RECYCLING THE CITY: 
THE IMPACT OF URBAN CHANGE ON THE INFORMAL WASTE-RECOVERY TRADE IN HANOI, VIETNAM

By

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A thesis submitted in conformity with the requirements for the degree Doctor of Philosophy
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Abstract  
This three-paper dissertation explores how broader (and often unchallenged) changes to political economy at multiple geographic and economic scales impact long-standing ‘informal’ practices of waste recovery and recycling in Hanoi, Vietnam. This research is based on a survey of 575 informal waste collectors and 264 waste intermediaries as well as 73 in-depth interviews.  

Paper I engages in a critique of methodological disclosure in current academic writings on informal waste-recovery activities and discusses the methodological difficulties of researching informal populations. My aim in this paper is to highlight that the lack of methodological disclosure in waste-recovery literature is problematic because it compromises the academic rigour of this field and impedes the reliability of researchers’ policy recommendations as well as to initiate a dialogue with the aim of improving methodological rigour in waste-recovery literature.  

Paper II examines urbanization processes in contemporary Vietnam and how these changing spaces accommodate labour, and in turn support livelihoods. I argue that Vietnam’s globalizing economy and urban transition have been a catalyst for the growth of the informal waste collector population in Hanoi, as well as a partial player in the gendering of the industry.
Paper III explores how one particular segment of the informal waste-recovery trade, waste intermediaries, is impacted by Hanoi’s rapid urban change. I demonstrate in this paper that 1) waste intermediaries simultaneously gain and lose as a result of Hanoi’s urban transition; and 2) the underlying forces of urban spatial change in different areas of the city are quite distinct, which will have an impact on the future of waste-recovery in Hanoi.

The key findings of this dissertation are:

1) A more thorough engagement with methods and a broader approach to understanding waste-recovery actors (through an engagement with political economy at multiple geographic and economic scales) will produce a more context-appropriate and compassionate understanding of this group of urban actors.

2) The livelihoods of informal waste-recovery workers are both directly and indirectly impacted by shifts in political economy, albeit in Hanoi these impacts (both positive and negative) vary by sex and sub-occupation (with respect to waste collectors), and scale of business and location in the city (with respect to waste intermediaries).
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# TABLE OF CONTENTS

## INTRODUCTION
1.1 INTRODUCTION .............................................................................................................. 3
1.2 DEFINITIONS .................................................................................................................. 5
1.3 PAPER DESCRIPTIONS ................................................................................................... 9
1.4 THEORETICAL ENGAGEMENTS .................................................................................. 13
  1.4.1 Methodological approaches to studying mobile & marginal populations ................. 14
  1.4.2 Informal waste-recovery literature ........................................................................ 15
  1.4.3 Globalizing cities and urban restructuring literature .............................................. 17
1.5 REFERENCES ............................................................................................................... 20

## PAPER I
2.1 INTRODUCTION ............................................................................................................ 26
2.2 INFORMAL WASTE-RECOVERY IN HANOI, VIETNAM ........................................... 28
2.3 METHODS IN INFORMAL WASTE-RECOVERY LITERATURE .................................... 33
  2.3.1 Site of Study ............................................................................................................. 34
  2.3.2 Data collection methods ......................................................................................... 34
  2.3.3 Translators and research assistants ......................................................................... 35
  2.3.4 Sample size and sampling method ......................................................................... 35
  2.3.5 Policy recommendations ....................................................................................... 36
2.4 MOBILE, MARGINAL, AND MISUNDERSTOOD ......................................................... 38
  2.4.1 Addressing mobility issues through research design ............................................... 38
  2.4.2 Limitations ............................................................................................................. 41
  2.4.3 Marginal and misunderstood .................................................................................. 44
  2.4.4 Addressing issues of misunderstanding through design & implementation .......... 49
  2.4.5 Limitations ............................................................................................................. 51
2.5 CONCLUSION .............................................................................................................. 53
2.6 REFERENCES .............................................................................................................. 56

## PAPER II
3.1 INTRODUCTION ............................................................................................................ 61
3.2 INFORMAL WASTE-RECOVERY ACTIVITIES .......................................................... 63
  3.2.1 Characteristics and demographics of informal waste collectors .............................. 63
  3.2.2 Trends in the literature .......................................................................................... 65
3.3 RURAL ROOTS, URBAN FUTURE? ............................................................................. 68
  3.3.1 The rural roots of Hanoi’s informal waste collectors ............................................... 68
  3.3.2 Informal waste collecting in the urban context ........................................................ 71
    3.3.2.1 Changing mechanics of waste collecting ............................................................ 71
    3.3.2.2 Changing population demographics ................................................................. 74
    3.3.2.3 Gendering of waste work in Hanoi ................................................................. 77
    3.3.2.4 City-based politics of exclusion .................................................................... 87
3.4 SUMMARY AND FINAL THOUGHTS ......................................................................... 89
3.5 REFERENCES .............................................................................................................. 93
PAPER III

4.1 INTRODUCTION

4.2 WASTE INTERMEDIARIES EXPLORED

4.3 ECONOMIC & SPATIAL CHANGE IN A GLOBALIZING HANOI

4.4 INTEMEDIARIES IN FLUX

4.4.1 WINNING AND LOSING IN THE WASTE TRADE - LOCATION

4.4.2 WINNING AND LOSING IN THE WASTE TRADE – CONSUMPTION AND COMPETITION

4.4.3 WINNING AND LOSING IN THE WASTE TRADE – MARKET FLUCTUATIONS

4.4.4 SPATIAL CHANGE IN THE CITY

4.5 URBAN FUTURE OF INFORMAL WASTE MANAGEMENT?

4.6 REFERENCES

CONCLUSION

5.1 URBAN FUTURES?

5.2 SUMMARY OF RESEARCH AND RECURRING THEMES

5.3 POLICY IMPLICATIONS

5.4 FUTURE RESEARCH TRAJECTORIES

5.5 REFERENCES

APPENDICES

APPENDIX 1: REVIEW OF INFORMAL WASTE-RECOVERY LITERATURE

APPENDIX 2: WASTE COLLECTOR SURVEY FORM

APPENDIX 3: WASTE INTERMEDIARY SURVEY FORM

APPENDIX 4: WASTE COLLECTOR AND INTERMEDIARY INTERVIEW SCRIPTS

APPENDIX 5: IMAGES OF JUNK BUYERS

APPENDIX 6: IMAGES OF WASTE PICKERS

APPENDIX 7: IMAGES OF SIDEWALK DEPOT OPERATORS

APPENDIX 8: IMAGES OF WASTE RECEIVERS
LIST OF TABLES

TABLE 1: PERCENTAGE OF RESPONDENTS WHO ROAD BIKES, BY OCCUPATION AND SEX ........................................ 72
TABLE 2: KILOGRAMS COLLECTED PER DAY, BY OCCUPATION ................................................................. 73
TABLE 3: SEX OF WASTE COLLECTOR OCCUPATIONAL CATEGORIES IN 1992 AND 2006................................. 78
TABLE 4: SIGNIFICANT T-TESTS FOR SEX DIFFERENCES IN TYPE OF WASTE COLLECTED (2006) .............. 81
TABLE 5: PRICE FLUCTUATIONS OF WASTE MATERIALS OVER SIX-MONTH PERIOD (PRICE PER KILOGRAM)*........... 84
TABLE 6: WASTE COLLECTORS' AVERAGE INCOME, EXPENSES, AND SAVINGS, BY SEX (2006) ................. 86
TABLE 7: AVERAGE RENTAL FEE PAID BY WASTE RECEIVERS PER MONTH, BY AREA OF THE CITY* ............ 112
TABLE 8: PRICE FLUCTUATIONS OF WASTE MATERIALS OVER A SIX-MONTH PERIOD (PRICE PER KILOGRAM)*.... 119
TABLE 9: AVERAGE NUMBER OF WASTE INTERMEDIARIES AND COLLECTORS IN HANOI, BY AREA............. 126
TABLE 10: AVERAGE REVENUE OF WASTE INTERMEDIARIES PER MONTH, BY AREA* .................................. 129

