

**WASTE GOVERNANCE IN VANCOUVER: BINNERS' PARTICIPATION AND THE IMPACTS OF  
GRASSROOTS INNOVATIONS (AN EXPLORATIVE STUDY)**

by

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Bachelor of Environmental Management and Toxicology, Federal University of Agriculture, 2015

A Thesis Submitted in Partial Fulfilment of the Requirement for the Degree of

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**Supervisory Committee**

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## ABSTRACT

Due to the general unawareness of the existence and significance of the informal recycling sector in the global north, leading to a great deal of exclusion and stigmatization, this thesis seeks to investigate waste governance in Vancouver and the level of participation of the informal recycling sector in municipal waste management. It also documents the critical role of grassroots innovations in promoting participatory governance and the challenges faced in the process. Results show that the informal recycling sector (binners) play a significant role in municipal waste management, and that there exists some level of participation in decision-making on waste management issues. Results also indicate that exclusion of binners in certain decision-making processes such as the City's recycling bylaw led to challenges such as reduced access to recyclable materials, which threatens binners' day-to-day activity and survival. Furthermore, the current level of participation of binners can be linked to the influence of a grassroots innovation called the Binners' Project, which has at its core, empowerment and capacity building of its members. Challenges faced by this organization as well as binners, in general, are also documented. This thesis concludes with recommendations to promote transformative participatory waste governance and highlights strategies to ensure the sustenance of binners' livelihoods.

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## **1.0 INTRODUCTION**

### **1.1 The Challenge**

Globally, there has been an increase in waste generation as a result of the ever-increasing population, changing consumption patterns, societal transformations, increase in production and product packaging (Aarnio, 2006; Agamuthu et al., 2009; Alamgir et al., 2005; Dernbach & Henning, 1987). Consequentially, given the NIMBY (Not in My Back Yard) effect, waste disposal (through landfill deposition) has become problematic due to the increasing opposition by residents' to siting new landfill sites within their vicinity (Meyer, 1999). Despite the enormous amount of money spent annually on waste management (handling, transportation, disposal and treatment), a more substantial portion still ends up in the landfills, leading to several devastating environmental consequences. Due to this problematic nature of waste management or put differently, the lack of waste management, cities in developed nations and developing nations alike have experienced a recourse from mere engineering solutions to an issue to be handled by the government through legislative provision and enactment of laws to prohibit and limit generation as well as disposal of waste. Such laws are, however, very rare even in the global north. Moreover, most governments have been left with no option but to recourse to devolution of the waste management to lower levels such as from federal government to provincial government, from provincial government to municipal authorities, agencies and other private sectors.

In an attempt to govern waste or discarded materials, ownership to waste has, hence, been claimed discursively by governments by either single-handedly managing waste, collaborating with the private companies/sector through contracts or through the enactment of bylaws and

regulations that prohibit and criminalizes informal recycling. The informal sector also, a minority stakeholder in the waste management system, contributes significantly to reducing landfill jam and carbon footprints through waste recovery by claiming ownership to discarded materials, while at the same time earning a means of livelihood (Gutberlet, 2008). The value ascribed to waste by both groups varies significantly – as matter out-of-place, disposable object, manageable object or environmental hazard by the state and private companies, on the other hand, as a resource with exchange values by the informal recycling sector (Lane, 2011; Moore, 2012). These discursive claims of ownership have resulted in the persistent exclusion of the informal sector from the waste management system. However, there is a growing re-valuing of waste by private companies – as a resource – to be recycled. Scholars have examined these various forms of waste valuation by different regimes and their associated waste management approaches and practices, bringing in to light the problem of ownership (Gille, 2007; Horton, 1997; Lane, 2011; Moore, 2009; Pongracz et al., 2004).

To whom is the right to recover waste therefore vested upon? But garbage issues are political (Cornea et al., 2017); its presence and absence, where and how it is handled and disposed in time and space is affected and determined by political actions and policies (Moore, 2009). Broadly speaking, this thesis, therefore, examines several issues around rights and ownership to waste (recyclable materials) and their effects on the informal recycling sector, and also the roles of grassroots organizations in addressing these issues.

## 1.2 Politics of Waste

Cornea et al.'s (2007) argument on the political nature of waste is quite apparent in the governance of waste globally. Waste management has been a central but complex policy dilemma for most governments (Bull et al., 2010). Moreover, since the 1970s, this dominance has been slowly declining as central/federal governments have turned to neo-liberal tools such as privatization and de-regulation to assist with service delivery (Jessop, 1999). Here, I refer to the politics of waste as the mode of governing/governance of waste. The current mode of governing waste now involves actors at every level of society: central government, local authorities, regional partnerships, the private companies, individual citizens who support the waste collection and recycling system 'at their doorstep', as well as the development and operation of essential waste management facilities, at the most basic level through the payment of local taxes. Mode of governing captures:

a set of governing technologies deployed through particular institutional relations through which agents seek to act on the world/other people in order to attain distinctive objectives in line with particular governmental rationality (Bulkeley et al, 2007, p. 2739).

In other words, mode of governance refers to a faction of established governing technologies through which governmental or political rationalities are successfully attained. Here, governmental rationality relates to series of goals and objectives that are accomplished through governing technologies/techniques – a set of “principles, expertise, or framings that shape and guide the conduct of individuals” (Dean, 2009; cited in Loughheed et al., 2018, p. 172). Bulkeley et al. (2007) further explained governing technologies in two categories:

technology of agency and technology of performance. The former, as they argue, seek to “involve particular subjects and their participation in processes of governing, and include different forms of participation and partnership, as well as infrastructure and materials through which action is created and sustained” (p. 2737). The latter, on the other hand, is achieved through targets setting, monitoring compliance, performing audits, etc. (ibid). Encouragement of public participation, as well as private partnership in the governance of waste, is often entrained to align with, and enable the attainment of goals and objectives of the state (governmental rationalities) through the use of technology of performance and agency. And this is similar to Swyngedouw’s (2005) argument that “participation is inherently mediated by power” (2005, p. 1998).

Power-mediated participation is quintessential of virtually all governing systems and achieved through the utilization of technologies of performance. Technologies of performance, as Bulkeley et al (2007) noted, enables ‘governing at a distance’ through the enactment of by-laws as well as other “discourses of monitoring, appraisal, performance targets, and feedback mechanisms that tend to dominate and structure the actions of local players” (Raco and Imrie, 2000; cited in Bulkeley et al., 2007). Thus, mode of governing – the combination of governmental rationalities with governmental technologies – can be associated with Foucault’s notion of governmentality. i.e. ‘the conduct of conduct’ (Foucault, 1982; Lemke, 2002; Swyngedouw, 2005). According to Foucault, governmentality is, hence,

internal and external to the state, since it is the tactics of government which makes possible the continual definition and redefinition of what is within the competence of the state and what is not, the public versus the private, and so on; thus the state

can only be understood in its survival and its limits on the basis of the general tactics of governmentality (Foucault, 1991, p. 103; cited in Swyngedouw, 2005, p. 1997).

This compartmentalization and delegation of responsibilities by the state embodies a mode of governing which often is articulated through the utilization of technologies of performance and of technologies of agency “as a means of disciplining forms of operation within an overall programme of responsabilization, individualization, calculation and pluralist fragmentation” (Swyngedouw, 2005, p. 2003). Although scholars such as Rhodes (1997; 2007) argues for the ‘shrinking the role of the state’ and ‘governance without government’ where its ability to act effectively is reduced (cited in Hysing, 2009, p. 649), Lemke (2002) firmly argue differently, that

what we observe today is not a diminishment or reduction of state sovereignty and planning capacities but a displacement from formal to informal techniques of government and the appearance of new actors on the scene of government (e.g. non-governmental organizations) that indicate fundamental transformations in statehood and a new relation between state and civil society actors (p. 58).

It can, thus, be argued that there is no such thing as absolute autonomy of the private sector or any non state-owned agency or organization since conducts and practices of subjects are shaped directly or otherwise by governmental rationalities. Also, worthy of note is that some of the existing literatures on governance and even new governance which advocates for decentralized forms of governance often refer to private (formal) sectors as companies that provide waste management services and other non-state owned agencies or service providers

(Howell, 2014; Kjaer, 2009; Peters, 2002; 2008; Peterson & Hughes, 2017; Zurbrügg et al., 2004). And quite evident in these literatures as well as the mainstream waste management system, is the exclusion of a particular segment of the waste management system – the informal recycling sector. Considering the reliance of the informal recycling sector on waste for survival, and the value they bring into waste recovery, there is a dire need for a shift to a more participatory governance in which these individuals are recognized as key constituents of the private sector. Such participation allows active involvement in service delivery and decision-making.

### **1.3 Participatory Governance**

Participatory governance is a mode of governing that enables active engagement of all stakeholders in decision-making processes (Michel, 2012). Stakeholders, in this sense, refer representatives of every party or group whose lives could be impacted by the decision outcomes. Regarding waste management/governance, stakeholders do not refer to the formal private sector alone but also the informal sector. As shown by studies, participatory governance enhances the efficiency and effectiveness of service delivery, boosts democratic legitimacy, bridges existing gaps between the state and its citizens, and increases support of the policy created and participants' problem-solving skills (Michels 2012; Jarvinen, 2014). Studies also show that participatory governance plays a significant role in improving the quality of lives of the informal recycling sector (Gutberlet, 2012; 2015; Hordijk, 2005; Nzeadibe and Anyadike, 2012).

As I show in the following chapter, citizens' participation in governance occur in several levels and forms, all of which are mediated by different and often conflicting interests depending on the various motivations for participation and the respective governmental rationalities. These forms of participation, according to White (1996), include nominal participation, instrumental participation, representative participation, and transformative participation. Whereas the first three forms of participation are tokenistic in nature, transformative participation is the highest form of participatory participation, as it allows full and active involvement in both service delivery and decision-making (see details in Chapter 3). The significance of the transformative participatory governance in municipal waste management is far-reaching. But this mode of governance, is yet to be fully embraced the in global north due to the seemingly organized waste management system, which of course has its flaws. These flaws are unnoticeably covered by the informal recycling sector, which is the primary cause of exclusion and hence, the purpose of this study.

#### **1.4 The Grassroots Approach**

Due to the wariness and skepticism in fully embracing a transformative participatory waste management system, the informal sector experience series of challenges, most of which are related to deprivations of rights such as rights to access to recyclable materials, right to food, clothings and other materials that these individuals need to survive. Also, the lack of required skills as well as the socio-economic conditions of drug addiction, and other mental health issues, all of which can impede their ability to meet expectations, can be attributed to the

cause of such wariness and risk aversion of the government in embracing this form of participation.

Social science scholars have proven that grassroots organizations or grassroots innovation plays a crucial role in improving the quality of lives of disadvantaged groups (Morgan, 2014; Petit, 2012). As defined by Seyfang and Smith (2007, p. 585), grassroots innovations are “networks of activists and organizations generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved.” In the fourth chapter of this thesis, I, therefore, drew on Mitchell and Heynen’s (2009; p. 611) concept of ‘geographies of survival’ as a lens to examine the challenges encountered by the members of the informal recycling sector, and the strategies adopted by grassroots organizations in addressing these challenges.

## **1.5 Study Area and Case Study**

### **1.5.1 The Bidders’ Project**

Informal recyclers in Vancouver, also regarded as ‘bidders’, have always served as environmental stewards and provided environmental services by recovering and revaluing disposed items to earn a living. Bidders are, therefore, individuals who collect refundable and other discarded items to earn extra income, and support their livelihoods. Due to the stigma associated with informal recycling, often referred to as scavenging or pan-handling (Alam et al., 2016; Lee and Farrell, 2003), bidders have been exceedingly stigmatized and even harmed as their hard work have gone unnoticed or overlooked. This situation, which is inextricably

linked to other socio-economic challenges such as homelessness, has immensely kept the binning community at the margins of society (Vancouver Foundation, 2015).

In response to these challenges, the Bidders' Project was established in 2014 by Ken Lyotier – a former bidder and the founder of United We Can – with support from Tides Canada (a Canada-wide charity) and other partners. The Project was established to create economic opportunities, destigmatize binning, and promote social cohesion among members of the binning community. Strategically located in the heart of the Downtown East Side (DTES) of Vancouver, the Bidders' Project is a grassroots organization led by a core group of bidders and supported by a steering committee, staff, special advisors and volunteers, all working collaboratively in making decisions on the direction of the project and developing initiatives to enhance the bidders' survival. The Bidders' Project is arguably the major grassroots organizations that supports bidders in Western Canada. However, similar organizations are springing up in other major Canadian cities.

The DTES is generally regarded as 'Canada's poorest postal code' due to the concentration of a large number of people suffering from homelessness, addiction, and mental health challenges. The DTES, one of the oldest neighbourhoods, is home to about 18,000 people and situated within the City of Vancouver, a coastal seaport city on the mainland of British Columbia, Western Canada. Vancouver is home to about 631,500 people (according to the 2016 census) and is the largest city in British Columbia (City of Vancouver, 2019). Contrastingly, despite the condition of the DTES, Vancouver has continuously found itself at the top of the list of one of the most liveable cities in the world, as stated by The Economist Intelligence Unit (EIU, 2018).

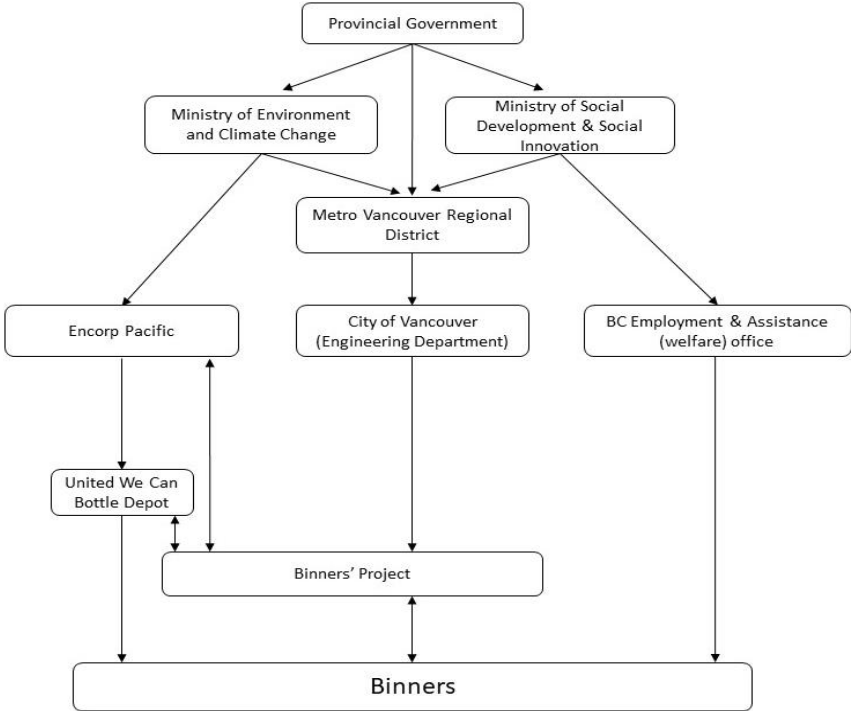
Since its inception, the Binners' Project has been notable for empowering its members through the development of novel community-led initiatives such as the annual Coffee Cup Revolution event (which I explain in detail subsequently), Universal Cart Program, Binners' Hook, Waste Sorting Program, etc. Engaging with over 200 binners within the DTES through weekly meetings, the Binners' Project creates a sense of community among binners, conducts training sessions, obtains feedback on initiatives it is delivering and developing, presents income opportunities, and gives compensations to binners (Binners' Project Annual Report, 2018). The Binners' Project has also adopted public relations management and awareness-raising as a means to draw the attention of the general public to binners' efforts and the environmental significance of binning by equipping its members with badges, and uniforms (T-shirt and hats), thus, making them more visible. Although weekly meetings are open to all binners, however, they are encouraged to become members to maximally and equitably benefit from these initiatives. The Binners' Project's membership policy is quite simple – requiring attendance at three consecutive meetings – and is open to all binners regardless of their socio-economic conditions. There are currently at least 80 active members, all identifying as low-income earners and facing barrier to mainstream employment (Binners' Project Annual Report, 2018).

### **1.5.2 Waste Governance Structure in Vancouver**

Binners in the City of Vancouver engage with diverse stakeholders that affect their day-to-day livelihood either directly or indirectly. The picture below (figure 1) shows the several stakeholders, which include those with which binners relate in terms of municipal waste

management as well as the BC Employment & Assistance office, which many binners rely on to sustain their livelihoods.

Figure 1: Main Players in Municipal Waste Governance and Binners’ Survival



Encorp Pacific is a non-for-profit stewardship organization that represents the producers and brand owners of non-alcohol, wine, spirit, and some cider, coolers and beer manufacturers since 1994 (Bottlebill, 2017). Encorp Pacific answers directly to the Ministry of Environment and Climate Change, and is responsible for paying deposit refunds for recyclable materials produced by the producer it represents. United We Can (UWC) is a bottle depot that was established as a social enterprise for binners by Ken Lyotier in 2000, and mostly patronised by binners (Tremblay et al., 2010). UWC is also in partnership with Encorp. British Columbia Employment and Assistance Office is an organization under the Ministry of Social Development and Social Assistance that provide government social assistance. It is referred to

by binners as the Welfare Office. The engineering department of the City of Vancouver which is under the Metro Vancouver Regional District is responsible for the overall waste management in the City.

## **1.6 Importance of Study and Research Objectives**

The informal recycling sector has been studied quite extensively in the global south (Demaria and Schindler, 2016; Nzeadibe and Anyadike, 2012; Gutberlet 2008, 2016; Uddin and Gutberlet, 2018). Although few studies have been conducted in the global north, most focusing on the general well-being, livelihoods strategies, occupational health issues, poverty and stigmatization (Wittmer, 2014; Wittmer and Parizeau, 2016; Parizeau, 2017; Gutberlet et al., 2009; Tremblay 2007). There exists a dearth of academic literatures that have examined binners participation or specific roles they play in municipal waste governance; and the influence of grassroots organizations such as the Binners' Project in improving binners' participation. In response to this, this research aims to document the contributions to municipal waste management in Vancouver, and to identify the influence of grassroots innovations on the informal recycling sector. We therefore seek to answer the following research questions:

- What is the level of participation of binners in municipal waste governance in Vancouver?
- What role(s) do binners play in municipal waste management?
- What are the various daily challenges binners face in Vancouver?
- What roles do grassroots innovations play in enhancing binners' survival strategies?

Results presented in this study will add to the existing body of literature on informal recycling by advancing the conceptual and empirical perspectives on participatory governance and empowerment. It will also serve as a point of reference for grassroots organizations to empower their members and to make more positive impacts. Additionally, this study will spark dialogue on the need and possibilities for more inclusive waste governance taking into consideration the critical roles played by the informal sector as presented in subsequent chapters.

## **1.7 Thesis Structure**

This thesis consists of three main parts. First is the general introduction, followed by a methodology section, and two papers – one of which focuses on participatory governance, and the other, the roles of grassroots organizations in promoting participatory governance and improving survival strategies of binners. The third part then contains the final conclusion which brings together the salient findings from the study and their significance, as well as limitations and an avenue for further research. In the first paper, we examined the roles that binners play in municipal waste management and issues around participation and inclusive waste governance. The second paper then contains investigations on the various challenges faced by the informal recycling sector and the influence of grassroots innovations in enhancing the survival strategies of binners. Both papers will be sent for submission to an academic journal in the fields of geography, waste management, and development studies.

