion 3: Create income in the community

One of the major suggestions made by the participants was to utilise the potential for income generation. This suggestion is clearly a socially constructed need in the context of high levels of local unemployment, insufficient waste management and the need for a cleaner environment. Ideas included: 'Create jobs in waste removal. If the community clean the areas themselves, they will not litter where they have cleaned'; 'Municipality can hire local people to clean the town each and every day'; 'They can put people in positions to work in certain areas. To work and people will benefit from it'; 'Projects for recycling of waste.'

Discussion and recommendations

In this study, we explored the perceptions of the residents in four townships and a village in South Africa on littering. The socially constructed themes that emerged and that coincide with the globally identified themes are the absence of bins and waste infrastructure; the lack of education and awareness, personal traits and value systems of individuals; and the broken windows theory (litter creates litter).^{6,15}

Uniquely socially constructed themes, linked to the South African context, are that littering has the intention to create income opportunities due to the high levels of poverty and unemployment in South Africa; that littering is an indication of the lack of respect and care for each other, the community and the environment; that it highlights the perception that littering is due to the lack of socially cohesive and collaborating communities; and that it is seen as a response to and manifestation of the lack of service delivery and care from the corrupt and non-caring government.

Important are the suggestions constructed by the participants – which confirm reasons put forward in the international literature – that are related to requests for proper and appropriate infrastructure and collaboration within the community and with the municipality towards finding solutions, income opportunities, and education and awareness.⁴³ Both the reasons and the subsequent constructive suggestions reflect the deep structural, systemic inequalities and marginalisation that exist in the South African context, which is evident in the (lack of) past and current waste management in the townships. The lack of sufficient and appropriate waste management adds to the daily struggle in these lower-income communities.⁵²

Nkwocha and Okeoma⁵⁶ are of the view that littering is 'a brutal expression of loss of hope among urban dwellers' whose behaviour may be a reaction against authorities. Also, Brennan and Portman⁵⁷, in their study on fisher's perceptions of marine litter, came to the conclusion that 'until the relationships between local people and various governing institutions are transformed, there is little hope for citizen cooperation to reduce (marine) litter'. Salvia et al.⁴³ and Schenck et al.⁴⁵ further highlight the complex wicked nature of waste management which needs systemic, complex and process orientated approaches. Kalina⁴⁹, Botes⁵² and Du Toit⁵⁸ direct our engagement towards systemic socio-economic and socio-political conditions that created, and continue to create, our waste problems. At the local level, the proposals of Medina⁵⁹ and Gutberlet⁶⁰ link well with the participants' suggestions. Waste management in developing countries needs decentralised, low-cost, labour-intensive, collaborative solutions that provide income and reduce poverty and inequality.^{59,60}

Both Salvia et al.⁴³ and Schultz et al.⁶¹ suggest that littering needs to be studied within the unique setting, region and culture of the place where it occurs⁶¹ and that such studies should include an understanding of the socially constructed drivers of littering⁴³ to devise measures tailored to particular circumstances. Brennan and Portman⁵⁷ developed a tick-box guide (Figure 1) to assist policymakers and practitioners when co-creating new possibilities with the relevant affected communities. Brennan and Portman⁵⁷ suggested these tick-box guidelines to ensure that all elements for sustainable interventions are co-designed.

The perceived reasons given by the township residents who were interviewed and their ensuing suggestions provide us with directions to initiate further research and start facilitating dialogues regarding how