LIST OF FIGURES

FIGURE 1: MAP OF HANOI DISTRICTS AND SUBURBAN AREAS ................................................................. 32
FIGURE 2: MAP OF STUDY DISTRICTS ............................................................................................................ 32
FIGURE 3: INTERNATIONAL PRICE PER TONNE (CASH BUYER) OF VARIOUS METALS (08/2007) ............. 82
FIGURE 4: INTERNATIONAL PRICE FLUCTUATIONS (USD/TONNE) OF 'GRADE A' COPPER (CASH BUYER) .... 83
FIGURE 5: HANOI’S DISTRICTS DIVIDED INTO CENTRAL BUSINESS, CORE, PERI-URBAN, AND SUBURBAN .... 125
INTRODUCTION
PREFACE

In the summer of 2002 I arrived in Hanoi for the first time. The city was already undergoing major structural changes resulting from an influx of foreign-direct investment in the late 1990s. Trang Tien Plaza, located in the core of Hoan Kiem District adjacent to the iconic Hoan Kiem Lake, had just opened its doors and its presence was a novelty. The positioning of the department store, in the heart of the city and directly across the street from a Ho Chi Minh propaganda poster, was a harbinger of the ‘new Hanoi’: a city poised to become a player in the globalizing world, but attempting to remain steadfast to its cultural and political roots. Each year after that initial trip I returned to Vietnam, and each year changes to the landscape of the city surprised me. A small chain of locally owned coffee shops began to expand rapidly, catering to wealthy Vietnamese and Westerners, with a latté costing more than most migrant labour would earn in the city during an entire day. Construction cranes dotted the landscape in both the central districts and the sprawling peri-urban areas of the city. My view from an apartment on Van Ho Street in Hai Ba Trung District would have in years past been simply a tranquil view of Lenin Park, but in 2005 it served as a daily visual reminder of the speed and scale of the city’s growth.

Of course, I am not the first person to comment on Vietnam’s rapid economic and structural changes. A growing number of researchers now explore Vietnam’s urban transition and the resulting changes to both its city and its people. Similar to recycling, whereby a material is transformed through processing, the city itself is undergoing major structural (and social) transformations. In essence, its physical structure is altered through the processes of macro-economic restructuring. However, as I was narrowing down my topic for my PhD research, I realized that few people had looked at the impacts of this massive development on informal
labour, particularly the informal waste-recovery industry. For years, I had watched groups of informal waste collectors congregate outside my office on Ngo Quyen Street in central Hanoi. In a city that is consuming at a level previously unknown in Vietnam, little attention has been given to its inevitable outcome, waste, or to these people who silently work behind the scenes, informally recovering and recycling the discards of an increasingly affluent population. Thus, I asked myself: as the city itself morphs into a different version of its older self, what becomes of the people who depend upon it for their survival? Or in other words, what impact does a recycled city have on the recyclers themselves? My dissertation, “Recycling the City: The Impact of Urban Change on the Informal Waste-Recovery Trade in Hanoi, Vietnam”, attempts to answer this increasingly relevant and timely question.

1.1 INTRODUCTION

The structure of the political economy of Vietnam has been experiencing rapid changes over the last twenty years. Since 1986, Vietnam has implemented a package of policies known as Doi Moi, or in English: renovation. These policies have acted as a catalyst for Vietnam’s transition from a centrally planned economy to what the Vietnamese Government refers to as ‘market socialism’, or a mix of market mechanisms and state control. In Vietnam’s shifting political economy, cooperatives have been demolished and farmers have been given land use rights; largely inefficient state-owned enterprises have been replaced by foreign-direct investment in manufacturing. Hanoi, a city governed by the socialist regime for four decades, is also showing significant signs of change. “[S]ince the beginning of Doi Moi market forces have begun to overshadow the influence of central planning as a city-shaping force” (Nguyen and Kammeier, 2002: 374). Although, as Nguyen and Kammeier also argue, Vietnam’s
changing political economy and the ensuing urban restructuring taking place in its largest cities is not a complete success story, nor are the actual effects well-documented.

This three-paper dissertation explores how broader (and often unchallenged) changes to political economy at multiple geographic scales impact long-standing ‘informal’ practices of waste recovery and recycling in Hanoi, Vietnam. Because the informal waste-recovery industry consists of a heterogeneous group of people (with their own social and economic hierarchy), changes to political economy impact individuals at different levels of the waste-recovery hierarchy in numerous and intricate ways. As such, the key questions of this dissertation are:

1) How are the livelihoods of actors in the informal waste-recovery industry affected by shifts in Vietnam’s political economy?

2) Do different actors in the informal waste-recovery hierarchy, including women working in the lowest levels, experience this change differently?

3) How is this informal waste-recovery industry affected by the move towards the privatization of previously public spaces and changes to the built form of the city? In other words, is ‘access to the city’ intrinsically connected to waste-recovery industry actors’ livelihoods, or is the trade able to adapt and change as the city embraces new patterns of urban development?

A final overarching question in this dissertation is how we overcome some of the major methodological hurdles researchers encounter during the course of fieldwork with informal waste-recovery populations and what are the avenues to improve methodological rigour?

The qualitative and quantitative data used in this dissertation is derived from three field visits to Hanoi, Vietnam from 2005 to 2007. The majority of the data was collected during the
second field visit in 2006, which lasted for eight and a half months. During this period I employed a team of local research assistants who assisted me in conducting surveys with 575 waste collectors (waste pickers and itinerant junk buyers) and 264 waste intermediaries (waste receivers and sidewalk depot operators). Additionally, we conducted 73 in-depth interviews with the same population.

1.2 DEFINITIONS

Before proceeding, it will be useful to have a working definition of some key terms used in this dissertation, specifically: 1) political economy 2) informal waste-recovery, and 3) globalizing cities.

The term political economy has a long history dating back to the 1700s, but is probably most commonly associated with Karl Marx’s rearticulation of the term in the mid-nineteenth century. Within human geography, the concept of political economy first emerged in the 1960s as part of the radical geography movement, and has since directly and indirectly influenced a number of academic debates within the discipline (Barnes, 2000: 593-594). Political economy has also been used in more of a descriptive nature. Nguyen and Kammeier (2002) use the term political economy to describe Vietnam’s version of a centrally planned economy, and their subsequent shift to a more decentralized transitional economy in the 1980s. With respect to the use of this term within this thesis, I employ political economy in a literal rather than political sense. In other words, political economy is used to describe the intrinsic connection between the political and the economic, similar to how Nguyen and Kammeier (2002) employ the term. My aim in this thesis is to show that changes in political economy impact individuals at different levels of the waste-recovery hierarchy in numerous
and intricate ways, thus illustrating the complexity of the interplay between global (and local) economic processes and local forms of labour as they play out in cities.