## 2.0 METHODOLOGY

This research takes a case study approach to help gain “in-depth, multi-faceted understanding of a complex issue in its real-life context” (Crowe et al., 2011, p. 1). Using a community-based research (CBR) method, I drew on a constructivist and critical theory perspective. Constructivism recognizes the existence of multiple realities and the socially constructed nature of knowledge and meaning, which are based on human experiences (Israel et al., 1998). Critical theory is a philosophical ideology as well as research methodology that seeks to critique and change the society as a whole in contrast to mainstream theory that focus on understanding or explaining it (Crossman, 2019; Markoski, 2013). However, it is noteworthy that this study does not take critical theory as a research methodology in itself, but rather as a lens I to both critique and understand the topic in question. More specifically, critical theory perspective is concerned with empowerment of individuals, particularly disadvantaged groups, to overcome the constraints and limitations placed on them by the society (Markoski, 2013).

Community-based research is generally defined as a participatory, collaborative research method that involves community members or community representatives and co-researchers in a joint and mutually reciprocal research process. (Minkler, 2004; Israel et al., 1998). For Minkler (2004), the community-based research method is a strength-based approach that is committed to education, capacity building, and action of participants in the research process. The significance of CBR is far-reaching as it boosts research credibility and helps to identify and understand complex problems faced by a given community through the knowledge and experiences of members of the community (Minkler & Wallerstein, 2003; Isreal et al., 2001).

The CBR method was guided by knowledge sharing and interpersonal knowing, which helped capture the lived experiences as well as perceptions of the participants through dialogue and maintaining a reciprocal relationship with my research partners in the research process. Also, with huge emphasis on partnership and trust-based relationship building, the CBR approach recognizes the importance of an active and equal involvement of community members throughout the research process (Hulkup et al., 2004). One of the challenges of this approach is the fact that it can be quite time-consuming (Hulkup et al., 2004; Wiber et al., 2004).

Against this background, two preliminary visits were made with my supervisor (Dr. Gutberlet) and committee member (Dr. Tremblay) to the Binnners' Project prior to the data collection process. During the first visit, I was introduced to the Binnners' Project staff. Initial contact was then made with the binnners during the second visit to one of the Binnners' Project's weekly meetings. During this meeting, I got introduced to the binnners, informing them about the research and the need for their partnership. These visits, coupled with the established relationship between the Binnners' Project and my supervisor and committee member, were instrumental in expediting the research process.

Subsequently, as the data collection process commenced, I re-introduced myself to the binnners, who acted as co-researchers, gave a brief description of the research, its nature, and my role as researcher. I also observed ethical considerations such as privacy, harm, confidentiality, and consent. The latter was achieved by attaching consent forms to both questionnaires and interview questions which included a brief statement of the purpose of the study, as well as its benefits and objectives. Confidentiality was ensured by assigning each binner with a pseudonym to protect their real identity (Jones, 1985). These pseudonyms were

then used accordingly during the data analysis and the thesis write up. As shown subsequently, binners' involvement in the research facilitated the data collection with other members of the binning community.

Data was collected from multiple sources – qualitative and quantitative methods (mixed method) – to ensure validity, rigour, reliability and truthfulness, which was supplemented with critical reflection of my own involvement in the research process (Cresswell, 2009; Baxter and Jack, 2008; Rodaway, 2006). The primary sources of empirical data were in-depth interviews, photovoice and questionnaire survey. In-depth interviews allow the attainment of rich and personalized information (Manson, 2003). In-depth interviews were conducted with key informants to identify the binners' contributions to municipal waste governance, their level of participation, challenges encountered while working with binners and how grassroots innovations are helping to solve these problems; photovoice was conducted with binners to identify their experiences and challenges while binning; and survey was used to quantify these issues and obtain factual information on binners' demographic, socio-economic, health characteristics, etc.

Purposive sampling technique was used in this research as only individuals with valuable/relevant information were selected to participate in the study. Being a community-based research, a total of six research partners or co-researchers were purposively selected. Five of the co-researchers (3 men and 2 women), mostly of Caucasian and Indigenous origin, were recruited from the Binners' Project. An English-speaking Asian woman who is an employee of the United We Can bottle depot was also recruited. The co-researchers were selected by the management of both the Binners' Project and the United We Can bottle depot

based on the premise that they could easily identify individuals with adequate knowledge that would be beneficial to the research. The criteria for selecting the co-researchers include reliability and at least two years of binning experience. This approach fostered objectivity and reduced the possibilities of acquiring irrelevant and unnecessary data. Additionally, I adopted reflexive writing by ensuring that the write-up was relational and not uni-directional. I also took into consideration the power of language in re-presenting research outcomes since “language lies at the heart of all knowledge” (Dear, 1988, p. 266).

Furthermore, critical reflection was maintained by examining and consciously acknowledging my assumptions and preconceptions that I might have brought into the research, which could, therefore, shape the outcome of the research process. Additionally, I kept a reflective journal where my experiences, opinions, thoughts, feelings, decisions made in the data collection process and the reasons for those choices were recorded to avoid what Denzin (1994) referred to as “the interpretive crisis.” By so doing, I was emancipated from my preconceptions and prejudice about the topic in question, and sought to understand the experiences of the participants as they were perceived within the context of the case study. Although the qualitative method was dominant, integrating quantitative survey data provided a holistic understanding of the phenomenon (Patton, 1990; Yin, 2003). Ethics Approval Protocol Number for this research is 17-193.

## **2.1 Data Collection**

### **2.1.1 Surveys**

Questionnaire surveys (i.e. close-ended questionnaires) are a common way of quantifying information provided by participants. A total of 60 surveys were applied to binners within the City of Vancouver, administered by the co-researchers. The surveys included a wide range of questions to help give insight into the binners' demographics, socio-economic indicators, major source of recyclable materials, etc. (see survey questions listed in the appendix).

A two-hour survey training was initially conducted with the co-researchers from the Binners' Project. The training included discussions about basic research ethics such as consent, confidentiality, privacy and harm. The survey questions, which were initially developed without the participants' input, were then revised with the co-researchers to ensure a more participatory data collection process, to reduce power-play, and to ensure binners easily understood the wording of the questions. Some questions were either removed or reworded as suggested by the group and depending on the research questions. Co-researchers were compensated by paying each \$15 per hour. After reviewing the survey questions, 50 surveys were printed and shared equally among the co-researchers, to be applied to other binners within the City of Vancouver. While we had not planned to pay an honorarium for the binners who filled out the surveys, the Binners' Project requested some compensation for their participation. Such compensation varied from buying a cup of coffee or a snack at Starbucks to cash not exceeding five dollars. These expenses were then also covered by the research budget.

Furthermore, during the survey training, concerns were raised about the lack of communication with the Asian binners (mostly women) due to language barriers. Considering that Asian individuals constitute a significant proportion of the binning population in Vancouver (according to Tremblay (2007), about 20 percent of the total binning population), an English-speaking Asian woman was recruited to sample 10 Asian binners (20 percent of the initial 50 binners sampled). The rationale for this decision was to have a sample representative of the binning population. The same two-hour training that was conducted was then held with the woman, who was then also compensated accordingly. According to this co-researcher, most of the surveys were administered at the United We Can bottle depot. Questions were not translated, but were read out to the Asian binners while answers were written by the research partner. A five-dollar gift card was also issued to each Asian binner who participated in answering the survey questions.

### 2.1.2 Interviews

Interviews were organized around ordered, but flexible questions and the researchers' role was largely interventionist, unlike the non-structured interviews (Hay, 2000) (see interview questions listed in the appendix). The flexible questions gave room for further probing and clarification. In case of deviations, it also helped redirect the conversation to the research topic (ibid). A total of five interviews were conducted with five key informants. These include two City Government Officials in the Engineering Department, the Manager of the United We Can bottle depot, the Manager of Encorp Pacific, and the Manager of the binners grassroots initiative (Bidders' project). The interview questions were sent to the key informants before

the interview date to allow them enough time to reflect and organize their thoughts on the questions so that more robust and relevant responses could be obtained. The pyramid structure was adopted in the interviews to enable informants to get accustomed to the interview, interviewer, as well as the topics before asking questions requiring more profound thoughts (Hay, 2000). Interviews were recorded using an android phone recorder as well as a PC, followed by a period of written reflection. Each interview lasted between 30 to 60 minutes. Most of the interviews were conducted via the phone. However, for those conducted in-person, a neutral and distraction-free location was selected by the key informants to increase the comfort and the likelihood of attaining high-quality information. Leading questions were avoided to eliminate the potential for bias and to improve reliability and validity. Interviews were recorded and then transcribed to categorize data into a coding scheme as discussed below.

### 2.1.3 Photovoice

The photovoice component was conducted to document participants' lived experiences and challenges encountered while binning, through the use of pictures. Photovoice is a community-based participatory action method that aims to deepen participants' understanding of a specific issue or concern, to influence policy-making, and to catalyze social change through photography and group discussions/dialogue (Wang et al., 1998). This research method was driven by the desire to empower as well as to give participants a voice through photography. Photovoice method is widely known for its effectiveness in promoting a democratic knowledge development where participants are actively involved in the research

process particularly in terms of collecting data relevant to their lived experiences (Herganrather et al., 2009; Liebenberg, 2018).

A two-hour training was conducted with the co-researchers, highlighting the purpose of the study, showing how to take photos, what makes a good and bad photo, and also discussing the basic ethical considerations. Co-researchers were asked to take up to 10 pictures that relate to their everyday experiences and challenges while binning. Although the process did not necessarily require taking pictures of people, consent forms were provided to each participant should they need or desire to take pictures of people. Each co-researcher was compensated with an honorarium of \$15 per hour for the training as well as the time they spend to take their pictures. Five to ten photos were taken using an iPad provided by the researcher while some participants used their phones.

Upon completing the “photographic mission,” a focus group discussion was held to discuss the content of the photos. During the discussion, co-researchers were asked to select their four most preferred pictures (20 in total), after which they were asked questions such as (i) What is in the picture? (ii) Why was the picture taken? (iii) How does the picture relate to your everyday challenge while binning? The discussion was recorded using an android phone and a computer. Photos were then used to create a poster which was exhibited at the ‘Coffee Cup Revolution’ – an annual event where binners recover disposable coffee cups within the Downtown Eastside. During the event, a binner and I stood at one of the tents where the poster was displayed to have conversations with members of the public who came to the tent. While I introduced the research and the purpose of the photovoice and the research as a whole, the binner narrated their experiences while binning using the pictures on the poster.

Sticky notes and pens were provided to members of the public with whom we engaged to provide feedback and recommendations. Although recommendations were few and anonymous, they were reflected in the recommendation section of this thesis.

Besides gray literature, we reviewed official documents such as the City of Vancouver Recycling Bylaw and other related reports and documents.

## **2.2 Data Analysis**

Since qualitative methods were quite dominant in this study, so was the analysis. The qualitative analysis helped identify and understand patterns, and themes, all of which gave a more in-depth and close-up picture of the topic in question. The in-depth interviews and photovoice discussions were transcribed and analyzed manually using Powell and Renner's (2003) method of content analysis. This method provided a step-by-step approach to content analysis which includes familiarization of the data, focus on the question or topic, and the categorization of information into themes, categories and sub-categories as they appear in the texts. Interview and photovoice transcripts were printed on paper to allow colour coding of texts to identify emerging and similar themes. Each theme was then grouped and entered into a Microsoft Excel spreadsheet. Labelled by different colours, the themes were then grouped into relevant categories and sub-categories based on the research questions. This was an iterative process, as the analysis was repeated multiple times and was revisited continuously during the writing process.

Quantitative data (questionnaire surveys) was entered into the Survey Monkey website and automatically analyzed, providing basic charts and tables. This method was useful in identifying demographics, socio-economic characteristics and other relevant information about the participants in statistical terms. Both the data collection and analysis were carried out concurrently.

### **3 CALL FOR PARTICIPATORY GOVERNANCE IN VANCOUVER: WASTE MANAGEMENT WITH BINNERS**

#### **3.1 Abstract**

It is no news that waste generation is on the increase, making it more problematic for governments to manage alone. Thus, alternative forms of governance such as deregulation is being sought by authorities as a solution to this quandary. Some governments are beginning to identify and utilize the potentials of the informal sector through more participatory approaches in governance. In the global south, for example, the informal recycling sector is widely known for its contributions to municipal waste management through resource recovery, as shown by the current body of research. However, due to the seemingly well-organized waste management system, the existence and roles of this sector in municipal solid waste management in the global north are largely underdocumented. This paper, therefore, reveals not only that the informal recycling sector is also existent in the global north but also provides some sense of its contribution to municipal waste management. Based on five in-depth interviews with waste management stakeholders which include two City Government Officials in the Engineering Department, the Manager of Encorp Pacific, the Bottle Depot Manager and the Manager of the Bidders' Project; surveys, and a photovoice study conducted with bidders, I examined the roles of the informal recycling sector in municipal waste management in Vancouver, British Columbia as well as their level of participation in decision-making. Results demonstrate that the sector (i) assists and enhances waste diversion and recovery efforts, (ii) works in collaboration with the City government and other stakeholders, and (iii) provides waste collection and community services. However, results from the

interviews, surveys, photovoice and the document review, reveals challenges encountered by binners and the ensuing forms of resistance. This study shows that while binners are represented in decision-making processes such as the Single-Use Item Reduction Strategy, their participation in other waste management decisions such as the City's Recycling By-law remains challenging, which significantly impacts their day-to-day survival. I, therefore, highlight the need for a transformative participatory policy/decision-making process to promote more harmonious and inclusive municipal waste management, thus, fostering environmental and economic sustainability in our cities.

**Keywords:** informal recycling, waste governance, waste management, resistance, participatory governance, Vancouver, BC.

### 3.2 INTRODUCTION

The problematic nature of waste has led to the devolution of waste management from the federal to the provincial government and to municipal authorities, agencies and other private/formal actors (Murray, 1995). Yet, the process has not gotten easier. As a solution to this dilemma, the expertise of the informal recycling sector is increasingly being sought, particularly in the global south, for their contribution to service delivery (Wilson, et al., 2006). However, such invitation to participate is largely dependent on the objectives of the state, thus, making it state-centered, top-down, and mediated by hegemonic dominance through disciplinary governing technologies that help shape the conducts of invitees (Mckay and Garratt, 2012). I, therefore, draw on Foucault's notion of power and governmentality – the “conduct of conduct” (Foucault, 1991, p. 103) to examine issues around rule, control and power dynamics in relation to citizen's participation in municipal waste management and governance, all of which are in an attempt to safeguard the “welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health, etc.” (Foucault, 1991, p. 100).

Ordinarily, the *conduct of conduct* of individuals is paradoxical without either direct or indirect usage of power. Foucault's (1982, p. 789) definition of power as “a mode of action which does not act directly and immediately upon others. Instead, it acts upon their actions: an action upon an action, on existing actions or on those which may arise in the present or the future...it incites, it seduces, it makes easier or more difficult; in the extreme it constrains or forbids absolutely” shows the inextricability of the concept of power and ‘the conduct of conduct’. This definition of power is akin to and also evident in Bulkeley et al.'s understanding of

governmentality which they define in terms of 'mode of governing' – "a set of governing technologies deployed through particular institutional relations through which agents seek to act on the world/other people in order to attain distinctive objectives in line with particular governmental rationality" (Bulkeley et al., 2007, p. 2739). This understanding of the term power in relation to governmentality, according to Legg (2005) has resulted in the decentering of the state as a seat of power. Rather, "power is everywhere and exercised through countless sites, practices, agents, discourses and institutions" (Foucault, 1990; cited in Rutherford, 2007, p. 296). Foucault also argues that with power comes resistance, and that resistance cannot occur without power (ibid.).

Governmentality and relations of power are well exemplified in the governance of waste in North American cities. For example, in the process and attempt to exercise control over discarded materials, ownership to waste/discarded materials has been claimed discursively by the government either single-handedly or by collaborating with the private companies through contracts, and by enacting bylaws and regulations. The foregoing constitutes the formal approach to waste governance or waste management. This approach sometimes results in the denial of the informal recycling sector's access or ownership to waste. Through contracts with the municipal government, the private sector considers waste as objects to be managed (Moore, 2012) and thus, claims the right of ownership as long as the contracting is maintained. Also, given the notion of waste as governable object (ibid.), the municipal government claims ownership, part of which is then transferred to the private sector through privatization and making policies that excludes the informal recycling sector, even, criminalizing the act of collecting or recovering certain materials (Bakry, 2015; Wittmer and Parizeau, 2016). The

informal recycling sector, on the other hand, consider some form of waste as an economic resource with market value and thus claims ownership to it as their means of livelihood (through refund deposits). This claims of ownership of discarded materials, therefore, greatly limits not just their ability to recover waste but also their ability to earn a living and the ability to exercise substantive participation in waste-related decision-making process.

Generally, bidders are low-income earners who have often experienced many socio-economic vulnerabilities, language barriers, marginal immigration status, dependence on social assistance, addiction and homelessness (DeBeck et al., 2007; Tremblay, 2007; Tremblay et al., 2010). Besides trauma of being associated with filth, and thus exclusion, they live at the margin of society, suffer from prejudice, are stigmatized and harassed by officials and the general public and are excluded from governmental initiatives in the solid wastes management policies (Ackerman and Mizra, 2001; Gutberlet, 2003; Gutberlet et al., 2009). Despite these challenges, these studies have also shown that their contributions to municipal recycling are invaluable.

Although a minority amongst the stakeholders in the waste management system, the informal recycling sector plays a role in municipal recycling. Most studies portray the situation of waste pickers in the global south (Nzeadibe and Anyadike, 2012; Uddin and Gutberlet, 2018; Velis, 2017) and only few studies have focused on informal recycling in the global North (Tremblay, 2007, Gutberlet and Jayme, 2010; Wittmer and Parizeau, 2018). I, therefore, seek to add to the current body of literature on bidders' participation in waste governance, using Vancouver as a case study.

In this paper, I seek to investigate the roles that the informal recycling sector plays in municipal waste recycling and also how political actors in the urban environment have affected, or can

affect the ability of these marginalized individuals to earn a living through waste recovery. I therefore strive to answer the following questions: What is the level of participation of binners in municipal waste governance in Vancouver? What role(s) does the informal recycling sector play in municipal waste governance? In this paper, I explore the potential of a transformative participatory waste governance, in which binners are consulted not for mere service delivery, but also to participate in every waste-related decision-making process, recognizing them as significant actors in municipal waste management.

### **3.3 THEORETICAL FRAMEWORK**

#### **3.3.1 GOVERNANCE AND PARTICIPATORY GOVERNANCE IN WASTE MANAGEMENT**

Since waste management has been a central but complex policy dilemma for most governments (Bull et al., 2010), the past few decades have been characterized by a shift from the state-dominated waste management system to neo-liberal approaches such as decentralization and de-regulation to assist with service delivery (Jessop, 1999). Such approach seeks to incorporate the involvement of actors at various levels of society – both state and non-state actors, each operating independently or in partnership with state agencies (Bulkeley et al., 2007). Governance is about how society or groups within it, organize to take decisions, or according to Kooiman, it is “the patterns that emerge from the governing activities of social, political and administrative actors” (1993, p. 2). Waste governance is concerned with the instruments, modes, procedures, actors and with the relations and forms of cooperation in place to stirring broader issues of waste management and regulation. This

mode of governing (and waste governance in general) is mediated by power which influences the inclusion or exclusion of certain actors (e.g. the private sector, community based organizations), resulting in different levels of participation in service delivery and decision-making (Albergo, 2010; Miltin, 2004; Zerah, 2009).

Participatory governance, which Michels (2012, p. 286) also referred to as 'interactive governance' or 'interactive policy-making', enables active engagement with not just stakeholders but also citizens or 'ordinary people' (including disadvantaged groups) in policy-making processes (2012, p. 286). Several authors claim that participatory governance 'increases democratic legitimacy, narrows gaps between citizens and government, and boosts participants' problem-solving capacity and policy support' (Michels 2012; p. 286). Research further highlights that service delivery can be made more efficient and effective and poverty can be reduced with inclusive forms of waste governance (Jarvinen, 2014). While participation in service delivery might involve every concerned individual, participation in decision-making usually involve the invitation of representatives of citizens or certain groups to participate. Such representatives might include cooperative leaders, leaders of networks, neighbourhood associations, etc.