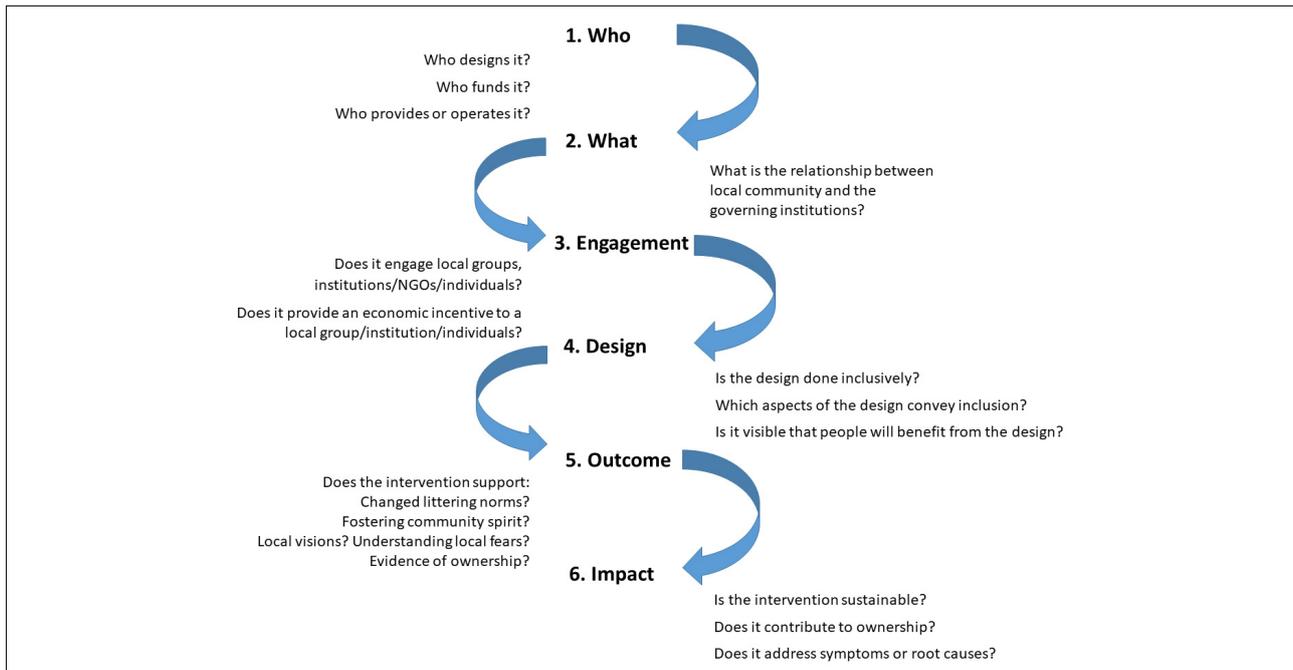


Figure 1: Brennan and Portman's six-stage checklist designed to assess the potential effectiveness of litter interventions in a local context.

waste and waste management can be socially co-constructed and co-managed to the benefit of residents, stakeholders and the environment.

The question that now remains is: how should we facilitate and co-create collaborative change to complex wicked problems? Change from a social constructionist perspective is seen as creating and co-creating unique new/different constructions and meanings through dialogue which will open up new possibilities through ongoing local participatory processes in non-hierarchical relationships^{24,25} with all stakeholders involved, where the focus is on the potential of multiple local realities that can be co-constructed^{62,63}. Dialogues provide a space for conversation that invites participants to bring in a multiplicity of voices and the co-creation of new realities, meanings and possibilities for action. These dialogues or linguistic events should focus on competencies and strengths, and instead of summaries and conclusions, they should focus on inclusive and rich descriptions and multiple possibilities.

Recommendations for further research from a social constructionist perspective will then include creating a series of participatory dialogical opportunities in the communities to:

- Facilitate the sharing of knowledge, stories, perceptions and meanings attached to waste and waste management in the community and their perceived reasons for littering. Critical reflection on or deconstruction of, for example, each socially constructed reason for littering – such as littering creates jobs or is a lack of education and awareness, or an act against a non-caring government – should be facilitated.
- Co-construct new meanings about waste, littering and waste management as well as opportunities towards collaboration, possible income generation and effective and appropriate service delivery, responsibility and accountability.
- Facilitate processes of what Biggs et al.⁶⁴ refer to as adaptive co-management where small co-created incremental changes are made, reflected on, and adapted if and where necessary. It develops and takes shape as experience is gained.⁶⁵

Qualitative appreciative research methods such as participatory, creative, and visual activities can facilitate the dialogical co-construction, deconstruction and meaning-making processes through methods such as group discussions, co-design workshops, photo voice, videos, transect walks and mapping exercises.⁶⁵

The research reported on in this study highlights that we have only thematically 'identified' or named the socially constructed perceptions about the reasons for littering by the participants. The importance of creating platforms and processes for dialogues to deepen our understanding of people's socially constructed perceptions and subsequent behaviour, is of critical importance.

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Competing interests

We have no competing interests to declare.

Authors' contributions

C.S.: Principal investigator; conceptualisation; main author; data collection. L.G.: Co-author; critical reader; data collection. D.B.: Critical reader; data collection. C.M.N.: Critical reader; data collection.

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