In many developing countries, waste reduction is largely accomplished “incidentally” and “informally”, through long-standing practices of repair, reuse and recycling (Furedy, 1999). People who work in the informal waste-recovery trade are not employed by the state, nor do they work for private waste management haulers; rather, they work independently of the state and/or private companies (although in some cases private arrangements are made between informal waste collectors and formal state-paid waste collection workers). Thus, the term “informal” is used to describe the relationship between workers and the state; while informal waste-recovery workers are providing an essential service to municipal governments, their contribution is informal, or without official sanction or recognition. I do not extend the term informal to the internal structure of the trade. In fact, the internal configuration of the informal waste-recovery trade is quite ‘formal’ in the sense that it is highly organized and has a recognized structure (which may vary by locale). In Hanoi, the informal waste-recovery trade consists of a complex hierarchy, which includes a three-tiered network of collectors (waste pickers, dumpsite pickers, and junk buyers), intermediaries (receivers, dumpsite depot operators, and sidewalk depot operators) and dealers (dealers and agents) (DiGregorio, 1997). Similar hierarchies exist in other countries (Sincular, 1991; Medina, 2000; Li, 2002). In many cities, gaining employment within the informal waste-recovery industry is both (relatively) profitable and often the only opportunity for poor rural migrants with limited marketable skills (DiGregorio, 1994; Furedy, 1997). Thus, the informal waste-recovery trade operates under economic pressure “motivated by demand for recovered materials and the income needs of the labor force” (DiGregorio, 1994: 58).
The term ‘globalizing cities’, or ‘global city’, refers to a process of integration into the global economy, which positions select cities (often, but not always, capital cities) as national centres that “coordinate the integration of national and regional economies into global flows of trade and investment” (Shatkin, 2005: 577). This shift towards global interconnectivity in Asia (which has taken place primarily since the 1990s) has been spurred not only by international investors looking for new markets to invest in, but is also perpetuated internally through neoliberal policies enacted by national governments in competition for ‘world city status’ (Douglass, 2005). The result of increased global finance capital in Asian cities is the fundamental restructuring of the built environment in many of Asia’s global cities. This restructuring has taken the form of mega projects to restructure the urban core for global management and service functions, construction of shopping malls to host international franchises, and large-scale construction of suburban communities (Douglass, 2005).

My research is concerned with the impact of this urban restructuring process, which in Hanoi is a result of changes in Vietnam’s political economy, on informal workers. While there is increasing academic attention being placed on the impacts of economic and urban restructuring on labour, much of this work lacks empirical evidence to support its theoretical claims and tends to be rather generalized (as stated by Carr et al., 2000; Carr and Chen, 2004). Furthermore, the literature that does exist tends to be primarily focused on the effects of

1 In this dissertation, I use the terms urban restructuring and urban transition interchangeably because these processes are very much interlinked in Vietnam. However, it is probably more accurate to understand urban transition, or the transition of rural areas and rural life towards the urban sphere, as one aspect of the urban restructuring process.
globalization on the formal workforce (Ibid). As a result, a gap exists in terms of understanding how economic and urban restructuring impacts individuals, particularly those on the margins of the economy. Thus, one of the key objectives of this dissertation is to conduct empirical research on the actual impact of urban restructuring, or urban transition, on one group of urban actors – individuals in the informal waste-recovery trade.

In addition, while there is a wealth of information about how cities around the world are increasingly becoming spaces of consumption (Clark, 1997; Jellinek, 2000; Capron, 2002; Lucas, 2002), much less is known about how these spaces accommodate labour, and in turn support livelihoods. Given that a significant percentage of the urban poor depend on ‘access to the city’ to support themselves and their families, a second key objective is thus to understand how livelihoods are affected by changes to the built environment, such as the privatization and commodification of public space.

I chose to conduct research on the informal waste-recovery trade for two important reasons. First, this trade consists of a heterogeneous group with its own social and economic hierarchy. It is likely that the effects of economic restructuring will impact individuals at different levels of the waste-recovery hierarchy in numerous and intricate ways, thus illustrating the complexity of the interplay between global economic processes and local forms of labour as they play out

2 A few exceptions to this general trend in the literature should be noted. Carr, Chen and Tate (2000) focus on female home-based workers and analyze, through the use of global value-chains, the impact of globalization on both labour and the market. Ward et al. (2004) conducted research on the effects of global economic restructuring on urban women’s work and other income-generating strategies in Dhaka, Bangladesh. They find that under programs of trade liberalization and the privatization of state-owned enterprises, women (generally speaking) had a harder time finding work than their male counterparts. They note that as a result of broader economic changes, many women moved from the household economy and ‘in-kind informal labour’ (i.e. domestic work) to participation in the informal (domestic work, sex work, and micro credit) and formal sector (garment factories). In addition, some women migrated (with or without the required approval from the state) in order to find work and send remittances back to their families.
in cities. Second, after decades of condemnation, the informal waste-recovery trade is now increasingly promoted as an integral component of sustainable urban development (Medina, 2007); simultaneously, the informal waste-recovery trade is intimately connected to a particular built environment in the city for its form and function, which is rapidly changing in many cities around the globe. This dissertation will begin to explore this possibly dialectical relationship, and how it is produced and reconstructed as cities compete for world city status.

1.3 PAPER DESCRIPTIONS

The main body of this thesis consists of three individual papers. Paper I, titled “Mobile, Marginal and Misunderstood: An Examination of Methodological Issues in Informal Waste Recovery Literature” engages in a critique of methodological disclosure in current academic writings on informal waste-recovery activities and discusses the methodological difficulties of researching informal populations, which are often mobile (lacking a defined sampling frame), marginal (lacking formal status in the city) and misunderstood (poor public perception towards their work). The aim of the paper is twofold: 1) to highlight that a lack of methodological disclosure in waste-recovery literature is problematic because it compromises the academic rigour of this field of study and impedes the reliability of researchers’ policy recommendations; and 2) to initiate a dialogue to discuss some of the major methodological hurdles researchers encounter during the course of fieldwork with informal waste-recovery populations and avenues to improve methodological rigour. To facilitate these discussions, I divided the paper into two parts: 1) a review of current and past informal waste-recovery literature; and 2) a discussion of the inherent difficulties of researching informal waste-recovery populations and the positive and negative aspects of various types of methods and research designs.
In part one, I review the methodology and recommendations sections of thirty pieces of recent literature (1990s and 2000s) published in peer-reviewed journals, books, or as reports for international non-governmental organizations. Articles were selected based on their regional focus (i.e., I selected articles primarily in Asia, but also some from Africa and Latin America) and availability. For example, most of the articles were selected through Scholars Portal, using key words such as “waste,” “informal,” “pickers.” Other articles were found using Google Scholar, or from a search of the Waste-Econ Library at the University of Toronto. For each of these articles, I examined: 1) where the study was undertaken; 2) data collection methods used; 3) number of translators and/or research assistants; 4) sample size of study population; 5) sampling method(s) employed; and 6) type(s) of policy recommendations, if any, are drawn from the research conducted. Overall, my analysis revealed methodological weaknesses and limited disclosure of methods in this body of literature. Given that some municipal governments are beginning to recognize the importance of this group (in terms of their contribution to cities and, in some countries, rural communities) and developing policy interventions, I argue that it is imperative that research undertaken accurately represents the actors involved, and that researchers disclose the limitations (both methodological and geographical) of their studies in order to ensure equitable policy development.