The question of who participates, when, why and how is crucial in participatory governance. The 'who' then requires some power play in selection for representation which can also result in exclusion and inclusion of certain individuals. The 'why', 'when' and 'how' questions are not only answered based on the preferences of the state as well as private actors, but reinforces governmental rationalities and neoliberal agenda through the creation of what Cornwall (2002) calls *invited spaces*. Thus, sharing in participation does not necessarily mean sharing in

power or decision-making (White, 1996). Although participation may be perceived as a means to reshaping power geometries in the urban political landscape through the engagement of the ordinary people (Zerah, 2009), at the same time, it could be “the means through which existing power relations are entrenched and reproduced” (White, 1996; p. 6). In short, “participation is mediated by power” (Swyngedouw, 2005; p. 1998). Navigating the questions of who, when, why, and how determines the forms of participation and the levels in which they occur.

### 3.3.2 LEVELS AND FORMS OF PARTICIPATION IN GOVERNANCE

Participation in governance is negotiated by varying and sometimes conflicting interests based on purpose/rationale for involvement or participation. Motivation for participation can be perceived from two opposite ends of the political spectrum. At one end are the authorities and private actors (more powerful) and on the other end are the ordinary people (less powerful) (White, 1996). White conceptualizes participation in four distinct forms – nominal, instrumental, representative, and transformative; describes their functions or purposes and further argues that actors at both ends of the spectrum have varying perceptions of as well as interests in each form of participation in governance.

According to White, nominal participation, for the *more powerful*, is motivated by a desire for legitimacy while for the *less powerful*, a desire for inclusion; and is often nothing more than a display with no visible change in the lives of the participants. Instrumental participation, for the *more powerful*, is motivated by a desire for efficiency in resource allocation, service delivery and project implementation, often through the utilization of the skills and knowledge

of the *less powerful*. The *less powerful*, on the other hand, are motivated to participate based on expected benefits. This form of participation often serves as the means to an end. Representative participation is adopted by the *more powerful* to give a voice to the *less powerful* in planning and decision-making processes to ensure either political, economic or environmental sustainability while the *less powerful* are motivated by the opportunity for leverage. Lastly, transformative participation is the form of participation where motivations of actors at the two opposite ends of the political spectrum aligns. Interests in participation is both motivated by a desire for empowerment. Although the empowerment agenda is often initiated ‘from below’, it can only become successful when it is supported ‘from above’. This form of participation serves as a means to empowerment and an end in itself for the more powerful and the less powerful respectively (White, 1996). Participatory governance can be considered viable when/if it characterises the four varying forms, motivations and functions of participation in governance. White (1996) gave a detailed explanation on the forms of participation and their associated levels of involvement in service delivery and decision-making (table 1).

Table 1: Forms of Participation and Levels of Involvement

Forms of Participation	Levels of Involvement	
	Service Delivery	Decision Making
Nominal	Passive	Non-existent
Instrumental	Active	Non-existent
Representative	Active	Passive
Transformative	Active	Active

Although these four forms of participation may favour involvement of the urban poor in service delivery, their level of involvement in the decision-making process could either be non-existent or passive or active (Figure 1). For both nominal and instrumental participation, although involvement in service delivery is passive and actively respectively, involvement in decision-making is usually non-existent. Rather, invitees are often informed of responsibilities/duties, rights, and perhaps options, with no room for negotiation or feedback (Arnstein, 1969). For the representative and transformative participation, the level of involvement in decision-making process is passive and active respectively. Representative participation, for Arnstein, involves consultation and placation, with certain degree of influence. Here, inputs of the poor/invitees are often sought, but may or may not be considered depending on the quality of technical capacities or skills possessed by invitees to push for their preferences; and the level of coordination and readiness to push for these preferences (ibid.).

Representative participation is, therefore, characterize the invited spaces of citizenship (Miraftab, 2005, p.4); and mediated though various hegemonic rationalities and modes of selectiveness. In transformative participation, on the other hand, invitees are actively involved in the decision-making process, and as collaborators and co-producers of knowledge or policies/decision. This form of participation is the most inclusive form of participation, as invitees are granted active involvement and power in decision-making (Arnstein, 1969).

### 3.3.3 RESISTANCE: A MEANS TO TRANSFORMATIVE PARTICIPATION?

As Foucault rightly noted, resistance is inherently present wherever power exists (Foucault, 1978). In the same vein, the collective creation of opportunities and terms of engagement are obtained through forms of resistance which leads to the creation of 'invented spaces of citizenship' (Miraftab and Wills, 2005, p. 4). Miraftab also referred to resistance as insurgency planning, arguing that it relates to the various forms of ways of challenging hegemonic neoliberal practices which reinforce domination through tokenistic participation (invited spaces).

Routledge defined resistance as "any action, imbued with intent, that attempts to challenge, change, or restrain particular circumstances relating to societal relations, processes and/or institutions" (1997, p. 69). Routledge's definition of resistance permits a wide variety of perspectives and approaches to it. For example, a group of scholars have shown that resistance can be effective through use of informal survival and oppositional or confrontational practices such as activism, vigilantism, occupation, etc. (Meth, 2010; Miraftab, 2005) also known as 'declared form of resistance' (Scott, 1990; p. 198). Another group, on the other hand, rejects practices involving state confrontation (Appadurai, 2001; Mitlin and Patel, 2009). They believe in the everyday assertion of rights from below through formal or legal means such as dialogue and negotiation. Resistance can, thus, result in the combination of both the formal or non-confrontational/legal approach and the confrontational/oppositional approach (Chance, 2008; Miraftab, 2009). However, the most appropriate approach to resistance (insurgency planning) varies depending on the peculiarity of the political and economic landscape of a place. According to Meth, "analysis of insurgency

must be context-driven, alive to the specificities of everyday lived realities, and shaped by empirical analysis” (2010, p. 249).

The above studies on resistance have focused largely on the global south. Thus, in this paper, I seek to add to the existing academic literature on waste-related resistance in North America by identifying forms of participation in waste governance and the ensuing forms of resistance performed by the binners.

### **3.4 RESEARCH METHODOLOGY**

This research takes a case study approach to help gain “in-depth, multi-faceted understanding of a complex issue in its real-life context” (Crowe et al., 2011, p. 1). I applied a qualitative research approach, also allowing for quantitative data to be collected. The primary sources of data were in-depth interviews, questionnaire survey and photovoice. In-depth interviews allow for rich and personalized information (Manson, 2002). Interviews were organized around ordered but flexible questions, and the researcher’s role was largely interventionist like non-structured interviews (Hay, 2000). In-depth interviews and photovoice were conducted with five stakeholders to identify the binners’ contribution to municipal waste management or governance, experiences and challenges encountered while working with binners and how grassroots innovation is helping to solve these problems.

Five in-depth interviews were conducted with two City Government Officials in the Engineering Department, Manager of the United We Can bottle depot, Manager of Encorp Pacific, and the Manager of the binners’ grassroots initiative (Binners’ project). The interview

questions were sent to the participants prior to the interview allowing them time to reflect and organize their thoughts on the questions so that more robust and relevant responses could be obtained. The pyramid structure was adopted in the interviews to enable informants to get accustomed to the interview, interviewer, as well as the topics before asking questions requiring deeper thoughts (Hay, 2000). Each interview lasted between 30 to 60 minutes. Interviews were recorded, transcribed and manually analyzed using content analysis to identify themes, sub-themes, and patterns that emerged.

Questionnaire surveys (i.e. close-ended questionnaires) are a common way of quantifying information provided by participants. A total of 60 surveys were applied to binners within the City of Vancouver by six co-researchers which were purposively selected by the management of the Bidders' Project and the United We Can (UWC) bottle depot. Five of the co-researchers were members of the Bidders' Project, while the last was an employee of the UWC bottle depot. The survey included a wide range of questions to help give insight into the binners' demographic and socio-economic situation.

A two-hour survey training was conducted with the co-researchers. The training included discussions about basic research ethics such as consent, confidentiality, privacy and harm. The survey questions, which were initially developed without the participants' input, were then revised with the research partners to ensure a more participatory data collection process, to maximally reduce power-play, and to ensure binners easily understood the wording of the questions. Following the training, surveys were printed out and shared equally among the co-researchers. After the surveys were administered and collected, responses were entered into the Survey Monkey website and automatically analyzed.

The photovoice component was conducted to documenting binners' lived experiences, and challenges encountered while binning through photography. This community-based participatory action research method was driven by the desire to empower as well as to give participants a voice through photography. Photovoice method is widely known for its effectiveness in promoting democratic knowledge development where participants are actively involved in the research process particularly in terms of collecting data relevant to their lived experiences (Herganrather et al., 2009; Liebenberg, 2018).

The photovoice was conducted by co-researchers from the Binners' Project. The UWC employee was not included since she is not a binner. A two-hour training was conducted with the co-researchers, highlighting the purpose of the study, showing how to take photos, what makes a good and bad photo, and also discussing the basic ethical considerations. The co-researchers were asked to take up to 10 pictures that relate to their everyday experiences and challenges while binning. Although the process did not necessarily require taking pictures of people, consent forms were provided to each co-researcher should they need or desire to take such pictures. Each co-researcher was compensated with an honorarium of \$15 per hour for the training as well as the time they spend to take their pictures. Five to ten photos were taken using an iPad provided by the researcher while some participants used their phones.

Upon completing the "photographic mission," a focus group discussion was held to discuss the content of the photos. During the discussion, co-researchers were asked to select their four most preferred pictures (20 in total), after which they were asked questions such as (i) what is in the picture? (ii) Why the picture was taken? (iii) How does the picture relate to their everyday challenge while binning? The discussion was recorded using an android phone and a

computer. The discussion was then transcribed and manually analyzed using content analysis to identify themes, sub-themes, and patterns that emerged.

Photos were then used to create a poster which was exhibited at the 'Coffee Cup Revolution' – an annual event where binners recover disposable coffee cups within the Downtown Eastside. During the event, a binner (co-researcher) and I stood at one of the tents where the poster was displayed to have conversations with members of the public who came to the tent. While I introduced the research and the purpose of the photovoice, the binner narrated their experiences while binning using the pictures on the poster. Sticky notes and pens were provided to members of the public with whom we engaged to provide feedback and recommendations. Although recommendations were few and anonymous, they were reflected in the recommendation section of this thesis.

Besides gray literature, we reviewed official documents such as the City of Vancouver Recycling Bylaw and other related documents.

### **3.5 RESULTS AND DISCUSSION**

This section provides an overview of the results obtained through the interviews, surveys, photovoice, and documents review to describe examine the different roles played by binners in municipal waste management, their level of participation in decision-making and the ensuing forms of resistance.

### 3.5.1 Bidders' participation and roles in municipal recycling

The waste management system in Vancouver is well-organized as it focuses on technological development, formal collection, transport and disposal of waste materials (Tremblay, 2007). Historically, this system has led to the exclusion and unrecognition of the binning community who earn a living through 'informal', selective garbage collection. However, over the years, the informal sector (bidders) has gradually established a strong presence in the downtown area of Vancouver, through several forms of politics of recognition and gaining increasing interest in the sight of the City government and other stakeholders in the waste management system. The following are the roles played by bidders in municipal recycling as revealed by the interviewees.

#### 3.5.1.1 Assistance in and enhancement of waste diversion and resource recovery efforts

Studies show that the informal recycling sector contribute significantly to waste diversion and recovery efforts (Wilson, et al., 2009; Scheinberg, 2012). In Vancouver, results show that bidders contribute to this in two major ways. This include the deposit refund system and the coffee cup revolution.

- The Deposit Refund System (DRS)

British Columbia is widely known for its high recovery rates as a result of the blue box program and the DRS which was established in 1998 and 1970 respectively (Bottlebill, 2017). Although the current deposit values on returnables are low, they have been yielding results. Through

the blue box program, in-house sorting is encouraged and required by residents; and materials are placed on the curbside to be collected by the municipality or contracted waste haulers (private companies). The materials placed on the curbside vary from cardboard and paper (OPP), consumer product packaging (CPP), alcoholic and non-alcoholic beverage containers, and organic waste, which is collected separately in the 'green bin'. The alcoholic and non-alcoholic beverage containers are the materials of interest to the binners due to the refund they get when those materials are returned to the bottle depots.

*Well, so binners are almost fully focused on the deposit container refund system.*

*So the deposit system is one tool used to divert materials from the landfill (S.F.*

*Encorp Pacific)*

The survey conducted with binners revealed that the DRS is the major source of income for binners who do not receive government social assistance (34 percent). However, binners who received government social assistance (66 percent) reported that the DRS (through binning) is the major source of earning additional income given that the government assistance is insufficient to cater for their monthly expenses. The DRS has been proven to be not only more effective than the blue box collection system (curbside recycling) due to the high rate of recovery of recyclables but that it also helps in improving the blue box system. In Vancouver, United We Can (UWC) collects over 60,000 containers per day, an equivalent of 380 bags of garbage each week (United We Can, 2018). This is done predominantly by binners.

*Over 90 percent of our customer base are binners ... We could get 50,000 to 70,000 containers a day in the busy months ... So we collect about 25 million containers a year (G. UWC)*

In an interview by CBC news in 2018, the CEO of Encorp Pacific specifically stated that binners play a large part in increasing the return rate in large urban centres such as Vancouver (Zeidler, 2018). According to one of the City Government Officials,

*...so traditional curbside collection, what we call blue box has diversion rates in the 40-60 percent range. Deposit systems traditionally have diversion/recovery rate in the 75-85 percent range. So by putting a value on a container, you provide greater incentive for people to return them to avoid putting them in landfills (S.F. Encorp Pacific).*

Another official noted:

*And there's a lot of deposits that are usually in the blue box containers like glass and bottles. You know a glass in a regular blue box is a contaminant, and so by having people walking through the lanes, picking out the containers and then returning the deposit containers through our EPR programs, it improves the quality of recyclables. So the blue box program ends up being better too because the glass containers are contaminants to the blue box program (P.H. City Government Official).*

The above statement is quite surprising considering the previous anti-scavenging by-laws and even the most recent recycling by-law which prohibits binners from recovering recyclable items from the blue box and violators would be subject to a fine of \$250 (Tremblay, 2010; City of Vancouver, 2005; City of Vancouver, 2018). Issues around the by-laws are further discussed in detail in subsequently. Furthermore, as highlighted by the Government Official, glass bottles

are perceived as a contaminant in the blue box, and therefore, beneficial for them to be collected by binners. However, they are of little value to binners considering the value of the refund deposit and the stress involved in conveying them to the bottle depots. In fact, the deposit refund on plastic bottles (which are lighter and easily compressible) is the same with that of the glass bottles – 20 cents for bottles over 1 litre (“Beverage Recycling,” 2019).

- The Coffee Cup Revolution

Over 2.6 million coffee cups are disposed in Vancouver each week (City of Vancouver, 2018). Since 2014, the Binners’ Project has organized ‘The Coffee Cup Revolution’, a yearly event in which binners recover these materials in enormous quantities. Coffee cups are currently not included in the deposit refund system, so they all go to the landfill. Thus, the rationale behind the initiative was to dedicate four hours on a specific day to collect as many cups as possible. Collected cups are weighed and the individuals are compensated for their work. In 2017, over 50,000 coffee cups were recovered, and in 2018, over 80,000. This is a unique way by which binners improve waste recovery and diversion efforts in Vancouver. Through this initiative, the binning community has continually increased awareness of its presence as well as its roles in the city’s waste management. Appadurai (2002) refers to this move by the Binners’ Project as ‘the politics of recognition from below’ (2002, p. 39). The CCU must have created huge awareness on the presence of the Binners’ Project and the role played by binners during this event, thereby, helping to destigmatize binning. The initiative has also attracted huge support from the City and other stakeholders.

*For the past maybe 3 years, we've provided grants that help support a number of their initiatives such as the coffee cup revolution, development of different programs. So it kinda helps them run that program (J.M. City Government Official).*

*So the reason we support it is that it highlights issues around single use items. I think for me the biggest opportunity is around continuing to advance seeking solutions on single-use items. (P.H. City Government Official).*

### 3.5.1.2 Collaboration with the City government and other stakeholders

Due to collective actions and the organization of binners, and the politics of recognition, binners have come a long way in establishing their presence in the Downtown Eastside, Vancouver. And due to the growing recognition of the roles played by binners in increasing diversion rates of materials, as acknowledged by the CEO of Encorp Pacific in an interview with CBC News (Zeidler, 2018), the City government have made a huge stride by purposefully 'inviting' binners to participate in specified aspects of waste management within the city. This invitation is what Miraftab (2005) refers to as invited spaces of citizenship. Stakeholders' collaboration with binners takes several forms which include the waste sorting at events, increasing access to returnables, and provision of financial support.

- Waste Sorting at Events

The City as well as event organizers have been partnering with binners in providing services such as waste sorting and public education at renowned events such as the Pacific National

Exhibition (PNE) and the convention centre which attracts a lot of people, thereby causing large amount of waste to be generated. Also, the Capilano Suspension Bridge is also a popular tourists' attraction site where a significant amount of waste is produced. Binners have been very instrumental in not just collecting and sorting these wastes but also educating the public on proper recycling practices, and get remunerated hourly through the Binners' Project. Binners are hired and contracted through the Binners' Project to carry out these services. A City Government Official noted:

*...through the Binners' Project, they play a part in supporting waste diversion at special events as well as a number of initiatives within the Binners' Project (J.M. City Government Official).*

*As Encorp Pacific Manager noted,*

*...they got a contract with the PNE (Pacific National Exhibition) ... So we did a partnership with the PNE and the binners to promote zero waste and to increase the collection of containers (S.F. Encorp Pacific).*

*According to the manager of the Binners' Project,*

*So that was one way we were able to quickly kind of work with the city, you know to engage them in these event programs is because it's one of their goals (the 2020 Greener City Action plan...which include green jobs); it's very aligned (G. Manager, Binners' Project).*

Here, binners' participation in service delivery here is made to align with the goals and objectives (governmental rationalities) of the City/local government. As Bulkeley (2007)

argued, governmental rationalities are achieved through technologies of agency and technologies of performance. While technologies of agency, in this sense, refers to binners' involvement, technologies of performance refer to the targets set for specific assignments as well as the process of ensuring these targets are met (compliance monitoring). Since binners' participation would involve assigning specific roles or tasks, it is normal to ensure that these tasks are accomplished (through compliance monitoring) to promote democratic accountability.

- Access to Recyclables

Encorp Pacific also claim to be in collaboration with binners by providing or increasing access to recyclable materials. As the Manager of Encorp Pacific stated,

*We've been very closely involved with the binners community since our beginnings ...we put blue beverage container return bins in high pedestrian traffic areas. So those we designed working with the binners community ...to be unlocked so that when people put containers in, binners can remove the containers from those and not have to go to the garbage to find the containers. ...we have a very close relationship with the Binners' Project which is started up and is growing rapidly these days (S.F. Manager Encorp Pacific).*

By creating opportunities for binners to collect beverage containers from high pedestrian areas, binners are granted access to more life-saving resources. On the other hand, as shown earlier, the City government seems more interested in binners collecting glass bottles from

the blue box to avoid contamination. This shows varying interest among stakeholders regarding what material should be made available to binners. Subsequently, I discuss these contradictions.

- Financial Support

Access to recyclables is pointless if binners lack the resources to transport them. While some binners carry collected recyclables on their backs or bicycles, others mostly use shopping carts for transporting recyclables to the bottle depots which generates enormous amount of noise (Tremblay, 2008), most of which are taken from retail outlets such as grocery stores. This is one of the factors leading to stigmatization of binners. To solve this problem, the City as well other stakeholders are currently funding the production of the Universal Cart Initiative (UCI), a special cart designed for binners in the City of Vancouver. This cart which can either be pushed while walking or attached to a bicycle in the form of a trailer will be stored in two depots where binners could go pick up and return at the end of the day. A voice recognition system is currently being developed to aid easier access to the carts and the UCI is currently being piloted. This is another way through which the City government is supporting the binners.

Although prior to the establishment of the Binners' Project which in 2014, the City government, in 2005, supported the United We Can bottle depot (which at the time, acted as a support organization for binners) by partly funding a similar initiative called the Urban

Binning Unit with the which allowed the building of 10 carts that were co-designed with binners (Tremblay, 2010).

*We've contributed money over 2 years to a system for the design of a cart that can be either towed by a bicycle or can be used by somebody - binner who is walking, ...for the binners to be able collect more materials and bring them more efficiently to depots (S.F. Encorp Pacific).*

Asides the Universal Cart Program, the Binners' Project also runs several other programs or initiatives such as the Coffee Cup Revolution to empower and support the livelihoods of binners, all of which are also supported by the City and other stakeholders.

*So for the past may be 3 years, we've provided grants that help support a number of their initiatives such as the coffee cup revolution, development of different programs. So it kinda helps them run those programs (J.M City Government Official).*

As confirmed by the manager of the Binners' Project and a binner,

*We're funded with the City of Vancouver, and Vancouver foundation are our major donors- our grand donors. We also have Vancity as another major donor. We're also funded through a variety of smaller grants and awards (G. Manager Binners' Project).*

*...so they (the City of Vancouver) give us grants and that's how the Binners' Project does work (G. Binner).*

### 3.5.1.3 Waste collection and community service provision

Due to the low and obsolete refund deposit on containers, most people do not value the cost of their waste neither is there a huge concern for the environment. Therefore, these materials are mostly poorly discarded and then end up in the landfill. But through resource recovery, binners act as environmental stewards and community servants by collecting these materials, thereby reducing the amount of waste that ends up in the landfill. But such acts are generally unrecognized and poorly rewarded (Gutberlet et al., 2009). As stated by the Manager of Binners' Project,

*...people don't value the cost of their trash. They don't realise how much it costs us like to the environment and you know all those things that we would be paying for years down the line. But it's also the human cost – I mean binners are picking up bottles and cans for 5 cents a can. But that's their time and their energy so what's more than that...like I've followed binners spending 3-4 hours binning and making \$5. So that's so low, like it's not valuing their time. But they are doing a huge service like in cleaning up our streets (G. Manager, Binners' Project)*

Not only do binners collect materials from bins, they also pick up street litter, thereby promoting cleaner and healthier cities. Binners who collect materials from the streets or open places rather than dumpsters are often referred to as 'skimmers' or 'beach combers' (Tremblay, 2008). Although this category of binners collect recyclables for survival purposes, they also recognize the social and environmental implications of their work. (ibid.). A City Government Official noted:

*So you see that's a benefit that we all get, even though it's not organized but it's happening all the time (P.H. City Government Official).*

Despite this invaluable role played by these individuals, they are generally stigmatized due to the filth associated with waste, particularly digging through garbage in search of recyclables. Other causes of the stigmatization include stealing of carts as well as their associated noise and the littering of alleys (Gutberlet and Jayme, 2010; Tremblay, 2007). As mentioned earlier, the Bidders' Project, in response to this, has developed a cart program which is being funded by the city as well as other stakeholders. The organization also trains bidders on how to properly sort waste, which they then pass across to the general public. According to the Manager of the Bidders' Project,

*So we have like a sorting, and that's teaching the bidders how to sort the waste into the proper bins (G. Manager, Bidders' Project).*

#### 3.5.1.4 Creating awareness and educating the public

Education plays a vital role in enhancing municipal recycling. Regardless of the strictness of the law, robustness of technology and the amount of funds allocated to manage waste, the process would be rendered futile without adequate education of the public on proper recycling practices (Hasan, 2004). Therefore, the importance of public education in municipal waste management cannot be overemphasized. The bidders in Vancouver are working towards creating awareness about their presence in the city, showcasing their skills and capabilities as well as to ultimately increase their recognition. Awareness creation and public

education are usually carried out mainly during the Coffee Cup Revolution events and other events in which binners are involved in sorting or managing waste. According to the manager of the Binners' Project,

*Our organisers are interested in public waste education, so having binners at the fore-front teaching people how to sort their waste (G. Manager, Binners' Project)*

*As one of the binners noted when talking about locked bins:*

*They pay us to go out there and educate people and they say oh yeah, the Binners' Project is doing a great job...*

### 3.5.2 Binners' Level of Participation in the Waste Governance (Decision-Making)

Binners (through the Binners' Project) in Vancouver are invited to participate in what MirafTAB (2005, p. 4) called 'an invited space of citizenship', thus, making them actively involved in service delivery mostly at events. On the other hand, binners' participation in decision-making as a whole is quite ill-defined as binners' voices and opinions are often sought and represented in certain decision-making process such as the Single-Use Item Reduction Strategy, but seem excluded in the making of other policies that could significantly impact their livelihoods. Such policies include the City's recycling bylaw (as shown subsequently). According to a City Government Official, when asked about binners' (the Binners' Project) involvement in the waste-related decision-making process in Vancouver,

*It depends on the project or the initiative that we're looking at. So for example, we had the Single Use Item Reduction Strategy, so there were a number of*

*stakeholders that were consulted on that initiative or strategy, and the Bidders' Project was at the table – they worked on that. For something like our on-street recycling program, I would say that they are informed... So it really depends on what the issue is. So but for general education and awareness programs, we wouldn't necessarily involve the Bidders' Project at that point. ...it would range from no participation all the way up to collaboration. I'm not sure there's any co-production at this point (J.M City Government Official).*

The above statement reveals some level of participation in decision-making, but it is uncertain as to which degree the perspectives and knowledge of bidders are valued, acknowledged and integrated. The statement also suggests that bidders' participation is largely contingent upon the goal and objectives of the City government, and its perceived best course of action. Nevertheless, the fact that bidders sit at the table to discuss one initiative (the Single Use Item Reduction Strategy) indicates that the City government is willing to broaden engagement with bidders.

However, the lack of bidders' perspectives or inputs in certain waste-related policies can be linked to various tensions and contradictions in these policies which continually threatens bidders' day-to-day survival. For example, as previously mentioned, the City Government Official expressed interest in having bidders collect glass bottles from the blue box due to the contamination they cause to the system. However, the most recent recycling bylaw that was passed in December 2018 contradicts this statement, in that it prohibits the collection of materials from the blue box. As stated in the city bylaw,

- (1) No person except the City Engineer is permitted to remove any blue box recycling or recycling cart from the premises for which the City Engineer intended it to be used.
- (2) Where recyclable material has been deposited in a blue box recycling container or recycling cart by the owner or occupier, no person permitted to remove (a) any recyclable material from the premises of that owner or occupier, or (b) any recyclable material from the blue box recycling container or recycling cart (City of Vancouver, 2018, p.16).

This bylaw and the comments of the City Government Official and Encorp Pacific Manager shows a conflicting interest in involving binners in municipal recycling. While Encorp Pacific seems more interested in beverage containers in high-traffic areas, thereby, leaving bins open, the City government seems more interested in allowing binners collect glass bottles from the blue box to reduce contamination, but the recycling bylaw states differently. This shows that there exists varying interests and priorities among these stakeholders. One possible reason for such conflicting interests could be because Encorp Pacific answers directly to the Ministry of Environment and Climate Change (figure 1), and thus, does not consult with the City government to see the possibilities of aligning the goals and objectives of both bodies.

- Problem of Ownership

The curbside recycling has always been a source of revenue for municipal governments not only in Vancouver but across North America (Goff, 1994; Tremblay, 2007). Informal recycling

on curbsides has increased significantly across North America (Medina, 1997) and this is one of the major causes of the controversies and disagreements between the binners and the private hauling companies, contracted for the garbage collection. This is similar to Koponen's (2003, p. 553), argument that "recyclables, garbage and waste are owned by the local governments... thus, making it the responsibility of the local governments to negotiate the hauling and sorting of waste".

Curbside recycling is the conventional means through which Municipal Solid Waste is collected, including beverage containers. The curbside is a public space where the transition in ownership occurs and as Lane argues, "...is a critical focus for the categorization of private property more generally" (2011, p. 398). These attempts often fail, times due to the inability to practically "secure sole property rights to materials", particularly with curbside recycling, and also because some residents intentionally perpetuate informal recovery by strategically placing recyclables along the trap lines of the informal recyclers (ibid., p. 404). Drawing from Cave's argument that "municipal authorities have the responsibility to cope with garbage, they do not own garbage" (2012, p. 11), Dias (2016) describes waste as an *urban common* as a resource that is neither privately owned nor exclusively owned by the government but shared with the society just like water and air.

The recycling bylaw also reiterated the locking of dumpsters greater than one cubic yard in size which was first mandated in 2005 (cited in Tremblay, 2007; City of Vancouver 2018, p.27). According to the survey conducted with binners, dumpsters was reported to be the major source of recyclable materials for binners (about 43 percent), followed by street cans (33 percent) and the blue box (29 percent). Binners noted that:

*The City Union (government) has pretty much screwed that up too saying no this is ours to do. This is all our good job and you guys stay out of it (M. Binner).*

*It's the City helping us but at the same time stabbing us. So it's difficult to say exactly how they feel whether they like us or not (J. Binner).*

Indeed, the City government has been developing strong relationship with bidders through the Bidders' Project and collaborating with them in managing waste at events. However, the above statement by the bidder show how much hurt they feel due to the limitations placed on them by the bylaw which significantly reduces their access to these life-saving resources. Bidders' statement also show that the locking of bins and dumpsters has caused more harm than good. For example, bidders reported littering at apartments with locked bins, and lamented about the significant reduction in their daily incomes. As a bidder noted,

*We noticed that the bins are locked and there's a bunch of garbage beside it that should be in the bin instead of being outside of the bin... it is about trying to take the recyclables out of that bin instead of locking them up and making it harder for bidders to get there or get some recyclables (J. bidder).*

Another bidder also lamented that

*I was binning before the locking, and anybody could go and make a \$60 in an afternoon. Then when they locked them up, things went down that one would make only \$20 or just under \$20. (M. bidder).*

In response to these challenges binners have invented their own spaces of citizenship through various forms of resistance. The locked bins came up as a dominant topic in the photovoice activity.

### 3.5.2.2. Insurgency and Forms of Resistance

As binners are forced to navigate harsh outcomes of policies imposed from above, these individuals in response, recourse to making their voices known through tactics of resistance and insurgency (Miraftab and Wills, 2005; Watson, 2013). As binners continually encounter locked bins, they vent their frustration by forcing their ways through these bins and purposeful littering and polluting the area. As noted by a participant on purposeful littering and polluting:

*What they've (the City government) done is they've tried to create a solution...but...this is too dangerous because what guys do, is, they will wedge the bin open to the best of their ability ...they've created... dangers and mismanagement in the sense that people are still gonna try getting into it regardless of what you do... (Binners)*

On forcefully accessing bins, another binner noted:

*...it's a manifestation of how they feel inside.*

These forms of resistance have been a major turn off for not just the general public, businesses, etc., but also the government as they are apparently contributing to creating nuisances in society. This form of resistance is to the demerits of the binning community as it

increases the stigmatization they face. However, there are claims by the binners that such activities are carried out by the drug dealers in the city, and that binners are often misrepresented as drug addicts. In contrast to that also, participants (binners) admitted that some binners are culprits of such acts.

*...these are done by drug addicts, homeless people, and even binners themselves sometimes don't know what they are doing. And they are doing it themselves.*

*Like the amount that you can pick up and the amount of people that are willing to deal with you is less and less.*

### **3.6 CONCLUSION AND FINAL CONSIDERATIONS**

In this paper, I explored the roles binners play in municipal recycling and binners' level of participation in waste-related decision-making. Results reveal that the binners' level of participation is indistinct as their voices and perspectives are well-represented (through the Binners' Project) in certain decision-making such as the Single-Use Item Reduction Strategy, but they seem less represented in other waste-related decision-making such as the City's recycling bylaw. The study also suggests that binners' participation is largely dependent on the City government's goals and objectives and its perceived best course of action.

There is also a conflict of interest in the type of material to be made available to binners by Encorp Pacific and the City government. Despite these contradictions, binners' contributions to municipal recycling is very evident and significant, and this was attested to in the interviews with stakeholders such as the City Government Officials, Encorp Pacific Manager and UWC

manager. It is important to note that the current level of involvement of binners in municipal recycling as well as decision-making is only a recent development and the government deserves some accolades.

The Binners' Project, a grassroots organization, have played a key role in influencing binners' participation in municipal recycling and the decision-making process to the current level through its several initiatives that help to empower binners, destigmatize binning, and create more awareness regarding binners' unique capabilities. However, a major challenge, according to Miraftab (2009), is that these organizations do receive funding from governing bodies and are thus in collaboration with them. Miraftab further argues that this form of dependency solidifies the state's hegemonic dominance and thus limits the organizations' ability and willingness to get the voices of their members heard through acts of resistance due to the fear of losing funding opportunities (Miraftab, 2009). Rather they recourse to a subtler means of resistance by utilizing the politics of recognition. Nevertheless, this is not to imply the encouragement of violence, aggression, or destruction of public properties through covert resistance, even though "...cities are serial sites of policy failure as well as resistance to neoliberal programs..." (Peck et al., 2009, p. 49). Rather, insistent and assertive politics of recognition strategies may be utilized which could include strategic and intensive educational campaigns, television advertisement about the work of binners, lobbying for the increase of the deposit and inclusion of other materials such as milk containers, disposable coffee cups, to-go drink cups, etc. through dialogues and negotiations and possibly other deliberative processes.

There is a need for a transformative (active) participation of binners in decision-making regarding waste-related policies, such as the recycling bylaws. As shown, the absence of binners' perspectives and knowledge in such decision-making comes with consequences that negatively affect binners. These include harassment by formal waste collectors/haulers, increased stigmatization from the general public, and resistance/insurgency such as forcefully accessing bins and intentional pollution of alleys. Other negative consequences include the occupational hazards these individuals are exposed to as they force their way through bins. Furthermore, restriction from collecting recyclables from dumpsters/bins reduces the diversion rates of these materials. This then leads to insufficient materials entering the circular economy for the production of new beverage containers to supply the consumer demands. In other words, it negatively impacts sustainability, thereby creating the need for the exploitation of more virgin resources. This eventually leads to more natural resource depletion and environmental degradation.

According to Goodwin (1998), transformative participation gives binners not just the opportunity to participate in an invited space of citizenship, making them passive receivers of an external knowledge mediated by power, but it makes them knowledge creators. By so doing, governance will be more legitimate, harmonious, and democratic (Michels, 2012). This form of governance decreases the distance between the community (binners) and government, and by inviting binners with their everyday practical knowledge can improve service delivery and decision-making. According to Gutberlet (2008), participation in policy making is more than mere consultation, but requires transparent democratic processes,

forums for deliberation and genuine participation of the binners as participants in waste governance.

Furthermore, in the interim, while the ban of disposable coffee cups is anticipated, there is a need for inclusion of these and other materials such as milk containers in the refund system as they make up about 50 percent by volume of materials collected in street litter cans, sidewalks and litter receptacles, costing taxpayers about \$2.5 million annually (Saltman, 2017). This will further increase binners' income and hence, improve their quality of life, after all, they have been instrumental in creating more awareness and seeking solutions to the better recovery of these items. Also, since glass bottles tend to contaminate the waste haulage from the curbside, deposit refund on these items should be increased to boost their recovery by binners. These are excellent ways to improve binners' participation in municipal recycling. As White (1996) noted, the problem is not simply 'enabling people to participate', but ensuring that they participate in the right ways.

This paper has addressed some of the political, social, economic and administrative aspects of waste governance in Vancouver, focusing on the participation of the informal recycling sector. I have identified the key roles the binners play in waste management, the challenges they are facing and have considered some of the recommendations that have emerged out of the data and literature.

## INFORMAL RECYCLING IN VANCOUVER: GEOGRAPHIES OF SURVIVAL OF BINNERS AND THE ROLE OF GRASSROOTS INNOVATIONS

### 4.1 ABSTRACT

The current body of literature in social science is replete with studies on the informal recycling sector, particularly on Africa and South America. Although recurrent findings from these studies attest to the significant contribution of informal recyclers (in the Canadian West coast context called bidders) to the circular economy and to the reduction of waste that would otherwise end up in landfills, bidders are yet faced with series challenges, all of which are products of deprivations of fundamental rights. In this paper, I placed more emphasis on the right to recyclable materials – a major source of livelihood and survival of bidders. Drawing from the “geographies of survival” which Mitchell and Heynen (2009, p.611) defined as the “spaces and spatial relations that structure how people may live and whether they may live”, I used a mixed method which include in-depth interviews, photovoice, surveys, and document review to investigate the struggles and pathways of survival that bidders in Vancouver, BC., navigate in their day-to-day lives. I also examined the roles of grassroots innovations in enhancing bidders’ survival strategies and revealed that empowerment at the individual level through capacity building is the first and most important step to improve bidders’ survival strategies.

Keywords: geographies of survival, empowerment, informal recycling, Vancouver, grassroots innovation

## 4.2 INTRODUCTION

Due to the seemingly organized system of waste collection in north America the informal recycling sector, at the Canadian West Coast referred to as binners, are generally excluded from both waste management (collecting discarded materials) and waste governance (decision-making process related to waste management). The informal recycling sector is characterised by individuals who collect recyclable materials for refund deposits as their primary means of survival or to support the income from the government's social assistance programs. These individuals usually live under precarious conditions, which include homelessness and drug addiction. These factors, as well as the stigma associated with digging through waste, further exacerbate their level of social exclusion and stigmatization by residents and landlords, bylaw officials, the police, businesses, and others.

The recovery of recyclable materials for refund deposits is a major livelihood strategy of binners, especially those who do not receive government social assistance. Denial of rights to collect these materials and rights to participate in waste-related decision-making processes has continually impacted binners' ability to survive and generated series tensions between binners and other stakeholders in the waste management system. Waste is usually being managed by the government, through contracts with private companies, or by a mix through public- private partnerships, usually without clear rules over the access to the recyclable materials, affecting the availability of refundable bottles and cans who are usually retrieved by the binners, generating tensions and challenges over the ownership to these materials among these stakeholders (Gutberlet et al. 2009). What's more? Binners are deprived of other fundamental 'rights to the city' (Lefebvre, 1996; cited in Purcell, 2002) which include freedom

to use public spaces resulting from the reframing and transformation of these areas to conform with neoliberal agendas (Wittmer and Parizeau, 2016). Neoliberal agendas or neoliberalism, in general, refers to a shift in state ownership and level of interference in economic issues of individuals and the society, thereby, “subjecting the majority of the population to the power of market forces whilst preserving social protection for the strong” (Gill, 1995, p. 407; Kenton, 2019). Downsides of neoliberal agendas are quite evident in the exclusion of bidders in urban renewal processes through the redefinition of public spaces (Brenner et al., 2009; Wittmer and Parizeau, 2016). Also, several cities in North America have witnessed significant cut-backs of government social assistance programs – a primary means of survival of disadvantaged groups which include bidders (Hunter and Miazdyck, 2006; Penna et al., 2000). These conditions have significantly complicated the day-to-day of living bidders, making survival extremely arduous.

Discourses pertaining to the enhancement of the quality of life of bidders through active participation in waste management and also decision-making processes have been at the core of the literature on participatory waste governance (Gutberlet, 2012; 2015; Hordijk, 2005; Nzeadibe and Anyadike, 2012). However, formal waste management obviously requires some level of skills which are usually not inherent in the bidders’ repertoire. This include sound knowledge of the different waste streams and proper recycling practices. Another limiting factor to their level of participation is their socio-economic situation, their condition of homelessness, drug addiction and mental health issues, all of which are capable of inhibiting their efficiency and effectiveness in service delivery. What then could be the solution to this problem?