In part two, I build on this argument by demonstrating that while informal waste-recovery populations are indeed mobile, marginal and misunderstood, these logistical challenges should not prevent scholars from producing methodologically sound research. I demonstrate this point through a discussion of the strengths and weaknesses of various research designs and methodological tools, using my own research as a starting point.
Paper II, titled “Altered Landscapes, Altered Livelihoods: The Shifting Experience of Informal Waste Collecting during Hanoi’s Urban Transition”, explores the changing experiences of waste collectors in the transitioning city of Hanoi. I draw upon two bodies of literature, urbanization processes in contemporary Vietnam and the informal waste-recovery literature, to position the empirical research within the wider theoretical context. I show that we have a limited empirical understanding of how informal waste-recovery workers experience urban change, which is paradoxical given the recent trend in informal waste-recovery literature to promote informal waste collecting in the city. Moreover, I show that while researchers are increasingly interested in Vietnam’s cities as spaces of consumption, much less attention has been given to how these cities accommodate labour. This research addresses this gap, as well as furthering our understanding of how informal waste-recovery workers adapt to urban change.

Using published empirical data on Hanoi’s informal waste collectors from 1992 (DiGregorio, 1994) and my own data, including a survey of 575 waste collectors and 44 interviews, collected on Hanoi’s informal waste collectors in 2006, I explore the shifting experience of informal waste collectors. More specifically, I argue that Vietnam’s globalizing economy and urban transition have been the catalyst for the growth of the informal waste collector population in Hanoi. Additionally, these macro shifts, in concert with gendered notions of waste work in Vietnam, have merged to create a widening income gap between male and female waste collectors. Overall, the findings in this paper suggest that the livelihoods of Hanoi’s informal
waste collectors are forged through various processes of change occurring at multiple geographic and economic scales.\(^3\)

Paper III, titled “Trading Trash in the Transition: Economic Restructuring, Urban Spatial Transformation and the Boom and Bust of Hanoi’s Informal Waste Trade”, contributes to the small, but growing, literature on the socio-spatial impacts of urban transition on people and places in Vietnam. Specifically, I argue that the impact of urban and spatial change on waste intermediaries is complex and multifaceted and thus cannot be described as a wholly negative or positive experience. Rather, I demonstrate in this paper that 1) waste intermediaries simultaneously gain and lose (i.e. experience both boom and bust) as a result of Hanoi’s urban transition; and 2) while the economic outcome (earned income, savings, and expenses) of waste intermediaries across the city is currently comparable, the underlying forces of spatial change in different areas of the city are in fact quiet distinct. The empirical analysis is based on a multi-stage random sample of 264 waste intermediaries as well as 29 qualitative interviews.

With respect to the boom and bust of waste intermediaries, three major themes, or points of contention, are presented in the first half of this paper: 1) issues surrounding housing demand and supply; 2) availability of waste materials; and 3) fluctuations in the price of waste materials. I argue in this section that smaller waste intermediaries (i.e. those operating on a smaller trading scale and with a small amount of working capital) are generally most vulnerable to the points of contention noted above. Moreover, I argue that smaller shops will be more directly

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\(^3\) As Rigg (2007) states: “not only do people live across scales (so that the local is implicated in the global, and the global in the local) but scales themselves (the making of the global and local, for instance) are socially and politically constructed” (173). The same argument can extend to economic scales. In other words, people’s livelihoods are very much forged across and within local, regional, national, and international economies.
impacted by changes to the city, both in terms of insecurity of land tenure (via opportunistic landlords) and by changes to the city itself, including changes in built form.

In the second half of this paper, I argue that in the central business districts of Hanoi, intermediaries are effectively shut out due to the interconnected factors of high rental fees, scarce land (due to high population density), and strictly enforced government regulations. In the peri-urban districts⁴, low rental fees, abundant land, and high value construction waste has drawn many intermediaries to these districts as of late. However, new built form in these areas is already limiting access to waste, and once the construction boom expands beyond these districts into Hanoi’s suburban districts, the high value scrap metal boom that intermediaries currently profit from may very well dissipate with unfortunate economic consequences for intermediaries and the informal waste collectors who sell materials to them.

In this third paper, and in the concluding chapter, I connect the livelihoods of informal waste collectors to waste intermediaries, and the livelihoods of waste intermediaries to waste collectors. Moreover, I argue that informal waste management in Hanoi in a period of urban transition is much more than an urban issue and that a compassionate policy direction would consider the urban-rural linkages associated with this informal occupation.

1.4 THEORETICAL ENGAGEMENTS

This dissertation engages with three bodies of theoretical literature: 1) the literature on methodological approaches to dealing with mobile and marginal populations; 2) informal

⁴ In Hanoi, these districts include: Cau Giay, Thanh Xuan, Tay Ho, Hoang Mai, and Long Bien.
waste-recovery literature; and 3) globalizing cities literature and writings on urban economic and spatial restructuring.

1.4.1 Methodological approaches to studying mobile & marginal populations

Since Hart’s (1973) academic ‘discovery’ of the informal sector, researchers have wrestled with the theoretical and empirical difficulties implicit in studying informal populations (Alderslade et al., 2006). The mobility and marginality of informal study populations are major logistical challenges for many researchers across social science disciplines, in developed and developing countries alike (Hunter and Smith, 2002; Bizier et al., 2004; Jacobsen and Landau, 2003; Landau and Roever, 2004; Magnani et al., 2005). For example, Hunter and Smith (2002) discuss the difficulty of ensuring mobile respondents (in the case of their research, indigenous Australians) are representative of the underlying population of study. This logistical challenge is even more pronounced in longitudinal studies. Moreover, Magnani et al. (2005) argue, through a case study of HIV/AIDS, that conventional facility and survey-based surveillance data collection strategies are ineffective for populations whose behaviours are illegal or illicit. Similarly, Landau and Roever (2004) comment that for populations living illegally in an area, due to anti-squatter or immigration policies, acquiring any sort of official registry is unlikely; if one did exist, the highly transitory nature of informal work would ensure that any such official count or registry would quickly become obsolete.

To overcome these methodological obstacles, researchers have devised a diverse set of possible solutions to these challenges. For example, some researchers advocate combining qualitative and quantitative methodologies to ensure a quality data set (Hunter and Smith, 2002). Landau and Roever (2004) add that conducting methodologically sound large ‘n’ survey
research, in combination with qualitative techniques, is a powerful way to prevent *a priori* assumptions of the researcher(s) from biasing the results. Moreover, by incorporating quantitative methods into the research design, it is possible to demonstrate that the phenomena under study are representative of a majority of the population; a powerful tool for policy makers and advocates in their work to address humanitarian issues (Ibid). A number of researchers also suggest using non-conventional sampling methods (Jacobsen and Landau, 2003; Bizier et al., 2004; Magnani et al., 2005). For instance, Jacobsen and Landau (2003) discuss how they combined multi-stage cluster and interval sampling to ensure a representative and random sample of the study population in their Johannesburg project; Magnani et al. (2005) suggest response-driven sampling for surveying hidden populations, which is similar to snowball sampling but is implemented in such a way as to allow for the calculation of selection probabilities. For situations in which no sampling frame exists, Landau and Roever (2004) suggest creating an original sampling frame of the population under study.