Social science scholars, in the last few decades, have extensively studied the roles of grassroots organizations in improving the level of participation of disadvantaged groups in not only waste governance but also related to other forms of innovations that seek to meet the key needs of these groups to which the state has failed or seems reluctant to respond to (Morgan, 2014; Petit, 2012). A recurring theme in these studies is the notion of empowerment through capacity building to boost their ability to act, identify and utilize opportunities and resources, and ultimately, grant them freedom to *inhibit and inhabit* in their respective communities. In other words, grassroots organizations do not only enable informal recyclers to effectively participate in waste management and waste governance, but they also help them maximize their potentials. Despite the goal to empower and give voice to marginalized groups, grassroots organizations are not resistant to challenges.

In this paper, using Mitchell and Heynen's notion of geographies of survival, I examine the various challenges faced by binners' in everyday situations in Vancouver, BC as they navigate their major pathway for survival – binning or informal resource recovery. I also investigated the roles of grassroots organizations in enhancing binners' geographies of survival and challenges encountered in the process.

## **4.3 THEORETICAL FRAMEWORK**

### **4.3.1 The Geographies of Survival of Binners**

According to Mitchell and Heynen (2009, p.611), the geographies of survival “describes the spaces and spatial relations that structure how people may live and whether they may live”.

The concept of 'geographies of survival' was drawn from Lefebvre's notion of the 'right to the city' which he defined as the "superior form of rights: right to freedom, ..., to habitat and to inhabit (1996, p. 173)." The deprivation of these critical *rights* has been a major nightmare for disadvantaged groups such as informal recyclers globally. These rights, which include *freedom* to collect recyclable materials are increasingly being restricted through the enactment of laws that criminalizes the act of binning (see previous chapter). The absence of the right to *habitat* (a place of abode) is quite apparent in the rate of homelessness faced by informal recyclers worldwide including in the Downtown Eastside (DTES), Vancouver. The same could be said about the right to *inhabit* (to exist or be in a place) as binners are often being banned from using public spaces (Tremblay, 2007).

The DTES is also referred to as 'Canada's poorest postal code' due to the presence of a huge number of homeless people, mental health challenges and drug addiction, the majority of which recover materials to earn a living. Despite the impoverished nature of these individuals, the city has experienced a series of roll backs on welfare restructurings as well as roll outs of new disciplining techniques that restricts access to these vital rights (Peck and Tickell, 2002), thereby, pushing the impoverished population "into the urban shadows, the hidden abodes of poverty that continue to mark every North American city, no matter how shiny its gentrified appearance" (Mitchell and Heynen 2009, p. 613).

Geographies of survival, thus, in other words, explains the various means through which impoverished individuals get by these rights deprivations. Although, primarily, this is usually done by "...constructing pathways of survival through the urban landscape that links together..." places where refundable materials are collected to earn extra income, places

where food could be obtained such as foodbanks or dumpsters, places of rest such as squatting with friends/relatives or sleeping in tents or sleeping outside in thick blankets to shield themselves from harsh weather conditions (ibid.). These precarious conditions of the socially powerless, therefore, has also led to the establishment of various grassroots innovations across the globe to address the needs.

#### **4.3.2 Grassroots Innovations and the Geographies of Survival**

Seyfang and Smith defined the term ‘grassroots innovations’ as a “networks of activists and organisations generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved” (2007, p. 585). More generally, highlighting all the key characteristics of grassroots innovations, Smith (2007) defined grassroots innovations as “locally based, significantly autonomous, volunteer-run, formal non-profit (i.e., voluntary) groups that manifest substantial voluntary altruism as groups and use the associational form of organization and, thus, have official memberships of volunteers who perform most, and often all, of the work/activity done in and by these non-profits” (cited in Seyfang and Smith, 2007, p. 7). In other words, grassroots innovations are community-based organizations that exist primarily to assist less privileged individuals who lack access to the *superior form of rights* often through the development of novel ideas and innovations that challenge the neoliberal policy and urban inequalities (Allard & Matthaei, 2008; Arruda, 2008).

As mentioned above, grassroots innovations are usually formal, and thus, registered and recognized by the state. However, grassroots innovations also emerge from informal groups.

Individuals who become members of these organizations are often unrecognized by the state due to their socio-economic status. More specifically, by collecting recyclable materials *informally*, binners are part of the *informal economy*. The informal economy is described as the variety of income generating activities that are unregulated or unprotected by the government and thus regarded as illegal, and sometimes unethical (Chen, 2012). Due to the precarious nature of the informal sector, several scholars have argued for the formalization of the informal recycling sector to reduce the stigma associated with binning as well as to improve their quality of life by adequately remunerating their service to the community and the environment (Gutberlet 2008; Tremblay 2009). The integration of the informal sector through the formation of solidarity groups/associations/grassroots innovations has been argued by these scholars to be the easiest route to formalization (Ackerman & Mirza, 2001; Medina, 2003; Parizeau, 2013). Particularly with respect to informal recycling, establishment or formation of these organizations increases the chances for a greater form of inclusion – into the waste management system (Gutberlet, 2007; 2008). However, this form of inclusion requires certain level of skills and autonomy which oftentimes are lacking in the informal sector.

Grassroots innovations occur mostly within the organizations' niche. A niche, as defined by Truffer et al. is a "discrete application domain (habitat) where actors are prepared to work with specific functionalities, accept such teething problems as higher costs, and are willing to invest in improvements of new technology and the development of new markets." (2002, p. 4). Niches are also sources of novel ideas (Smith, 2006). But such innovations cannot be implemented within the niche alone because "change depends upon contingencies and

processes beyond the unilateral control of niche actors” (Berkhout et al., 2004; cited from Seyfang and Smith, 2007, p. 589). Thus, they require application in the wider society and interaction with external actors, such as businesses, government, funding bodies, etc. Although such interactions are beneficial, they are also bound to generate *coercive pressures* such as tensions, restrictions and contradictions, all of which make up the major challenges faced by these organizations (DiMaggio and Powell, 1983).

Although grassroots organizations are not-for-profits in nature, a major challenge revolves around the uncertainty of securing adequate budgets to run developed programs or initiatives, and also pressure to meet up with targets and frameworks imposed by funding bodies. Pressures from the government occur largely as a result of their wariness to accept or support the experimentation of new initiatives which do not conform with the mainstream *modus operandi* (Seyfang and Smith, 2007). This could be due to tendency for failure of these initiatives as well as the broader issue around democratic accountability. This results in the pressure on grassroots innovations to develop skills and capacities of its members to meet up with societal expectations in the implementation of new ideas and initiatives.

Particularly with respect to informal recycling, the mainstream neoliberal practices of recycling results in an unhealthy competition between the bidders (grassroots) who depend on refundable materials as a means of survival, and the private hauling companies with whom the government contracts garbage collection. Another source of pressure is the perception of the general public (residents, landlords, businesses) about bidders as either drug addicts and nuisance to the society. These ideas are based on ideologies most of which are power-

mediated and can pose serious challenges to the successful implementation of developed innovations and the sustainability of grassroots innovations.

#### **4.3.3 Empowerment through Grassroots Innovations: A Means to Survival**

With an agenda to address dominant power relation, the rhetoric of grassroots innovations has at its core the empowerment of disadvantaged groups. This is mostly achieved through capacity building for not only an active participation in the implementation of innovations/initiatives developed within their respective niches but also boosting the value, resourcefulness, and acceptance of these individuals in the wider society. Without strategic capacity building, participation in the implementation of initiatives can be inefficient and unproductive. And “without genuine empowerment, participation can quickly become a token exercise or even a means of maintaining power relations” (Pettit 2012, p.2; see also Cornwall and Brock 2005). The term empowerment has been defined in several ways, but Page and Czuba (1999) define it as “multi-dimensional social process that helps people gain control of their own lives...by fostering power in people for use in their own lives, their communities and in their society, by acting on issues they define as important.” Empowerment can, therefore be defined as process of changing or challenging power relations by granting or transferring *power* to disadvantaged individuals.

‘Power’ is an important aspect of the term empowerment (Morgan, 2016; Rowlands, 1995). There are four basic forms of power relations according to Rowlands (1995) and Mayoux and Johnson (2007). First, is the ‘power from within’ – which has to do with creating self-awareness

and improving self-worth and confidence of individuals. Second, is the 'power to', which has to do with enhancing individual's capacity to act through skill development. Third, is 'Power with', which places emphasis on collective action. The fourth is 'power over' which is exploitative and oppressive.

Although Kelly (1992) argues that empowerment refers simply to fostering 'power to', Taliaferro (1991) argues differently, that "true power cannot be bestowed: it comes from within... by undoing negative social constructions, so that the people affected come to see themselves as having the capacity and the right to act and have influence in the society" (cited in Rowlands, 1995, p. 102). Fostering the first three forms of power is pivotal to the process of empowerment and thus, makes it possible to challenge and withstand 'power over'. This understanding of power then shows not only that power can and must change for empowerment to occur, but also that empowerment occurs in three dimensions of influence: Individual, collective, and societal (Page and Czuba, 1999; Rowland, 1995) as shown in figure 2.

Figure 2. Dimensions and levels of influence of 'empowerment' (Sholanke, 2019)

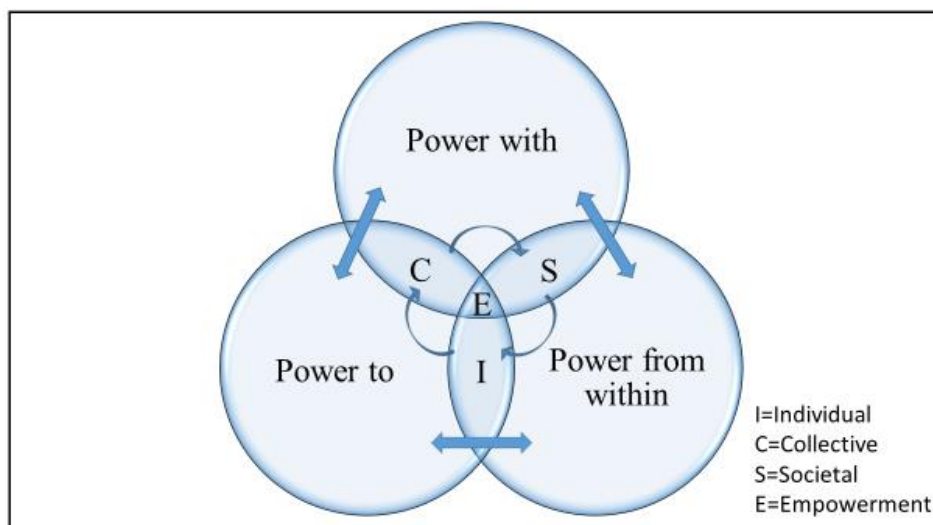


Figure 1 shows that empowerment is a continual social process. At the individual level, fostering capacity to act (*power to*) influences self-confidence and self-worth (*power from within*) and vice versa. This reciprocal causation also happens at other levels of empowerment. For example, at the collective level, capacity to act (*power to*) influences collective action (*power with*) and vice versa. Same with the societal level. Also, at the individual level, empowerment happens by fostering *power from within* (self-confidence and self-worth) and *power to* (skills). This then increases the ability of disadvantaged groups to not just act but understand the importance of collective action. And through collective action (*power with* in combination with *power to*), change can be affected more effectively and extensively in society by using various techniques of resistance, be it covert or declared. Declared forms of resistance include activism, vigilantism, occupation, while covert forms of resistance include dialogue, negotiation, educational campaigns, public engagement and other forms of politics of recognition (Appadurai, 2002; Meth, 2010; Miraftab, 2005; 2009).

Most grassroots innovations are risk-averse primarily due to fear of losing the support of the government and funding, and therefore, rather turn to covert forms of resistance and politics of recognition so as to create more positive influences on issues, most of which are policy-related. Positive influences made in society then result in an increase in self-confidence and self-worth at the individual level (*power from within*) and increase the desire to act and utilize skills (*power to*). It goes on and on in a continuous cycle. Although true empowerment comes from within, *power to* through capacity building can also increase *power from within*.

Capacity building is a key driver of the process of empowerment. It is noteworthy here that every individual is imbued with agency or the capacity to do things. But due to socioeconomic

or sociopolitical forces, these capabilities are either “held, wielded, lost or gained” (Petit, 2012, p. 3). Capacity building is, therefore, a process whereby individuals’ *power to* are fostered and reinvigorated by boosting “their abilities to mobilize and use resources in order to achieve their objectives on a sustainable basis” (DFID, 2008, p. 3). Through capacity building, grassroots initiatives enable disadvantaged groups to gain access to information and opportunities and also reaffirm the rights to perform certain functions, thereby increasing their social capital and boosting their chances of increasing their quality of life (Pettit, 2012). In so doing, grassroots innovations restore basic rights of these individuals.

Empowerment through capacity building provides intrinsic benefits and diffusion benefits, both of which are not mutually exclusive but overlap in practice (Seyfang and Smith, 2007). Intrinsic benefits are felt more at the individual and collective level as they enhance survival strategies of disadvantaged groups through job creation, training and skill development, personal growth (self-esteem and confidence), a sense of community, social capital, improved access to services and facilities, health improvement, and greater civic engagement. They are also more valued within the organization’s niche and do not necessarily seek policy change. Diffusion benefits, on the other hand, are felt at the societal/community level through an increase in environmental awareness, education and promotion, changing the attitudes of policy-makers and engaging people in sustainability issues in their daily lives. These benefits are often ‘seeds for wider transformation’ and a means to an end (ibid.).

## **4.4 METHODOLOGICAL CONTEXT**

### **4.4.1 Case Study Overview**

Strategically located in the heart of the Downtown East Side (DTES) of Vancouver, the Bidders' Project is a grassroots organization which consists of a group of waste-pickers aided by support staff dedicated to creating economic opportunities, destigmatizing binning, and promoting social cohesion among members of the binning community. The Bidders' Project is arguably the major grassroots organizations that supports bidders in Western Canada. However, similar organizations are springing up in other major Canadian cities.

The Bidders' Project has taken steps to empower bidders within its geographic location through the development of novel initiatives which include the annual Coffee Cup Revolution event (which I explain in detail subsequently), Universal Cart Program, Bidders' Hook, etc. Weekly bidders' meetings are organized to create a sense of community among the participants, build both soft and technical skills, exchange information, plan/develop new initiatives to be implemented in the society. The Bidders' Project has also developed an initiative to draw attention to the benefits of informal recycling, equipping bidders with batches, and uniforms (T-shirt and hats), making them more visible. Other initiatives developed by the Bidders' Project include the waste sorting program which allows bidders to visit buildings/apartments/offices at specified times in the week to ensure items are in the correct streams and pick up the refundable materials. This is an environmentally friendly initiative that not only benefits bidders but also promotes environmental sustainability.

#### 4.4.2 METHODS

This research takes a case study approach to help gain “in-depth, multi-faceted understanding of a complex issue in its real-life context” (Crowe et al., 2011, p. 1). I applied a qualitative research approach, also allowing for quantitative data to be collected. The primary sources of data were in-depth interviews, questionnaire survey and photovoice. In-depth interviews allow for rich and personalized information (Manson, 2002). Interviews were organized around ordered but flexible questions, and the researcher’s role was largely interventionist like non-structured interviews (Hay, 2000). In-depth interviews and photovoice were conducted with five stakeholders to identify binners’ contribution to municipal waste management or governance, experiences and challenges encountered while working with binners and how grassroots innovation is helping to solve these problems.

Five in-depth interviews were conducted with two City Government Officials in the Engineering Department, Manager of the United We Can bottle depot, Manager of Encorp Pacific, and the Manager of the binners grassroots initiative (Binners’ project). The interview questions were sent to the participants prior to the interview allowing them time to reflect and organize their thoughts on the questions so that more robust and relevant responses could be obtained. The pyramid structure was adopted in the interviews to enable informants to get accustomed to the interview, interviewer, as well as the topics before asking questions requiring deeper thoughts (Hay, 2000). Each interview lasted between 30 to 60 minutes. Interviews were recorded, transcribed and manually analyzed using content analysis to identify themes, sub-themes, and patterns that emerged.

Questionnaire surveys (i.e. close-ended questionnaires) are a common way of quantifying information provided by participants. A total of 60 surveys were administered to binners within the City of Vancouver by six co-researchers which were purposively selected by the management of the Binners' Project and the United We Can (UWC) bottle depot. Five of the co-researchers were members of the Binners' Project, while the last was an employee of the UWC bottle depot. The survey included a wide range of questions to help give insight into the binners' demographic and socio-economic situation.

A two-hour survey training was conducted with the co-researchers. The training included discussions about basic research ethics such as consent, confidentiality, privacy and harm. The survey questions, which were initially developed without the participants' input, were then revised with the research partners to ensure a more participatory data collection process, to maximally reduce power-play, and to ensure binners easily understood the wording of the questions. Following the training, surveys were printed out and shared equally among the co-researchers. After the surveys were administered and collected, responses were entered into the Survey Monkey website and automatically analyzed.

The photovoice component was conducted to documenting binners' lived experiences, and challenges encountered while binning through photography. This community-based participatory action research method was driven by the desire to empower as well as to give participants a voice through photography. Photovoice method is widely known for its effectiveness in promoting democratic knowledge development where participants are actively involved in the research process particularly in terms of collecting data relevant to their lived experiences (Herganrather et al., 2009; Liebenberg, 2018).

The photovoice was conducted by co-researchers from the Bidders' Project. The UWC employee was not included since she is not a bidder. A two-hour training was conducted with the co-researchers, highlighting the purpose of the study, showing how to take photos, what makes a good and bad photo, and also discussing the basic ethical considerations. The co-researchers were asked to take up to 10 pictures that relate to their everyday experiences and challenges while bidding. Although the process did not necessarily require taking pictures of people, consent forms were provided to each co-researcher should they need or desire to take such pictures. Each co-researcher was compensated with an honorarium of \$15 per hour for the training as well as the time they spend to take their pictures. Five to ten photos were taken using an iPad provided by the researcher while some participants used their phones.

Upon completing the "photographic mission," a focus group discussion was held to discuss the content of the photos. During the discussion, co-researchers were asked to select their four most preferred pictures (20 in total), after which they were asked questions such as (i) what is in the picture? (ii) Why the picture was taken? (iii) How does the picture relate to their everyday challenge while bidding? The discussion was recorded using an android phone and a computer. The discussion was then transcribed and manually analyzed using content analysis to identify themes, sub-themes, and patterns that emerged.

Photos were then used to create a poster which was exhibited at the 'Coffee Cup Revolution' – an annual event where bidders recover disposable coffee cups within the Downtown Eastside. During the event, a bidder (co-researcher) and I stood at one of the tents where the poster was displayed to have conversations with members of the public who came to the tent. While I introduced the research and the purpose of the photovoice, the bidder narrated their

experiences while binning using the pictures on the poster. Sticky notes and pens were provided to members of the public with whom we engaged to provide feedback and recommendations. Although recommendations were few and anonymous, they were reflected in the recommendation section of this thesis.

Besides gray literature, we reviewed official documents such as the City of Vancouver Recycling Bylaw and other related documents.

## **4.5 RESULTS AND DISCUSSION**

Drawing from the data collected through the survey, in-depth interviews, and photovoice, this section provides a detailed investigation of the geographies of survival of binners by outlining several challenges the binners community is facing and the roles that the Binners' Project has played and is still playing in overcoming these challenges.

### **4.5.1 CHALLENGES IN BINNING**

#### **4.5.1.1 Reduced access to recyclables and increased competition between binners**

*Locked bins has halted binning more than anything in Vancouver (M. binner).*

Binners' accessibility to recyclables became threatened in June 2005, after the city of Vancouver made a proposition for the enforcement of the locking of dumpsters that are at least one cubic yard in size (City of Vancouver, 2018). This decision was due to concerns and complaints regarding an increase in littering and overflow of dumpsters within the downtown

eastside (Tremblay, 2007). As stated in the most recent (2018) City Bylaw, “if an owner or occupier of real property uses a private solid waste service involving a private container, the owner or occupier must: keep each private container that is visible from a street or lane and is greater than one cubic yard in size locked, except for the purposes of putting solid waste into the container...” (City of Vancouver, 2018, p. 27). According to the City Government Officials that we interviewed,

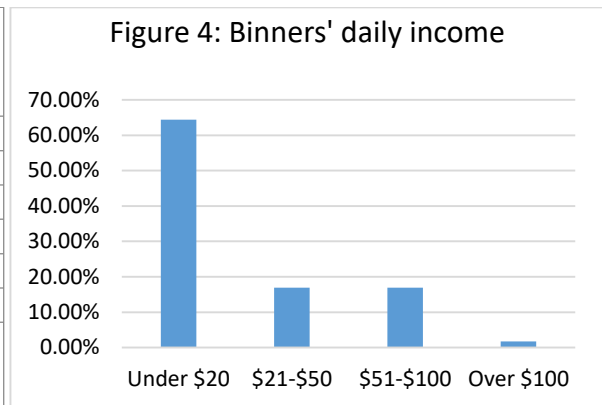
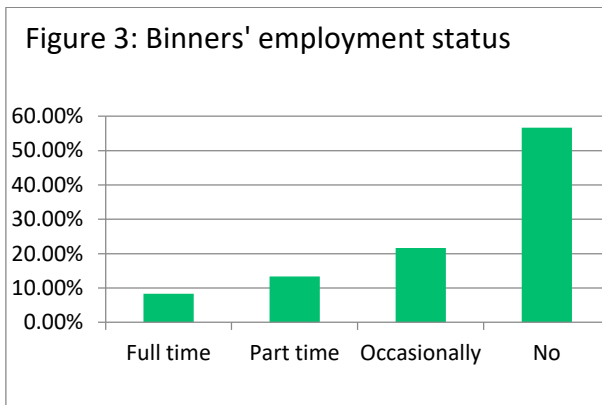
*...if they are on the city’s property, we do require them to be locked and that’s just for health and safety reasons. It’s just part of our requirement in order to make sure that the potential for a mess is minimized (J.M. City Government Official).*

*The locking of containers is important, in particular, like what happens is people that are not intended to use the containers use them and so it impacts the cost of service for the generator and also you end up with unacceptable materials in the bins. So, locking the bins reduces the potential for that (P.H. City Government Official).*

Not only has the locking of dumpsters limited binners’ right to access recyclable materials, but their right to survival is also threatened. Results from the survey conducted with binners reveals that about 60 percent were unemployed (figure 3) and 34 percent did not receive government social assistance. Among this population, over 60 percent of the them earn less than \$20 per day (figure 4) which would barely suffice to purchase two meals, not to mention other daily expenses. Therefore, although not investigated in this study, dumpster diving in search for food and clothing is a major survival mechanism of binners as shown by Eikenberry

and Smith (2005) and Tremblay (2007). Yet, binners are deprived of rights to these life-saving resources.

*I was binning before the locking, and anybody could go and make \$60 an afternoon. Then when they locked them up, things went down that one would make, you know, \$20 or just under \$20. It cut it back to at least a third to two-third (M. binner).*



Although the rationale for the enforcement of locking dumpsters is to prevent littering and overflow of dumps, the effects are rather contrary. This was evident in the pictures taken by binners during the photovoice exercise (Figures 5 & 6). According to the photographers (binners), these are dumpsters used by some apartment buildings within the DTES. As seen in the pictures, the dumpsters are locked and there is litter around them which renders impotent the rationale for the locking. Reasons for the littering could be because the keys are not readily accessible to residents or due to impatience to open up the bins and then return the key to the custodian. This might require further study. Two of the binners when asked why they took these pictures mentioned that:

*We choose the picture because we noticed that the bins are locked and there's a bunch of garbage beside it that should be in the bin instead of being outside of the bin (J. binner).*

A City Government Official stated that:

*A lot of multi-family recycling of waste is done within the buildings and those are typically not accessible to other people and you know there is a range, there's some places where there are street containers and a lot of the times, the areas are not accessible. In addition to that, you often see locking of containers.*



Not only is the city trying to keep binners out of dumpsters, but the same bylaw also prohibits the collection of recyclables from curbside, therefore criminalizing binning and also claiming ownership to these materials. As stated in the same City's recycling bylaw,

- (3) No person except the City Engineer is permitted to remove any blue box recycling or recycling cart from the premises for which the City Engineer intended it to be used.

(4) Where recyclable material has been deposited in a blue box recycling container or recycling cart by the owner or occupier, no person permitted to remove (a) any recyclable material from the premises of that owner or occupier, or (b) any recyclable material from the blue box recycling container or recycling cart (City of Vancouver, 2018, p.27).

Curbside recycling is the conventional means through which Municipal Solid Waste is collected including beverage containers. The curbside, a public space where the transition in ownership occurs "...is a critical locus for the categorization of private property more generally (Lane, 2011, p. 398). And these attempts often fail due to the inability to practically "secure sole property rights to materials" and also because some kind-hearted residents who understand both the economic and environmental benefits, strategically place recyclables along the trap lines of the informal recyclers (ibid., p. 404). As shown from the survey conducted with binners, although only about a quarter still recover materials primarily from the curbside, majority (over 40 percent) reported that their primary source of recyclables is dumpsters (table 2). Drawing from Cave's (2014) argument that "municipal authorities have the responsibility to cope with garbage, they do not own garbage" (p. 11), Dias (2016) describes waste as an 'urban common' as a resource that is neither privately owned nor exclusively owned by the government but shared with the society just like water and air (p. 376).

Table 2: Sources of material collection<sup>1</sup>

Source	Responses (ranking from 1 to 6)												Total
	1	2	3	4	5	6							
Household pick-up	17.9%	5	10.7%	3	32.1%	9	14.3%	4	7.1%	2	17.9%	5	4.64
Business pick-up	20.0%	5	8.0%	2	8.0%	2	24.0%	6	24.0%	6	16.0%	4	4.28
Blue box	29.0%	9	19.4%	6	22.6%	7	16.1%	5	6.5%	2	6.5%	2	5.29
Dumpsters	43.9%	18	29.3%	12	14.6%	6	2.4%	1	9.8%	4	0.0%	0	5.95
Street cans	32.7%	16	28.6%	14	16.3%	8	10.2%	5	12.2%	6	0.0%	0	5.59
Parks, beaches/public spaces	5.9%	2	38.2%	13	14.7%	5	17.7%	6	2.9%	1	20.6%	7	4.65
											<b>Answered</b>	<b>55</b>	
											<b>Skipped</b>	<b>5</b>	

As a result of the reduced access to materials, competition has increased amongst binners, thus, making it a region of survival of the fittest. As part of the survival strategies of binners, some go to the extent of immobilizing carts made available for binners at the depots to limit the ability of other binners to access the now scarce resource. In the words of one of the binners:

*Somewhere along the line you've gotta find a cart and the easiest place to find a cart is to go to the depot. But if you look at these pictures, these guys take the wheels off the carts so nobody else can use them and then they take them back to respective owners or use the metals for other things. That's binners helping out binners... binners against binners (M. binner).*

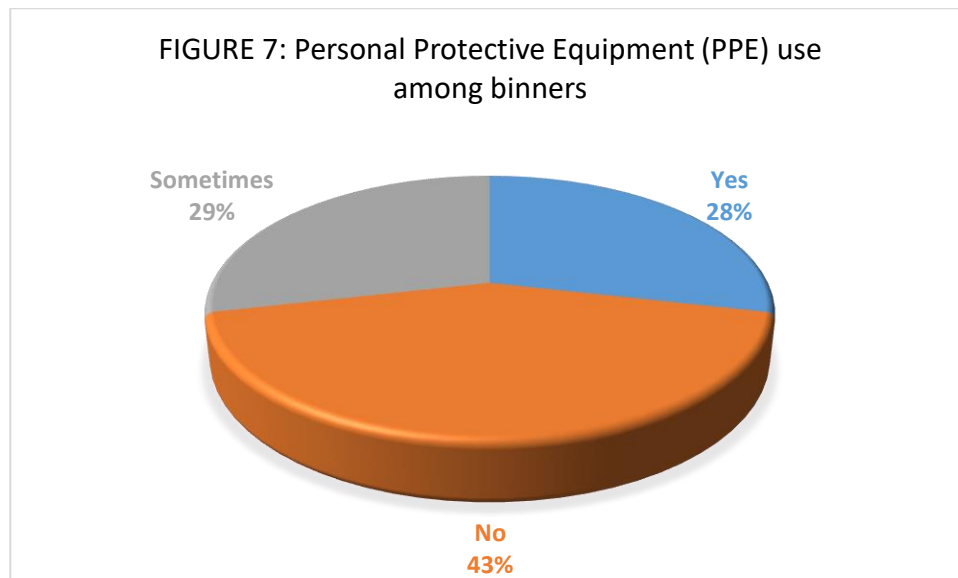
<sup>1</sup> Table 2 shows binners ranking of their sources of recyclable materials with 1 being the most important or patronised source and 6, the least important.

#### 4.5.1.2 Occupational health hazards and improper waste disposal practices

Several studies have shown that binning is characterized by several occupational hazards which include headaches, soreness, cuts, infections, musculoskeletal problems, etc. (Gutberlet & Baeder, 2007; Tremblay, 2007). These were highlighted from the survey results as 64 percent reported experiencing injuries while binning. Among these, more than half of the respondents reported experiencing cuts and physical soreness while about 30 percent reported having infections (table 3).

Table 3: Binner’s occupational health issues

Cuts	53.5%	31
Physical soreness	46.6%	27
Infections	24.1%	14
None	13.8%	8
Other, please specify...	5.2%	3
<b>Answered</b>		<b>58</b>
<b>Skipped</b>		<b>2</b>



Only 28 percent of bidders reported using PPE while 29 percent used sometimes. But the majority – over 40 percent did not use PPE at all. Considering that bidders are low-income earners and can barely afford these materials, it will be hasty to conclude here that bidders are simply care-free about their safety. As shown by other studies, this lifestyle is typical of bidders in other parts of the world (Binion, 2012; Ohajinwa et al., 2018). Furthermore, our study further reveals other forms of occupational hazards faced by the binning community, some of which could be linked to the locked bins. For example, one of the bidders stated that the locking of bins is

*...too dangerous because what guys do is they will wedge the bin open to the best of their ability... And sometimes if they've got a can and they're holding it open and it slips out, it would break your arms just like that. What they've done is they've tried to create a solution. However, they've created in the binning end of it, dangers and mismanagement in the sense that people are still gonna try getting into it regardless of what you do you know (M. Bidder).*

Bidders also expressed concerns regarding hazards caused by improper garbage disposal by the general public by showing some piece of garbage/clothing thrown outside through windows which lands on electric lines (figure 8). As a bidder noted,

*Those were taken because of the fact of things that fall on bidders when they are binning. As you can see, people just throw their stuff out of their windows, end up on electrical lines. I've seen electrical lines break .... and people inside them getting electrocuted. So, there's a lot of dangers when people do stuff like that.*

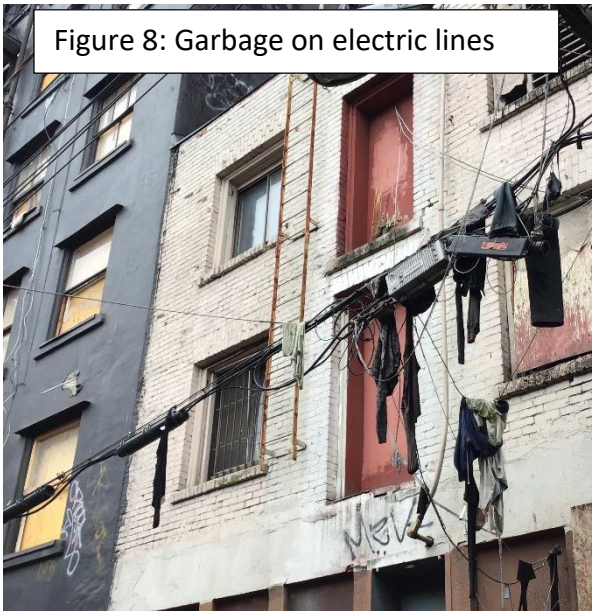


Figure 8: Garbage on electric lines

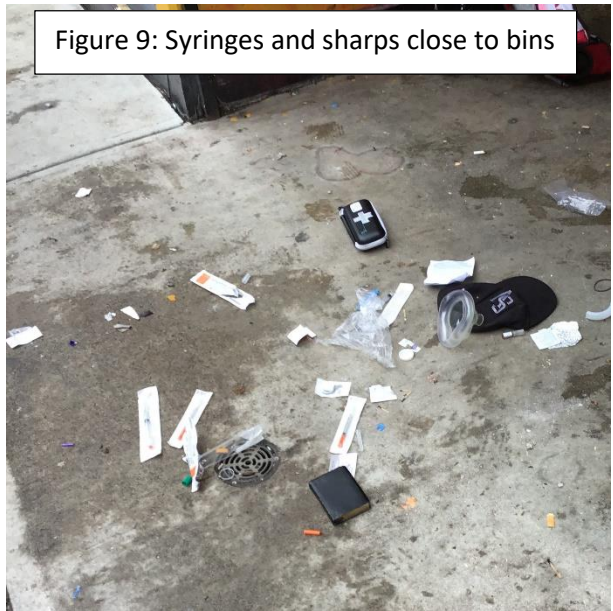


Figure 9: Syringes and sharps close to bins

Another occupational hazard reported by binners is the presence of syringes and sharps near waste bins (figure 9). The Downtown Eastside, Vancouver is notoriously known to be home to an extremely large number of homeless people, majority of which suffer from drug addiction (Tremblay, 2007; Wittmer & Parizeau, 2016). Although the area is said to be the first Canadian city to pioneer the safe injection sites (Hutchinson, 2017), this amenity is probably being underutilized by these individuals. According to a binner,

*That's a needle and sharps right there in front of the bins. That's what people use to do their drugs... and it makes it dangerous for binners (J. Binner).*

Contrary to the governments' claim that binners are responsible for the messing up of dumps ("Vancouver binners", 2006), these improper recycling practices are now being perpetrated by the residents themselves, thus resulting in further misrepresentation of the binning community as agents of urban disorder. What is more? Improper recycling practices do not end at the multifamily dwellings, but are observed in public spaces as well. For example, as

observed by the binners on their 'photographic mission', there were heaps of non-recyclables in the recycle bin (figure 10 & 11). As noted by a binner,

*That's a recycle bin that has no recyclable whatsoever. It's all mixed crap and that's a blue recycle bin. Tons of crap in there, newspaper, metal, organics, it's got everything in one f\*\*king bin and that's a recycling bin (M. binner).*



This waste disposal practice increases the amount of waste that ends up in the landfill. However, despite this, binners still dig through this garbage to recover materials that would rather end up in the landfill, thus, saving the environment one bottle at a time. Hence, the need for a more intensive public education on proper recycling practices and the effects of doing otherwise. One of the City Government Officials we interviewed could not argue differently:

*...it's not necessarily about just providing the litter cans, but it's about education and enforcement (J.M. City Government Official).*

#### **4.5.1.3 Tension with the City government, private companies, and bottle depot**

As mentioned earlier, the curbside is generally a contested space of ownership with regards to the recovery of recyclable materials. Discursive claim of ownership to discarded materials is a hallmark of the neoliberal agenda as most governments contract waste collection, and thus, transfers ownership to private companies which then results in the criminalization and exclusion of informal collection through the enactment of bylaws. Through contracts with the municipal government, private sectors consider waste as objects to be managed (Moore, 2012) and thus, claim rights of ownership as long as the assumption of complete contracting is maintained, whereas, by treating waste as a governable object, the government claim absolute ownership (ibid.). On the other hand, binners consider waste as a communal, economic resource with market value and thus claim ownership to it as their means of livelihood (through refund deposits). These variations in rationales of ownership claims could be attributed to cause tensions among these stakeholders.

First, is the tension with City government (Engineering Department). As one of the binners mentioned when asked about binners' experiences with the City government as they try to recover waste in the public including curbsides,

the city union has pretty much screwed that up to saying no, this is ours to do.

This is all our job and you guys stay out of it (M. binner).

Asides the need for inclusion of binners in decision-making process of the recycling bylaw, at the core of participatory waste governance lies the desire for co-management which include open access to waste – a communal property (Pinto da Silva, 2004). Pongracz et al. (2002)

defined waste as anything which the owner has disposed of or ceded ownership. Palmer (1993) puts it differently: that waste is ‘...any object whose owner does not wish to take responsibility for’ (cited in Pongracz et al. 2002, p. 92). She further argued that if the ‘waste’ is potentially valuable, an owner will emerge (ibid.). In other words, drawing from Palmer’s definition, any object which acquires a new owner, who wishes to take responsibility for it, is no longer waste, regardless of its history. Drawing from these definitions, we can argue that waste is simply any discarded material thus having no owner, and that whosoever first expresses interest in the waste then gains ownership. However, despite these claims of ownership by the City government, there has been an increase in collaboration between the City of Vancouver and binners (Sholanke & Gutberlet, 2019). For example, the City of Vancouver hires binners to educate members of the public on how to recycle properly and to sort the waste generated at events. Yet, one of the binners lamentingly mentioned that,

*The city is paying us but they are fighting us at the same time. They pay us to go out there and educate people and they say oh yeah, the Binners’ Project is doing a great job but at the same time they let things like this happen. They say we’re doing a great job but they’re not letting us do the great job.*

As another binner mentioned,

*But when you don’t have a government that’s helping you, we’re running into a wall. And they’ve built the wall even though they give us money to get over that wall, they’re building it higher (J. binner).*

Second, is the tension with the BC Employment and Assistance Office (Welfare Office) which is run by the Provincial Government through the Ministry of Social Development and Social Innovation. This tension is caused majorly due to the cut-backs on social assistance and welfare restructuring which most bidders depend on. Different regimes have increasingly cut down these benefits over the last few decades, particularly in the year 1990 and 2002 (BC Commentary, 2003). This has been a major challenge for bidders, majority of which are unemployed. As revealed by the survey, about half of the sampled population reported claimed to be unemployed, 26 percent occasionally unemployed, and only less than 30 percent reported being employed either full time or part time (see figure 1). Yet, a limit is placed on how much these individuals can make monthly. According to the bidders,

*The welfare office makes it exceptionally difficult for bidders because they cut you off your check if you make too much money bidding. So that's why a lot of people don't want to be on staff with the Bidders' Project. That's basically one of our major challenges (J. bidder).*

*They scare the shit out of us. I could make about a \$1000 a month but a guy on regular is just allowed to make \$200 above their cheque. Anything they make over that comes off your check dollar for dollar (M. bidder).*

Third, is the tension with private companies. The literature has reported conflict between private companies and bidders as a common occurrence as the former exercise property rights and claim ownership to discarded materials (Jomit, 2009; Velis 2012; Binion, 2012).

Our respondents (bidders) did not agree differently:

*They (private companies) laugh at us... they don't even want to talk to us. We're they're their biggest pain in the ass because we are a competition. They don't give a shit about anything... But they cut into their bottom line and they make more money by giving people fines for fucking it up (M. & J. bidders).*

Fourth, is the tension with bottle depots. Bottle depots are hotspots for getting refund deposits on every container returned. Usually, whenever bidders return recovered materials to the bottle depots, containers are hand-counted and then the returnee is compensated with the deposit value of the total number of containers returned. But Canadian bottle depots including UWC depot have recently adopted the automated counting technology after it was successfully piloted in Alberta, in 2012 ("CM consulting", n.d.). Although the hand-counting method has been proven to be inaccurate for verification process (MGM Management, NorthWays Consulting, and CM Consulting, 2011), bidders were grossly displeased with it. In their words:

*Sometimes you don't get what it's worth in the first place. A lot of times, doing it this way, they can scam you here and there and you won't even notice that you're being scammed... I've talked to bidders that say hey man, I've been screwed every time I go there... I know how many cans of bottle I have (J. Bidder).*

*In time past, they would hand count it in front of you. But now you push the carts in and the guy whips through it, estimates and then punches it in, you don't know what he's missed. And you loose on everything he misses (M. Bidder).*

Although bidders may be right in their observations, it is less likely for the pay studs to be inaccurate since they are automatic and as a matter of fact, time-saving. However, bidders' perceptions about the system could be due to the fact they have a low level of trust in the system. This trait (low level of trust) is not uncommon among socially excluded populations (Beresneviciute, 2003).