Overall, recent methodological scholarship on mobile and marginal populations suggests that while these populations are difficult to study, this inherent difficulty should in no way be justification for poor research design; rather, as multiple authors noted above have demonstrated, researching difficult-to-study populations is quite possible with creative planning and thorough understanding of the limitations of our methodological tools.

1.4.2 Informal waste-recovery literature

Despite the negative perception of waste collecting within many municipal governments in Asia, Latin America and Africa, the general consensus of waste collecting in most academic literature has been quite positive. Researchers have called for municipal governments (and
non-governmental organizations) to “incorporate”, “accommodate”, and “collaborate”\(^5\) with the informal waste-recovery sector (Furedy, 1993; Romanos and Chifos, 1996; Furedy, 1999; Ojeda-Benitez et al., 2002; Nas and Jaffe, 2004; Medina, 2005; Madsen, 2006; Monero-Sanchez and Maldonado, 2006; Wilson et al., 2006). Authors suggest multiple avenues through which this could be accomplished, including: integrating informal waste collectors into formal waste management (including private and/or public) activities in the city (or at landfills) (Kaseva and Gupta, 1996; Adeyemi et al., 2001; Agarwal et al., 2005; Rouse, 2006; Wilson et al., 2006); improving the conditions for informal waste collectors by providing access to healthcare (Hunt, 1996; O’Leary, 1998; Ngo, 2001), creating opportunities for education and skills upgrading (O’Leary, 1998; Gautam and Upadhyaya, 2001; Ngo, 2001; Hayami et al., 2006), creating avenues through which to obtain micro-credit loans (Ngo, 2001; Madsen, 2006); and finally, by promoting the idea that informal waste collectors should organize themselves into cooperatives, which would allow them to bypass waste ‘middlemen’ (although, with little mention of the impact of this recommendation on those working ‘up the hierarchy’, particularly waste intermediaries) and earn more per kilogram of waste than they would if they worked individually (Medina, 2000; Medina, 2005; Medina, 2007).

In spite of recent academic attention, waste-recovery industries face a number of threats to their survival. Earlier work in this field suggested that rationalization (i.e. mechanization) of waste management organizations in cities would cause friction between formal and informal waste management systems (Birkbeck, 1978; Furedy, 1993). More recent work suggests that urban development may threaten the operation and further expansion of informal waste-recovery industries. DiGregorio, in his 1994 study of Hanoi, Vietnam, noted that road

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\(^5\) For a more detailed description of these terms, please see DiGregorio (1994: 136-138).
construction had already forced the relocation of recovery operations along the city’s inner ring road; Furedy (1999), speaking more generally of developing Asian countries, notes that changes occurring through urbanization and shifts in planning policy at the international, national, and municipal levels can adversely affect informal waste-recovery activities. She highlights that little has been written about how increasing land prices or the shift from dense mixed-use residential areas to apartment-style development have impacted this sector. Ngo (2001), speaking specifically of Hanoi, points out that a recent law regarding the protection of urban security has restricted the use of pavements and regulated the types of vehicles that may be used on streets in Hanoi, which has had a negative impact on individuals working within the informal waste-recovery industry.

While these authors have touched on an important threat to the continued functioning of waste-recovery industries, I would argue that the situation is more complex. Changes within the city, including urban development, are a result of broader macro-economic and political changes taking place at not only the municipal, but also national and international scales. It is at these multiple scales that my analysis in this dissertation is focused.

1.4.3 Globalizing cities and urban restructuring literature

The process of global city formation in Southeast Asia can be traced back to the 1980s and the shift of labour-intensive industry from higher-income countries in the region (including Northeast Asia and Singapore) to Southeast Asian countries. Simultaneously, global franchise capital began to flood into the region, catering to the new urban wealth generated in cities from foreign-direct investment (Douglass, 2005). In the 1990s, with massive amounts of global finance capital flowing into the region, major cities in Southeast Asia began on a path of
major restructuring of their built environment. McGee and Robinson (1995), commenting on this phenomenon, discuss the ways in which the growth of transportation links has pushed the urban boundary of cities. The impact of this shift, or the ‘suburbanization’ of the peri-urban region, is profound. The spatial restructuring includes gated communities, golf courses, industrial parks, and international airports, which in some cases have left farmers growing grass for golf courses (Douglass, 2000). The growing demand for urban land has in many cities “induced developers to optimize their project development in commercial areas”, with the result being that numerous ‘slum areas’ “have now been converted into integrated, multiuse complexes of residential areas, shopping centers and office spaces” (Firman, 1998: 238).

Growth and structural change witnessed in Vietnam appears to be increasingly more connected to broader regional developments as a result of the country’s re-engagement with both international and regional Pacific Asian economies (Drakakis-Smith and Dixon, 1997). Leaf (2002) and Nguyen and Kammeier (2002) detail how changes to the urban environment in Vietnam are both a direct and indirect result of changes to the global and national political economy. The result: visible manifestation of underlying structural changes in the built form of the city (Nguyen and Kammeier, 2002). In this dissertation, I argue that commercial redevelopment, densification, gentrification, and other changes to the built environment will have an impact on people who depend on the city for their livelihood.

Understanding of local spatial manifestations of national and global economic restructuring is still rather limited in Vietnam (Nguyen and Kammeier, 2002), however, it is clear that there is a burgeoning interest in the social, spatial and environmental affects of rapid economic

6 Specifically they argue four significant factors: the growing diversification of capital investment; land use rights as commodity; commercialization of the housing sector; and, in contrast, the slow changes in the planning system.
development (Luong, 2003). What is equally important, in my opinion, is to understand how economic restructuring and urban transition unfolds at the micro-scale; how do individual people experience these changes? Overall, recent literature on the impacts associated with globalization and urbanization suggest that these processes are contributing to the decline in both living and environmental standards in developing countries (Castells, 2002; Evans, 2002; Zetter, 2004). Wheeler and Beatley (2004) go as far as to argue that “the rising tide of inequality in many societies – in which some groups within society prosper while others suffer – is profoundly rooted in current patterns of urban development” (2). But the question remains as to exactly how do these processes play out? How do different groups experience this change? Are all members of marginal groups, such as the informal waste-recovery trade, similarly impacted by urban change, or do some subgroups prosper? Why does this happen and what is its impact?

These are the questions that have guided my research effort, and which the remainder of this dissertation will attempt to address.
1.5 REFERENCES


PAPER I

MOBILE, MARGINAL, AND MISUNDERSTOOD:
A CRITICAL EXAMINATION OF METHODOLOGICAL ISSUES IN INFORMAL WASTE-RECOVERY LITERATURE
2.1 INTRODUCTION

Municipal governments in developing countries are increasingly being asked to move beyond draconian tactics\(^7\) of dealing with informal waste-recovery industries towards new, more inclusive models of city planning, which ‘incorporate’, ‘accommodate’, and ‘collaborate’ with this informal trade (DiGregorio, 1994). In recent years, numerous scholars, and even some municipal governments, have begun to recognize the significant role informal waste-recovery industries\(^8\) play in cities’ recycling and resource recovery activities.