#### **4.5.1.4 Drug addiction/dealership and homelessness**

Bidders in the DTES have been characterized as agents of 'urban disorder' as drug addiction and dealership has been observed as a predominant activity among these individuals (Wittner and Parizeau, 2016). These activities are suspected to be a major cause of the recurrent violence among marginalized individuals within the area (Small et al., 2013). However, the prevalence of these activities has blurred the roles that other social, political and economic forces play in shaping these problems (Bourgois et al., 2004; cited in Small et al., 2013, p. 480). According to the Manager of the UWC depot,

*...frankly, honestly, another kind of unique thing with serving a bidder population is that we realize that most of them have either a physical, mental or an addictive challenge (J. Manager, United We Can Bottle Depot).*

According to the Manager of the Bidders' Project,

*There's so many challenges with keeping bidders engaged... we don't ever forget that they are a marginalized community, often you know... when you don't have a*

*secure housing, similarly like addictions or mental health or physical health like disabilities (G. Manager, Bidders' Project).*

Despite the prevalence of this activity, it would be hasty and unfair to label all bidders as drug addicts. Also, contrary to a study that claim that bidders are mostly immigrants or indigenous people (Medina, 2001), survey results revealed that bidders today were mostly of Caucasian ancestry (42.4 percent) with only about 29 percent reporting as indigenous persons, similar to Tremblay's (2007) findings. Also, survey results show that only a few bidders reported having disability, but bidders' lived experiences as narrated during photovoice discussions reveal that there is an overgeneralization and misrepresentation of these individuals as drug addicts. As bidders noted with expressions of misery,

*You know this is the biggest problem... and most of the drug addiction doesn't even come from bidders. It's not the bidders that are doing that. These guys (bidders) are out pushing their carts all day. They probably party at night after that, but during the day, they are bidding. it's funny because a lot of our bidders are not drug addicts.*

They further noted that,

*But we've got lots of people that have their own share of problems, but we're not the guy sitting in the alley cranking up. But we are all painted under that brush. And when you walk down the alley, with your carts, it doesn't matter if it's full or not. You're a drug addict asshole. And people will tell you that all day – get out of my f\*\*king alley, you drug addicted piece of shit or crank head or loser. You're*

*stealing everything out of my cart... how can we trust in you... you're all the same.*

*I hear these regularly (binners).*

Although, not adequately captured due to deficiencies in the survey questioning, homelessness remains a major challenge faced by the binning community due to the deprivation of rights to access to recyclable materials – their major source of income. Bidders attributed the increase in homelessness to the locked bins:

*This (homelessness) is where binning ends up (see figure 12). These guys are trying to bin and everything is locked up and they can't even afford a home and they end up living right beside your garbage... The government of Vancouver has been working on this for years. They've been promising no more homelessness in the last three years and now it's worse.*



Asides the reduced access to these communal resources (recyclable materials), welfare restructuring, unemployment, and low income that characterize the binning community, the hike in the rate of homelessness can as well be attributed to the exponential increase in rent,

and “renoviction” caused by the gentrification of the DTES (Burnett, 2014; Smith, 2003; Miewald and Ostry, 2014). And truly, according to Ken Lyotier (founder of United We Can) in an interview with CBC News (2006), “when you have 2,000 homeless people on your street, we've got a big problem...and locking down the dumpsters isn't going to make that go away”.

## **4.5.2 ROLES OF GRASSROOTS SOCIAL INNOVATION**

### **4.5.2.1 Organization and professionalization**

Due to the numerous socio-economic challenges faced by binners, stakeholders usually have difficulty in collaborating or partnering with binners individually. Instead, they go through the Binners’ Project which acts as a representative for the group. In an interview with the two City Government Officials, they both noted that:

*...without an organization like the Binners’ Project, the challenge with working with binners is very disjointed. So if you want to communicate with their group that’s not with the Binners’ Project, it’s pretty hard to target; pretty hard to pass out any communication to the group... with the Binners’ Project, there’s an opportunity with their organization of that community... so it certainly makes sharing, consulting and collaborating with the community much easier (City Government Officials).*

Encorp Pacific Manager also added that:

*...the challenge is if there isn't a Bidders' Project, it's very difficult for us to work directly with the community (S.F. Encorp Pacific).*

The above statements show that the Bidders' Project, therefore, plays the role of an advocate/intermediary between the bidders and the various stakeholders. This is quintessential to the diffusion benefit of grassroots innovations (Seyfang and Smith, 2007).

Additionally, as part of the professionalization agenda of the Bidders' Project, the organization fosters *power with* at the collective level by providing a means of identification such as identity (I.D) cards and uniforms such as hoodies, t-shirts and hats with their logo crested thereon. This has helped in distinguishing bidders as professional informal recycler and part of a formal organization. In other words, the uniforms and I.D cards helps to portray bidders in a professional manner. This initiative was recommended by Gutberlet (2008) in her book titled *Recovering Resources – Recycling Citizenship*. The Bidders' Project also hold regular weekly meetings on Tuesday evenings with bidders, as one of the initiatives developed to build bidders' capacity. As noted by the manager of the Bidders' Project,

*And so, the way the programs are shaped is that we have our weekly meetings which is the bidders' chance to be in touch with one another and keep up with updates (G. Manager, Bidders' Project).*

During these meetings, initiatives are developed based on bidders' contributions and suggestions and decisions are also made democratically. This helps to foster *power from within* and *power with*, thus, enhancing social inclusion, creating a sense of belonging and the

impression that their ideas are valid and valuable. In an interview with a City Government Official, he noted:

*...what I think is really good about the evolution of the Bidders' Project is that as they've reached critical mass, you know, with well over 100 regular participating bidders, they've created a uniform you know that if all bidders are at least wearing that t-shirt or that cap or whatever, that shows that there's a united front army. That's just an analogy (S.F. Encorp Pacific).*

According to one of the bidders,

*Because eventually the Bidders' Project is gonna get bigger and could become a union like we work like a union, in the way we hold our meetings and stuffs like that, so I can see the Bidders' Project become like a garbage union in the future" (M. bidder).*

#### **4.5.2.2 Awareness and destigmatization**

Public awareness has been recommended by several scholars as a means to destigmatize binning (Sovani, 2009; Lamont, 2018) and therefore, leading to empowerment. Increasing public awareness and destigmatization of bidders is one of the core objectives of the Bidders' Project and also one of the diffusion benefits of such grassroots organization (Seyfang and Smith, 2007). This has been and is still being achieved through public campaigns, public engagement (e. g. booths) or waste recycling education at events. Another interesting initiative adopted by the staff of the Bidders' Project is the selection of bidders to speak about

their work at various platforms. This is a great avenue through which the Binners' Projects empowers and develops the skills of its members, thus, boosting their self-worth and self-confidence (*power from within*). According to the manager of the project, binners are usually "...at the fore front of activities; so we send them to panels and conferences, to talk about and destigmatize the overall work of binners" (G. BP). Some of the binners also confirmed, noting that:

*The Binners' Project is the only opportunity that we've had to voice this opinion to people... they've advanced us a lot and bringing our plate to the public has helped us immensely (Binners).*

Asides public education, destigmatization of binning has also been significantly aided through the provision of uniforms and identity cards for binners. According to another interviewee,

*I think that's the big opportunity because I think professionalizing binning is the easiest route to overcoming the negative perceptions that binning has among some residents" (S.F. Encorp Pacific).*

#### **4.5.2.3 Training and skill development**

Over the years, due to intensive awareness campaigns by the Binners' Project and the collective use of various politics of recognition (*power with*), there has been an increase in the level of binners' participation in municipal recycling and also collaboration to sort waste at events. Undeniably, some level of skills and training are required for optimum performance in not only these roles but also in the successful implementation of the initiatives that are being

developed by the Bidders' Project such as the waste sorting program. The management of the Bidders' Project has therefore made capacity building of project members a core priority as it helps to empower bidders and boost their recognition in the view of the City Government Officials. According to the manager of the Bidders' Project,

*So essentially, bidders go through levels of training with us, and it involves like soft skills building, like leaning how to interact with clients... we have, like a sorting training, and that's teaching the bidders how to sort the waste into the proper bins... We have training on how to represent themselves in the public, all about our social media and how we communicate about our work online... We also try to look out for a lot of workshops in the neighborhood that we can send bidders to*

By building bidders' capacity (*power to*) through trainings and workshops, their self-confidence and self-worth (*power from within*) is boosted, thus, they gain a lot of respects from clients.

*On both sides, the bidders are so full of pride; they have their uniform, they know they're gonna be making this amount of income. It's so meaningful, and also the client treats them with a lot of respect because it's a big service (G. Manager, Bidders' Project).*

Bidders' leadership skills are also built as they are given the opportunity to take on leadership roles such as leading public education on waste recycling and also being invited to meetings with stakeholder such as the City government.

*...the way we kind of structure our organization is having bidders supervising other bidders on site like when we go to events and stuff, so that's one way people grow*

*their capacities in more way... and if our organisers are interested in public waste education, we have binners at the fore-front teaching people how to sort their waste (G. Manager, Bidders' Project).*

#### **4.5.2.4 Improve social inclusion and economic opportunities**

Although capacity building is imperative for the empowerment of disadvantaged groups, but without the availability of jobs and other economic opportunities with which acquired skills can be utilized, empowerment is unattainable (Morgan, 2016). Creating economic opportunities for binners to make extra income is the major priority of the Bidders' Project and of course, it is also the main reason they have reached such a critical mass of binners. To create more such opportunities, the Bidders' Project has developed a number of initiatives such as the Pick-Up program, Waste Sorting, Bidders Hook, Event Waste Education, the Coffee Cup Revolution. They also ensure that binners are paid adequately for the service they provide. According to the manager of the Bidders' Project,

*...one of our programs is a pick-up program. It's really simple – binners are able to get matched with local business and they come by maybe once a week, once a month till they collect all their bottles and cans (G. Manager, Bidders' Project).*

*I've followed binners spending 3-4 hours binning and making \$5. So that's so low, like it's not value in their time. But they are doing a huge service like in cleaning up our streets. So, yeah, Bidders' Project is just trying to kinda raise that bar for what they get paid (G. Manager, Bidders' Project).*

A binner also noted that:

*Part of it too is that Anna and Gabby didn't want us thinking that our time was worth nothing and they were very adamant that look if you're gonna do this, get paid for it (M. binner).*

As the project grows and more binners join the project, binners get hired to join the staff either part-time or full-time. Currently, there is one binner at the managerial level with a few others employed part-time. The staffs are usually in a constant look out for opportunities as well as grants to fund the project.

*More and more binners are coming unto our staff team and getting paid an hourly wage and getting their pay check every two weeks (G. Manager, Bidders' Project).*

Furthermore, prior to the establishment of the Bidders' Project, binners suffered a great deal of stigmatization due to their socio-economic characteristics of being mostly individuals who suffer from drug addiction and homelessness leading to social exclusion. This has, perhaps been reinforced due to the stigma associated with binners digging through waste and clambering around in dumpsters. One of the major accomplishments of the Bidders' Project is improving/increasing social inclusion of binners, thereby, fostering *power with* through collective action. According to the manager of the Bidders' Project, the organization was established based on the desire "to see more social connectivity between binners" (G. BP).

One of the City Government Officials commented that:

*...they've made a tremendous progress in creating a culture of inclusion and participation among the binners which I think is very important (S.F. Encorp Pacific).*

### **4.5.3 CHALLENGES AFFECTING GRASSROOTS INNOVATIONS**

#### **4.5.3.1 Access to funding**

Just like every other grassroots organization, securing funding is a common challenge which is usually encountered the most during its inoculation phase (after start-up) (Seyfang and Smith, 2007; Martin et al., 2015; Grab et al., 2015). This could be attributed to a lack of track record of success of these organizations which causes wariness of funding organizations in supporting these innovations. Fund seeking is considered one of the most important priorities of these organizations as innovations require funding for their development, implementation and also to ensure members/volunteers are adequately remunerated. The challenge with grant seeking is that requirements are often imposed by funding bodies coupled with constraining targets, and funding is usually short-term and in they come in cycles. Meeting these requirements becomes more complex and problematic when there are multiple funders (Seyfang and Smith, 2007). According to the manager of the Binners' Project,

*It's always about the funding. It's always about do we have enough funding to keep our services going? And so a big chunk of our time is dedicated to finding new sources of revenue. And that can be really hard when you just want to focus on the actual work (G. Manager, Binners' Project).*

The time-consuming nature of fund seeking is clearly revealed in the statement above. As confirmed by Church (2005) and Wakeman (2005), grassroots organizations spend most of their time 'surviving' by searching and applying for grants while only a minute portion of their time is spent developing innovations.

#### **4.5.3.2.       Scaling up**

During the inoculation phase, grassroots organizations are typically locally based and small-scale which makes scaling up difficult. Although scaling-up can be influenced by the availability of funding, policy issues, and willingness to accept innovations which are considered as 'alternatives to the mainstream' (Sefyang and Smith, 2007; Truffer et al., 2002), the major challenge faced in this regards by the Binners' project is related to the precarious nature of its members, most of which suffer from mental health issues and homelessness. According to the manager of the group,

*What we're interested in is how, so we scale our work? There's so many challenges with keeping binners engaged... we don't ever forget that they are marginalized community, facing housing problems, addictions or mental health or physical health like disabilities. Like you know we have event organizers that are so excited about working with us, and it's always a reminder to them too. It's like, this is what you're signing up for... it's like hiring... giving a chance to people that are marginalized. But it does come with it's associated risks (G. Manager, Binners' Project).*

In response to these coercive pressures, studies have shown that grassroots innovations tend to focus on building their organizational capacity to identify and utilize economic opportunities, mobilize resources, maintain relationships with external stakeholders, and make significant impacts in the wider society which makes grassroots innovations to become commercially-oriented overtime (Smith, 2000). According to a City Government Official,

*Now that the Bidders' Project is in place, ... they are becoming a much more commercial enterprise with specific project ideas (S.F. Encorp Pacific).*

Although the above statement was viewed in a positive light, the tendencies for grassroots innovations such as the Bidders' Project to become commercially oriented is problematic due to the likelihood of displacements of the organizations' primary goals of empowerment and social change, towards effectiveness and efficiency and revenue generation (Smith 2000; cited in Martin et al., 2015).

#### **4.6 CONCLUSION AND FINAL CONSIDERATIONS**

In this paper, I used Mitchell and Heynen's (2009) concept of the geographies of survival as a lens to examine the challenges the informal recycling sector is facing in Vancouver, particularly applied to waste management, waste recovery and the role of grassroots innovations in improving survival strategies to the bidders. Challenges bidders face reveal arduous pathways, since most bidders have to navigate on a daily basis in order to survive. The challenges include reduced access to recyclable materials due to locked bins; drug addiction and homelessness;

occupational health hazards and improper garbage disposal practices; and tensions with the City government, private companies, and bottle depots.

Geographies of survival also help to explore issues around denial of fundamental rights. As we have shown, by locking dumpsters, binners are deprived of fundamental rights to access resources, including food, clothing and recyclable materials, which are the main means of their livelihood and survival. Lest we forget, the majority of this population earns less than 20 dollars per day. In fact, binners are not only just denied the right to access recyclable materials, they are also denied rights to earn certain amount of money in a month. This restriction to certain income level by the welfare office was revealed as another major challenge for binners that received social assistance. What about the right to affordable housing? As we have shown, due to increasing gentrification resulting from capitalist and neoliberal politics, the DTES of Vancouver can be regarded as the *home of the homeless*, the majority of which are binners. Binners also noted that little is being done to end the opioid crisis which is quintessential of the DTES Vancouver. Additionally, the deprivation of rights and the claim of ownership to recyclable materials through the locking of dumpsters and criminalization of curbside recycling could be as a result of the perception of the City government as well as the private companies who see binners as individuals who lack skills to deal with these materials. Hence, there is a need for empowerment.

We indicated that the first step to improving the soothing and enhancing the survival strategies of binners is through empowerment. The dimensions and levels of empowerment were also presented in this paper, with an argument that empowerment begins at the individual level, through a reciprocal causal relationship between capacity building (*power to*)

and creating self-awareness, improving self-worth and self-confidence (*power from within*). It is, however, important to note here that empowerment is a dynamic and contested phenomenon (Moore, 2001; Starkey, 2003). For example, still based on this study's findings, one may argue that empowerment begins at the collective level based on the collective training sessions being held for binners by the Bidders' Project. However, the rate of learning or skill accumulation varies from person to person. Moreover, enhanced learning and understanding happens independently. As such, I posit that empowerment begins at the individual level. We also showed the occurrence and effects of these reciprocal causations at other levels of empowerment, thus, creating a vicious cycle.

More importantly, grassroots innovations such as the Bidders' Project play a critical role in empowering binners through training and skill development; building public awareness and destigmatization; the organization and professionalization of binning through the provision of means of identification; improving social inclusion and creating economic opportunities. These empowerment strategies enable binners to take charge of their lives, actively participate in innovations developed within its niche, make significant impact in the society, and challenge neoliberal policies and urban inequalities through covert forms of resistance and politics of recognition (Allard & Matthaei, 2008; Arruda, 2008). But the process of empowerment is capital intensive. Hence, a critical challenge for grassroots innovations is the need to constantly seek out funding which is sometimes at the detriment of the key goals of the organization.

Lastly, being quite aware that resource recovery is one of the major survival strategies of binners, and drawing from Cave's argument that "municipal authorities have the responsibility

to cope with garbage, they do not own garbage” (2012, p. 11), we recommend that rather than focusing on efforts to claim absolute ownership to recyclable materials and rob binners of the rights to these materials, the city of Vancouver could pay more attention to weightier matters whose environmental effects are even more detrimental but elusive. These include indiscriminate and improper discarding of cigarette buds, reducing consumer packaging, and other underrated environmental pollutants such as noise. As binners stated lamentingly:

*Vancouver can talk about how green they are but in actual fact they are not even close, because they are not willing to go out and enforce these laws... that promote a green society. They tell us that littering is a crime but you'll see that there's all [cigarette] buds all over from here to thousands to millions of buds all over. And it's almost like an acceptable litter but if I threw a candy wrapper on the ground I'll be scrutinized. Everyone would be like oh my god did you just throw a paper bag there? (j. binner)*

The refund system should also have included other materials that are not currently being included as this will open opportunities for binners to make more money while diverting more materials from the landfill. Additionally, based on the above statements by binners, and also considering that improper recycling practices were claimed to pose a threat to their day-to-day survival due to material contamination, occupational hazards resulting from having to dig through bins containing inappropriate contents, there is huge need for public education and awareness on not just proper waste disposal practices, but also highlighting the detrimental consequences to the environment and binners alike. Relevant and appropriate by-laws on municipal waste disposal and recycling should be developed with binners consulted, and their

suggestions taken into consideration while making decisions. Lastly, due to the on-going process of capacity building by the Binners' Project, binners have acquired skills that are invaluable also for overall municipal waste management. All arguments presented in this paper reiterate the need for a more inclusive and participatory waste governance.

## 5. CONCLUSION

Drawing from the results presented in chapter three and four, this section brings together the key findings in this research. It then proceeds to highlight some recommendations, and limitations and avenues for further research.