A plethora of writing, both academic and journalistic in nature, now exists on the activities of informal waste-recovery trades around the world (Birkbeck, 1978; Sinclair, 1991; Bonnerjee, 1992; Furedy, 1993; DiGregorio, 1994; Dwivedi, 1994; Medina, 2000; Li, 2002; Agarwal, 2005; Fahmi, 2005). However, the methods through which some researchers acquired their data are often of only a cursory concern and typically buried deep within the chasms of the paper.\(^9\) The general neglect of methods in this literature is problematic for two reasons: 1) the informal sector in general, and waste-recovery industries in particular, are notoriously difficult to investigate, thus, a more comprehensive understanding of how researchers have dealt with the inherent difficulties of studying these populations would provide a solid foundation for future inquiry in this field of study; 2) how researchers design their projects, carry out their research,

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\(^7\) For example, expelling workers from cities, as seen in Manila in the 1970s

\(^8\) Throughout this paper I will use the term “industry”, or “trade”, to refer to actors working in waste-recovery. I do this in part because of convention (DiGregorio, 1994 and 1997), but also strategically to promote waste-recovery actors as skilled informal labourers.

\(^9\) There are a few exceptions, including DiGregorio’s detailed account of methods in the appendix of his 1994 book entitled: Urban Harvest. Other authors who have included some useful detail regarding their methods include: Medina (1997), Rouse and Ali (2001), and Li (2002).
and interpret their results is integral to the nature of their policy recommendations, and thus vital information for the readers of their work.

In this paper, I will utilize the experience (both positive and negative) of conducting two large ‘n’ surveys with informal waste collectors (n=575) and informal waste intermediaries (n=264) as well as 73 follow-up interviews in Hanoi, Vietnam to illustrate how I overcame some of the obstacles of working with informal waste-recovery populations. Furthermore, I will discuss the limitations of my research and highlight the strengths and weaknesses of alternative methods, where appropriate.

In order to facilitate this discussion, this paper is divided into two parts: 1) a review of current and past informal waste-recovery literature; and 2) a discussion of the inherent difficulties of researching informal waste-recovery industries and the pros and cons of various methods used in research design. I argue in this section that informal waste-recovery industries are so difficult to study because they are at once mobile, marginal and misunderstood. In other words, not only do researchers have to contend with an itinerant population lacking a defined sampling frame (mobile), but they also have to be aware of how this sector is perceived: both in terms of respondents’ lack of formal status in the city (marginal) and the periodic public ridicule they face by city residents (misunderstood). Each of these ascribed ‘characteristics’ can hinder good data collection. I will summarize this paper with a discussion of why methods matter, focusing on the trend in informal waste-recovery literature to propose policy changes based on weak empirical evidence.
2.2 INFORMAL WASTE-RECOVERY IN HANOI, VIETNAM

Informal waste-recovery industries operate under economic pressure “motivated by demand for recovered materials and the income needs of the labor force” (DiGregorio, 1994: 58). In Hanoi, this system consists of a complex hierarchy, which includes a three-tiered network of waste collectors (waste pickers, dumpsite pickers, and junk buyers) waste intermediaries (receivers, dumpsite depot operators, and sidewalk depot operators) and dealers (DiGregorio, 1997). Similar hierarchies exist in other cities in the developing world (Sinclar, 1991; Medina, 2000; Li, 2002). In practice, these categories are more flexible; itinerant junk buyers sometimes pick waste, fixed-location receivers sometimes set up a small sidewalk depot shop to increase their visibility.

In the early 1990s, it was estimated that approximately 4,800 people in Hanoi worked in the bottom tier (waste collectors) alone, accumulating an average of 31.4 kilograms each of recyclable materials per day (DiGregorio, 1994). Today, those figures have risen to 22,539 people and 38.6 kilograms, respectively. While the contribution of individuals is relatively small, combined they recover approximately 320,000 tonnes of materials per year, which amounts to just under one quarter of all waste produced in Hanoi. Many of the people

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10 I calculated the total number of waste collectors (waste pickers and itinerant junk buyers) using the following method: observed waste collectors were counted in a one kilometre square block for a period of three hours. Ten percent of the area blocks in each district were enumerated (half in the morning, half in the evening). These individual counts were combined to create a district total. I then multiplied the district totals by 10 to reach a total population for the six districts studied. To extrapolate to the remaining three peri-urban districts not included in the study, I calculated the average ratio of waste collectors to population in Cau Giay and Thanh Xuan (16:1), using the population figures from the Hanoi Statistical Yearbook (2006). Using the ration of 16:1, I determined that the remaining three peri-urban districts would have a total waste collector population of 8499 (Tay Ho: 1703; Long Bien: 2976; Hoang Mai: 3820). It should be noted that DiGregorio’s figure of 6,000 was based on research conducted in 1992 when Hanoi only had four urban districts. If I count only the four original urban districts, I arrive at an estimated population of 8,180. In fact, these figures are conservative estimates, given that research assistants were counting waste collectors at the same time as surveying. However, due to the mobility of waste collectors, it is possible that they were counted in more than one area block during the course of our study. As a result, the figures presented are merely estimates of the total population, not a precise count.
working at the bottom rung of Hanoi’s waste-recovery hierarchy are women from rural villages outside Hanoi\textsuperscript{11}, who work temporarily as waste collectors in order to meet their daily expenses and to save money for remittance (DiGregorio, 1997); those working as intermediaries (receivers and sidewalk depot operators) are, technically speaking, also temporary residents, but often rent homes in Hanoi and are thus better defined as quasi-permanent labourers.

In terms of my research, I was interested in exploring how economic and urban restructuring impacts one particular occupational group operating in the informal economy. I selected the informal waste-recovery sector as the focus of my research for two key reasons. First, this sector consists of a heterogeneous group with its own social and economic hierarchy. It is likely that the effects of urban restructuring will impact individuals at different levels of the waste-recovery hierarchy in numerous and intricate ways, thus illustrating the complexity of the interplay between local and global urban processes and local forms of labour as they play out in cities. Second, after decades of condemnation, the informal waste-recovery industry is now increasingly promoted as an integral component of sustainable urban development; simultaneously, the form and function of the informal waste-recovery industry is intimately connected to a particular built environment in the city, which is rapidly changing in many cities around the globe.

The research for this paper was conducted over an eight and a half month period of fieldwork in Hanoi, Vietnam. It consisted of two parts: two quantitative surveys, using random sampling techniques; and qualitative interviews, designed to add depth to the survey results. The scripts for the surveys were developed partially before arriving in Vietnam, but were created in large

\textsuperscript{11} Approximately 75 percent (411) of the waste collectors we surveyed reported Nam Dinh as their home province; only 18 respondents reported Hanoi as their hometown.
part ‘on-site’ with the assistance of my two research supervisors. In order to ensure that their translations were accurate, I hired an independent translator who back-translated the Vietnamese script to English. We also extensively pre-tested the survey script with our research subjects. After each test, the research supervisors and I would discuss problems and amend the survey script.

In June, July and August 2006, for a period of thirteen weeks, my research assistants and I administered two surveys. Survey one, the waste collector survey, was administered to 575 adult city-based waste collectors; children under 18 were excluded from the survey due to the ethical requirements of the University of Toronto (and I will discuss this point in more detail in paper 2 of this dissertation). Survey two, the waste intermediary survey, was administered to 264 city-based waste intermediaries. For five weeks in October and November 2006, we followed up with seventy-three structured qualitative interviews. The purpose of the surveys was to gather statistically significant data, which could be used to make generalizations with respect to the two populations. The purpose of the interviews was three-fold: 1) they allowed me the opportunity to ask more detailed questions and to obtain in-depth answers; 2) they served as a way to ‘triangulate’ the data obtained from the surveys; and, 3) they gave me the chance to follow-up on questions I had from a preliminary analysis of the surveys. In both the surveys and the interviews, I asked respondents about basic demographic information (age, gender, hometown, etc.) along with more detailed questions about the types and quantity of waste collected; price fluctuations of waste materials; their work environment (including where they work and why, transportation routes, problems encountered, etc.); and changes they have noticed in the city and in the type(s) and quantity of waste collected.

12 This figure includes 19 surveys that were not fully completed, but which were nonetheless included in the analysis.
13 This figure includes 15 surveys that were not fully completed, but which were nonetheless included in the analysis.
As mentioned previously, the research was carried out with the assistance of Vietnamese research assistants, due to my lack of fluency in Vietnamese. I hired two supervisors to lead a team of six undergraduate research assistants. Each of the supervisors had acquired training and experience conducting surveys and interviews prior to joining my project. Both the supervisors had completed degrees in Environmental Economics from the National Economics University in Hanoi; the six research assistants were at various stages (ranging from second to fourth year) of degrees in the same discipline. All assistants were orally fluent in English (although their written English skills varied). Each research assistant was hired on the basis of their enthusiasm for the project, their ability to effectively communicate with the study population, and their translation skills. Furthermore, each research assistant was given in-office and in-field training exercises prior to the commencement of the surveys, which took place in six districts across Hanoi. Figures 1 and 2, below, illustrate the urban districts of Hanoi and our study districts, respectively.

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14 I have an intermediate proficiency in Vietnamese.
15 The first training session consisted of a one-day in-office session to explain the objectives of the research, clearly define the characteristics of the target population, and explain proper survey protocol. Following this training, I held an ‘in-the-field’ training, which also doubled as a second pre-test of the survey. Research assistants were asked to conduct surveys while one of the supervisors observed them. Following three days of observation and training, the supervisors ranked each of the research assistants and we placed them in specific groups of two based on each person’s strengths and weaknesses. Supervisors were given the responsibility to conduct periodic ‘spot-checks’ on research assistants throughout the survey and to report on the quality of work; research assistants who had difficulties conducting surveys received additional support and guidance from the supervisors throughout the data collection period. Halfway through the surveys I also held a follow-up training session. At this point, research assistants were given additional training on soliciting sensitive information, avoiding bias during the surveys and during translation, and how to ask appropriate follow-up questions if respondents answered in a vague manner. We also used role-playing exercises to show how research assistants should deal with difficult respondents.
Figure 1: Map of Hanoi districts and suburban areas

Figure 2: Map of Study Districts

Maps adapted from HAIDEP Report, 2006
2.3 METHODS IN INFORMAL WASTE-RECOVERY LITERATURE

In order to facilitate this discussion of methods with respect to informal waste-recovery literature, I reviewed the methodology and recommendations sections of thirty pieces of recent literature (1990s and 2000s) published in peer-reviewed journals, books, or as reports for international non-governmental organizations (Appendix 1).\footnote{While this does not represent the entirety of research undertaken on informal waste-recovery industries, it is a significant collection of published work undertaken in the last two decades, particularly in Asia and Southeast Asia.} Each of the pieces reviewed uses waste collectors and/or waste intermediaries as the unit of analysis (although some authors also survey and interview other actors as well). The work represents a broad scope of geographical locations – Southeast Asia, South Asia and, to some extent, Africa and North America (Mexico). For each of these articles, I was interested in the following information\footnote{This list is adapted from Jacobsen and Landau (2003), who conduct a similar context analysis of refugee research.}:

1. Where was the study undertaken and which site(s) did the principal investigator(s) choose to study (i.e. did the research focus on waste collectors operating at landfills, in cities, or in both locations)?
2. Data collection methods (i.e. surveys, interviews, focus groups, etc.)
3. The use of translators/research assistants (i.e. did the primary investigator(s) conduct the surveys/interviews themselves, or did they hire assistants for some, or all of the data collection)?
4. What was the sample size for each type of research undertaken?
5. What type of sampling method did the principal investigator(s) use to select respondents for their surveys and/or interviews?
6. What type(s) of policy recommendations, if any, are drawn from the research conducted?
2.3.1 Site of Study

Most of the authors were explicit in defining the site of study as either in a city (or in some cases, multiple cities), or at a landfill (or in some cases, multiple landfills). However, some authors left out vital information pertaining to exactly where they drew their sample from. Are waste collectors present in all parts of the city or do they tend to congregate in certain areas? This is important information pertaining to the spatial distribution of the sector, which likely varies from city to city. Furthermore, in some pieces, particularly those based on secondary data, the author(s) make no distinction between city-based collectors or landfill-based collectors. This is particularly problematic with respect to recommendations – is the author recommending “X” policy change for all informal waste-recovery actors, or just those working at landfills? The distinction is important, not just for clarity sake, but because the policy recommendations for different actors operating within the informal waste-recovery sector need to be context-specific. For example, a policy recommendation generally aimed at dumpsite waste pickers may not be appropriate for city-based itinerant junk buyers due to the inherent differences between the two occupational categories. Similarly, policy recommendations suggested for the Philippines may not be appropriate in Vietnam due to the differences in the two countries regulatory climates. This is not to say that recommendations can never be generalizable, but care should be taken before making unqualified assumptions.

2.3.2 Data collection methods

Two-thirds of the pieces I analysed included primary data. Qualitative methods (interviews and focus groups) were used in eight articles; solely quantitative methods were utilized for four projects and a mixed-methods approach (typically a survey and interviews) for the remaining eight. Few researchers who used qualitative methods explained what style of interviewing was
used (i.e. unstructured, semi-structured, or structured); those that employed focus-group
discussions and/or group interviews rarely mentioned how many people were present.
Secondary data sources (an author’s past work, or other researchers’ findings) were often
utilized to extrapolate findings beyond the researchers’ original geographical scope.

2.3.3 Translators and research assistants

Less than half (9/20) of the researchers who conducted empirical work mention whether they
used translators and/or research assistants to assist in the data collection. In a few of these
papers, the use of assistants/translators was not explicitly stated and it took a few glances
through the acknowledgement sections to determine if, and how many, assistants were actually
part of the project. Only two authors explicitly noted that they had the appropriate language
skills to undertake the research without the need for assistants. No authors discussed the
problematic nature of translating surveys from the researcher’s native language to the language
used in the country of study; only one study acknowledged the potential problems
(positionality and bias) that can develop as a result of using local assistants, particularly those
with limited social science training or experience working with marginal and misunderstood
populations.