### 5.1 Main findings

The research on waste governance in Vancouver confirms that binners are actively involved in service delivery, particularly during city-wide events. Likewise, although quite indistinct, there exists some level of participation in decision-making on policies such as the Single-Use Item Reduction Strategy, but there is no clear evidence of their inclusion in decision-making on the City's recycling bylaw. These indicate that binners' participation in both service delivery and decision-making is largely dependent on the goals and objectives (governmental rationalities) of the City, which are accomplished through technologies of agency and technologies of performance (Bulkeley et al., 2007).

Technologies of agency, as (Bulkeley et al., 2007) argue, seek to "invoke particular subjects and their participation in processes of governing (*such as service delivery and decision-making*), and include different forms of participation and partnership (*be it nominal, instrumental, representative or transformative*) ... through which action is created and sustained" (p. 2737). In Vancouver, binners' participation in both service delivery and decision-making is, therefore, a means by which binners' possibilities of agency are deployed and enhanced by the City while ensuring the attainment of its goals and objectives through

technologies of performance. Technologies of performance, which is more manifest in binners' participation in service delivery, involves the signing of contracts (with the Binners' Project) to manage waste at various events, target setting, compliance monitoring and performance optimization (Bulkeley et al., 2007). Technology of performance, thus, serve as a tool for conducting the conducts of invitees, ensuring trustworthiness and boosting efficiency while fostering agency. The "conduct of conduct" is a central element in the governmentality discourse (Foucault 1991, p. 103), and is quite evident in the various modes through which binners' participation is shaped, guided and also affected.

The lack of participation of binners in the decision-making over policies that directly affect them have created serious negative impacts on the binners' livelihoods. As highlighted in the recycling bylaw, the locking of dumpsters is one of the major challenges encountered by binners, being one of their most patronised source of recyclable materials after the blue box. Although the law mandating the locking of dumpsters was established a few years ago and has had overwhelming impacts on the survival of binners, quite surprising was the prohibition of material collection from the blue box in the recent bylaw. This is despite the acknowledgement of the critical role played by binners in boosting the recovery rates of these materials by the CEO of Encorp Pacific and even the City Government Officials themselves. Nevertheless, binners' active participation in one of the decision-making processes (the Single-Use Item Reduction Strategy) suggests the willingness of the City government to broaden binners' engagement.

Furthermore, as revealed in the study, exclusion of binners in decision-making on the recycling bylaw deprives them of the rights to access recyclable materials on which most of them rely,

which thus, to a great extent, threatens their overall survival. Deprivation of rights to access recyclables, through the mandatory locking of dumpsters, was reported to have resulted in increased intra-competition among binners, increased cases of poor recycling practices at multi-family dwellings, and lack of access to food, clothing and other resources with which they survive. These conditions, among other factors, could be predicted to have contributed to the increased cases of homelessness and drug use as a coping mechanism. As a countermeasure to address this crisis, binners reported turning to create their own invented spaces through different forms of resistance. We identified two kinds of resistance which are the declared and the cover/undeclared. The latter were often adopted by the binners themselves through the forceful opening of bins and purposeful littering of surrounding bins. Unfortunately, these form of resistance of little or no benefit to the binning community because injuries are likely to occur as a result of attempts to forcefully access bins. Also, purposefully littering is bound to worsen the marginalization and stigmatization that binners encounter from residents.

On the other hand, however, the Binners' Project, with its ultimate goal to empower binners, uses the subtler forms of resistance (covert/undeclared) also regarded as politics of recognition. One of such means is the provision of means of identification such as uniforms, badges and ID cards, all of which were usually put on during public events. Other strategies/initiatives being run by the Binners' Project such as the Coffee Cup Revolution, where thousands of disposable coffee cups are increasingly being recovered every year within four hours, has also been adopted as a strategy to boost recognition in the sight of the City government, other stakeholders as well as residents. What's more? As earlier mentioned, the

wariness and skepticism of the City government in embracing a transformative participatory waste governance could be due to binners' lack of adequate skills required to meet expectations of the government as well as the wider society. Thus, as a solution to this challenge, the Bidders' Project has been deeply committed to binners' capacity building, and we argued that this is the first step to empowerment. The Bidders' Project has, therefore, significantly empowered binners to not only meet required expectations but also to take charge of their lives by identifying and taking advantage of opportunities as they present themselves, particularly through training, skill development, organizing binners and professionalizing binning. All of these initiatives, which were developed by the group within its niche, are largely representative of the various dimensions and levels of influence of empowerment, as shown in figure 1.

## **5.2 Recommendations**

- Expand Bidders Participation in Municipal Waste Management

Since binners' capacity is continually being advanced by the Bidders' Project, thereby gaining relevant skills to function effectively in municipal recycling, there is opportunity for the City government (engineering department) to further engage binners in the waste management system, so that they can work harmoniously with private companies. Binners could also be employed and assigned to monitor and ensure proper recycling at high-pedestrian areas and also the cleanliness of the streets. After all, the problem is not merely enabling people to participate, but ensuring that they participate in the right way (White, 1996).

- Consult Bidders in Waste-Related Decision-Making

The need for bidders' participation in waste-related decision-making processes cannot be overemphasized. As shown in this study, exclusion of bidders from such decisions has a lot of downsides. Revisiting the City's recycling bylaw, with bidders' representatives invited to the table is, hereby, recommended. This will give room for negotiation and dialogue on how to effectively manage bidders' freedom of access to these life-saving resources.

- Collaboration between Encorp Pacific and the City Government

Since Encorp Pacific answers directly to the Ministry of Environment and Climate Change, the level of collaboration with the City government is unclear. This is evident in the result of this study, which shows a conflicting interest in the materials/items they want bidders to collect. While Encorp Pacific was interested in bidders collecting beverage containers from bins in high pedestrian areas, the City government expressed interested in bidders collecting glass bottles from the blue box, even though the recycling bylaw stated differently. Working together collaboratively will create a win-win scenario. For example, considering that the United We Can depot is a partner of Encorp Pacific, by allowing bidders to collect recyclable materials from the blue box, the City's recovery rates will be significantly boosted. A win-win scenario is created here because the City gets a reputation for an increased recovery rate while Encorp Pacific receives the credit for the recovery of these materials.

- Increase Refund Deposits

Since the Government of British Columbia is currently considering to increase the current deposit refund system and include other materials that were not included previously such as milk and milk substitutes, putting more deposit on glass bottles may be more beneficial to binners considering their weight; also because they are currently of the same value as other beverage containers such as gable top and plastic bottles. However, prices of recyclable materials are usually inconstant as they fluctuate depending on market conditions (Zero Waste Scotland, 2017). This makes the informal recycling sector even more vulnerable. Notwithstanding, raising the value of refund deposits can increase binners' social capital and the diversion rates of these materials. Moreover, Ashenmiller (2010) cautions that raising the deposit refund fee too high may render the process ineffective altogether. A cost-benefit analysis is, therefore, necessary to identify the possible impact of increasing the deposits on each material. This will help determine the best approach.

- Modify the Social Assistance Regulations

Due to the generally low income earned by the binning community, it is, therefore, expedient that the welfare office encourages binners – particularly members of the Binners' Project – to earn as much as they possibly can rather than restricting them to a certain amount that is barely sufficient for their monthly expenses. To achieve this, the policy on social assistance needs to be revisited, also with the Binners' Project at the table. This will help to significantly improve their quality of life, by having greater access to economic resources.

### **5.3 Limitations and avenues for future research**

While this thesis contributes significantly to the current body of literature on informal recycling in Canada and the roles of grassroots organizations in promoting informal recycling and improving binners' quality of life, the results should be considered in the light of some limitations which could serve as opportunities for future studies as highlighted below.

First of all, although a reference point for emerging grassroots organizations and future studies, results of this study cannot be generalized due to the limitations of the case-study approach and also because the conditions may differ regionally. I acknowledge that there are several other grassroots organizations working with binners in Canada each having particular challenges and thus, developing location-specific innovations to solve these problems. There is, therefore, a need for additional case studies to enhance the transferability of the results. To enhance the transferability of this study, I planned to include an additional case study site (the city of Montreal) in this research, but efforts were thwarted by some challenges encountered during the data collection phase. These include distance and language barrier, and lack of response from relevant stakeholders.

Furthermore, due to time constraints, binners (co-researchers) were not involved in developing the research questions, data analysis and the thesis write-up. They were also not involved in developing the survey questions, even though they participated in revising the questions during the survey training. Moreover, binners from an Asian background who participated in the surveys were not involved in the photovoice due to language, time, and financial constraints. Considering the need to involve co-researchers throughout the research process, which is the essence of a community-based approach as adopted in this research,

tendencies for excluding co-researchers some aspect of the research process reveals the downsides to such a participatory research approach.

Lastly, data was collected during the summer season, which is the busiest season for binners due to the suitable weather conditions. I consider this a limitation because there are no data on how much binners earn in other seasons of the year. It will, therefore, be interesting to know and compare how much they can earn during colder seasons when the weather is less favourable to be out collecting recyclable materials. Also, it will be helpful to investigate resident's perceptions of not only binners but also the grassroots organizations.

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## APPENDICES

### APPENDIX 1: BINNERS QUESTIONNAIRE



**University  
of Victoria**

PARTICIPANT CONSENT FORM

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#### MAPPING WASTE GOVERNANCE IN RELATION TO THE INFORMAL RECYCLING SECTOR

You are hereby invited to participate in a study titled *Mapping Waste Governance in Relation to the Informal Recycling Sector*. My name is Dare Sholanke, I am a Masters of Arts student in the Department of Geography at the University of Victoria. This study is being conducted under the supervision of Dr. Jutta Gutberlet, Professor in the Department of Geography and Dr. Crystal Tremblay (committee member), Assistant Professor in the Department of Geography.

#### RESEARCH OBJECTIVES AND BENEFITS

This study is aimed at the understanding how through policy making, political actors affect waste recovery and the level of inclusiveness in the waste management system in Vancouver and Montreal. The study will also investigate the role of grassroots social innovations in improving the livelihoods of bidders. Results from this research will help inform authorities, policy makers and practitioners on the need for an inclusive waste management system and will provide strategies for improving the livelihoods of bidders while promoting sustainability in the city.

#### VOLUNTARY PARTICIPATION

You are being enjoined to participate in this study because you are a bidder in Vancouver. By consenting to participate in this study, I would request that you answer a brief survey, which should take a maximum of 15 minutes to complete. All responses will be treated confidentially and anonymous for security reasons. All data will be destroyed after the completion of the research (anticipated end date is April 2019). If you decide to participate, you may withdraw at any time without any consequences or explanations.

#### RISKS

There is no likelihood of exposure to any form of risk(s) to by participating in this research. If you experience any form of stress or anxiety regarding the subject content, I can provide you with educational information on the subject following the survey and will provide you with additional resources if you wish.

#### RESULTS

The results of this research will be contained in a publicly accessible thesis, which may be obtained by contacting the university of Victoria. Results will also be disseminated through

presentations at scholarly meetings, conferences, published article, chapter or book. Results will **not** be used for any purpose other than this research project. You may provide me with your email address if you wish to be informed of the result of this study, and I will send you a summary at the end of the study. Please feel free to contact me or my supervisors if you have any further questions regarding the research.

#### CONTACT INFORMATION

Principal Researcher:	Dare Sholanke	email: <a href="mailto:sholanked@uvic.ca">sholanked@uvic.ca</a>
Academic Supervisor:	Jutta Gutberlet	email: <a href="mailto:gutber@uvic.ca">gutber@uvic.ca</a>
Academic Co-Supervisor:	Crystal Tremblay	email: <a href="mailto:crystalt@uvic.ca">crystalt@uvic.ca</a>

You may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or [ethics@uvic.ca](mailto:ethics@uvic.ca), protocol number 17-193). By completing this survey, **YOUR FREE AND INFORMED CONSENT IS IMPLIED**, which indicates that you understand the above conditions of participation in this study and that you have clarified any doubt(s) with the researcher(s).

*Please retain a copy of this letter of consent for your reference.*

**MAPPING WASTE GOVERNANCE IN RELATION TO THE INFORMAL RECYCLING  
SECTOR (BINNERS SURVEY)**

**SECTION A: DEMOGRAPHIC**

**1. How long have you been binning?**

- Less than 1 year
- 1-3 years
- 3-5 years
- 5-10 years
- Over 10 years

**2. What gender do you identify as?**

- Female
- Male
- Other, please specify... \_\_\_\_\_

**3. What is your age?**

- Under 18
- 18-34 years
- 35-54 years
- 55-64 years
- Above 65

**4. Are you:**

- White
- First Nations/Metis/Inuit/Indigenous
- Hispanic/Latino
- Black/African American
- Asian/Pacific Islander
- Other, please specify... \_\_\_\_\_

**5. What is your marital status?**

- Single

- Married
- Other, please specify... \_\_\_\_\_

**6. How many dependents do you have?**

- None
- Please specify... \_\_\_\_\_

**7. What is your highest level of education?**

- University
- College
- High school
- Primary school
- Other, please specify... \_\_\_\_\_

**8. Are you employed?**

- Full time
- Part time
- Occasionally
- No

**SECTION B: SOCIO ECONOMIC INDICATORS**

**9. What is your current housing situation?**

- Own
- Co-operative housing
- Single Room Occupancy (SRO)
- Temporary housing
- Staying at friends/couch surfing
- Shelter
- Emergency shelter
- Outside
- Other, please specify... \_\_\_\_\_

**10. On average, how many hours do you spend binning per day?**

- less than 1

- between 2-4
- between 4-6
- between 6-8
- more than 8
- I don't know
- Other, please specify... \_\_\_\_\_

**11. On average, what is your daily income from binning?**

- Under \$20
- Under \$50
- \$50-\$100
- Over \$100
- I don't know
- Other, please specify... \_\_\_\_\_

**12. Do you have any disability?**

- Yes
- No
- If yes, please specify... \_\_\_\_\_

**13. Do you receive government social assistance?**

- Yes
- No
- Other, please specify... \_\_\_\_\_

**14. What is your average daily spending? (e.g. food, shelter, travel, medication)**

**15. Do you have working partnerships with other binners?**

- Yes
- No
- Sometimes

**16. How many binners do you know who have been injured while binning? Please can you tell us about them.**

**17. Do you experience conflict while binning?**

- Yes
- No
- Sometimes

**18. If Yes, can you elaborate?**

**19. Have you heard of any binners organizations?**

- Yes
- No

**20. Are you part of an organized binners group?**

- Yes
- No

**21. Have you been invited to participate in binners initiatives?**

- Yes
- No

**22. What is your level of participation in the binners initiatives?**

- Very active
- Active
- Not sure
- Not involed

**23. Have you felt discriminated or harassed in the previous 12 months?**

- Yes
- No

24. Can you tell us about it?

**25. What is your experience with the authorities? (e.g. by-law enforcement officers)**

- Positive
- Negative
- Other, please specify... \_\_\_\_\_

**26. How might the Binners' Project improve your work?**

**27. What mode of transportation do you use for binning?**

- By foot
- Bicycle

- Trailer
- Bus
- Carts
- Vehicle
- Other, please specify... \_\_\_\_\_

**SECTION C: HEALTH INDICATORS**

**28. What are your health risks related to collecting recyclable materials?**

- Cuts
- Physical soreness
- Infections
- Other, please specify... \_\_\_\_\_

**29. Do you use gloves when binning?**

- Yes
- No
- Sometimes

**30. If No, why?**

**31. Where do you seek health/medical support?**

- Walk-in clinic
- Shelters
- Hospital
- Personal medical doctor
- Other, please specify... \_\_\_\_\_

**32. Has your health improved since you joined the Binners' Project?**

- Yes
- No
- I don't know

**33. If Yes, in what ways has it improved?**

**SECTION D: ENVIRONMENTAL INDICATORS**



- No
- I don't know

## **APPENDIX 2: INTERVIEW QUESTIONS**

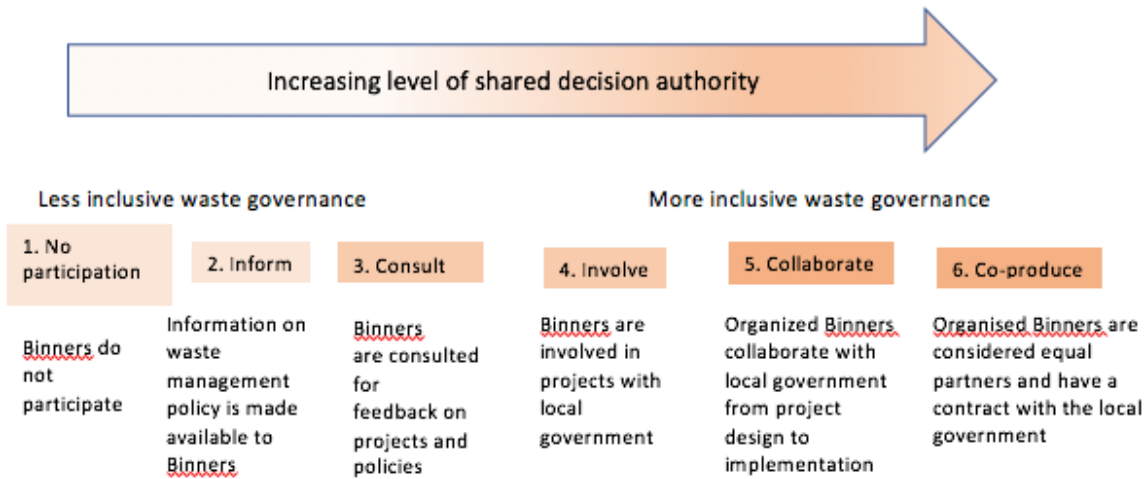
### **I. Bidders' Project Managers**

1. When and how was the Bidders' Project established?
2. What major roles do you play as leader in this initiative?
3. Who are the main actors involved in the waste/recycling system flow in your city?
4. How are you funded?
5. Has there been any formal or informal education or training for bidders? When?
6. What is the participation rate by gender of bidders in this project?
7. Does the Bidders' Project engage in networking with similar organizations? If so, describe.
8. Are there policies/guidelines that encourage municipalities to partner with bidders groups?
9. Are there frameworks (formal or informal) in place to promote, enforce and monitor equity and non-discrimination of binning (and on the basis of gender)?
10. How would you describe 'grassroots social innovation'?
11. Can you provide examples of 'grassroots social innovation' in relation to binning?
12. What are the conditions that fosters these innovations?
13. Can you elaborate on the internal and external factors (including policies) that have helped develop these social innovations?
14. Can you elaborate on the key challenges to these social innovations and how they have been overcome?
15. Is there anything else that you would like to say?

### **II. Local and provincial government and *Encorp Pacific***

1. How long have you worked in this position? Manager
2. What role does your organization play in relation to recycling activities?
3. What are the key stakeholders in municipal solid waste management?
4. What role do bidders play in the municipal solid waste management?
5. Are you aware of any grassroots initiatives involving bidders in waste management or recycling?
6. What is your involvement to these grassroots initiatives?
7. What are the key challenges and opportunities in working with bidders?
8. Can you describe the decision-making process related to municipal recycling?
9. What are the mechanisms for their involvement?
10. Are there frameworks in place to promote, enforce and monitor equity and non-discrimination of bidders (both generally and on the basis of gender)?
11. Where on the following scale (Fig. 1) would you place the bidders' level of engagement in decision making?

Figure 1: Level of shared decision making



### III. Bottle Depot Managers

1. How long have you worked here?
2. Is your business a cooperative or an enterprise?
3. How many people work (full time/part time/occasional) in the bottle depot? (Men /Women)
4. What percentage of your employees are binners?
5. How many women are in managerial positions?
6. Does your business receive any government support? How else are you supported?
7. How many binners (if possible by gender) sell their beverage containers, on average, to your business? Are there seasonal or other fluctuations?
8. What is the male-female ratio of the binners that patronize this depot?
9. What can you say about the binners interrelations in the depot?
10. What are the volumes and types of materials your bottle depot receives from binners per month and per season?
11. Do binners handle hazardous materials? What type?
12. Is there anything else you would like to add specific to binning?