2.3.4 Sample size and sampling method

The sample size, or number of subjects interviewed/surveyed, should represent, particularly in
quantitative research, a certain percentage of the population.\textsuperscript{18} With respect to mobile,
marginal and misunderstood populations, such as informal waste-recovery industries, the total
population is sometimes not known; in other cases, estimates of the population are available,
thanks in large part to previous researchers’ work. Regardless, a discussion of whether

\textsuperscript{18} For example, see Salant and Dillman’s table for sample sizes (1994:55).
population data is available or not warrants some mention, even if only in a footnote; however, only a few authors revealed this information in their work. More importantly, only half of the empirical studies identified their methods for selecting research participants. Of those that employed quantitative methods, only four (4/12) researchers specifically stated that they randomly selected their participants. Only two researchers appeared to employ a random sampling method (i.e. simple, stratified, cluster, etc.) for waste collector populations.\textsuperscript{19}

In terms of qualitative research, again there is a paucity of methodological detail available in the articles reviewed. For example, what illustrative sampling techniques\textsuperscript{20} were employed? In other words, who was recruited and what was the theoretical motivation for doing so? What type of non-probability sampling technique was used – convenience, purposive, quota?\textsuperscript{21} Only Rouse and Ali (2001) provide specific information concerning how they recruited respondents. Furthermore, Rouse (2006: 742) provides some detail on why he used open-ended interview questions and the role of his translator. With respect to both qualitative and quantitative sampling, methods matter. Not only for those who wish to replicate studies, but also for issues of validity and reliability of the work undertaken.\textsuperscript{22}

\textbf{2.3.5 Policy recommendations}

Perhaps the most interesting finding from this sample of literature was the type of policy recommendations made, and by whom. Authors using secondary data were more likely to make recommendations than those who had conducted empirical research (9/10 and 14/20, respectively). Moreover, authors using secondary data were bolder in their recommendations,
calling for “integration” of informal waste-recovery industries into existing formal waste management systems, or wide-spread adoption of cooperatives and/or micro-finance schemes. Alternatively, authors whose work was based on empirical findings were, generally, more cautious in their conclusions and refrained from implying a broad geographical applicability of their findings. Ironically, the studies that provided the most detailed account of their methods in their papers (and the ones, from a statistical point of view, that could justify making generalizations from their research) refrained from making explicit policy recommendations in their work.

While the review presented above is not inclusive of all the literature written on informal waste-recovery industries in the last two decades, it does include some of the seminal pieces of work completed – particularly in Asia. The analysis reveals methodological weaknesses in this body of literature. With the increasing recognition of the importance of this group (in terms of their contribution to cities and, in some countries, to rural communities23), it is imperative that research undertaken accurately represents the actors involved, and that researchers disclose the limitations (both methodological and geographical) of their studies and the potential biases within it, which may impact the conclusions reached, and subsequent recommendations proposed. Although there are significant logistical challenges to conducting research with informal waste-recovery industries, we should not allow these issues to prevent us from producing methodologically sound scholarship.

23 See DiGregorio (1997) for a detailed discussion on the connection between city and countryside for Hanoi’s informal waste-recovery industry.
In the next section I will specifically address some of these ‘logistical challenges’ and discuss the strengths and weaknesses of various methods employed to overcome them, using lessons learnt from my own research as a starting point.

2.4 MOBILE, MARGINAL, AND MISUNDERSTOOD

The mobility of informal study populations are major logistical challenges for many researchers across social science disciplines, in developed and developing countries alike (Hunter and Smith, 2002; Bizier et al., 2004; Jacobsen and Landau, 2003; Landau and Roever, 2004; Magnani et al., 2005). Researchers have devised an equally diverse set of possible solutions to these dual challenges, from combing qualitative and quantitative methodologies to ensure a quality data set (Hunter and Smith, 2002), using non-conventional sampling methods (Jacobsen and Landau, 2003; Bizier et al., 2004; Magnani et al., 2005) to creating original sampling frames (Landau and Roever, 2004). I used each of these ‘solutions’ in the design of my own research for Hanoi’s informal waste-recovery industry.

2.4.1 Addressing mobility issues through research design

Since I wanted to interview people about how the city itself impacted their work, it was imperative that I interviewed respondents while they were living and working in the city. Furthermore, I wanted to interview people throughout the city, given that the experience of a waste collector who primarily worked in central Hanoi could be different from one who
worked in the peri-urban districts. Waste collectors walk and bike anywhere from a few kilometres to twenty to thirty kilometres in a single day in search of waste. Fixed-location waste receivers and sidewalk depot operators (waste intermediaries) are obviously less mobile, but because of their precarious situations some also move around quite frequently.

In order to address this issue, I employed a multi-stage sampling technique in both my surveys to obtain a representative sample (Weisberg et al., 1996). The nine urban districts of Hanoi were subdivided into ‘peri-urban’ (new) and ‘core’ (old) and I selected all four ‘core’ urban districts and randomly selected two of the five ‘peri-urban’ urban districts. My rationale for selecting all four of the core urban districts was because I wanted to be able to make direct comparisons to a study that had been undertaken in these districts in 1992 (DiGregorio, 1994). The second part of multi-stage sampling took place within each district. I sub-divided each district into quarter kilometre square area blocks and mapped this ‘grid’ onto large maps of each district. Because of the variation in size of each of the six districts, I used probability proportionate to size sampling (giving larger districts a greater probability of selection and smaller districts a lower probability) and randomly selected 10 percent of the area blocks in each district, or 77 area blocks in total. Prior to the start of the survey, my research assistants

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24 I hypothesized this because of the massive structural changes that are occurring in the peri-urban districts of Hanoi (Cau Giay, Thanh Xuan, Hoang Mai, Tay Ho, and Long Bien). For example, the built environment of Cau Giay and Thanh Xuan is more similar to core areas of North American cities than they are to the urban form found in central Hanoi (i.e. tall apartment buildings and detached single-family homes connected by large, car-friendly, paved roads; at the far edge of Cau Giay district a “Big C” superstore has been built, replete with an ample size parking lot).

25 Side-walk depots are technically illegal (and may be forced to move if police evict them from their location) in Hanoi and some fixed-location waste intermediaries reported having to move repeatedly because of problems with finding suitable rental properties.

26 Tay Ho, Thanh Xuan, Hoang Mai, Cau Giay, Long Bien

27 Hoan Kiem, Ba Dinh, Dong Da, Hai Ba Trung

28 Randomly selected were: Thanh Xuan and Cau Giay

29 The total number of area blocks in all six districts was 778, ranging from 61 in Hoan Kiem, the smallest district to 180 in Cau Giay, the largest district.
and I spot-checked each area block to ensure that it was accessible. If for some reason the area block could not be accessed (i.e. under construction or barricaded government property), we randomly selected a new area block in the same district.

Once in the designated area block, my team employed a two-stage systematic sampling technique, whereby we started our survey with the second waste collector observed, and then interviewed every second subsequent waste collector. We surveyed in each area block for three hours, with half the area blocks surveyed in the morning and the other half in the evening. An English/Vietnamese copy of the survey can be found in Appendix 2. At the same time, we also did an overall count of the total number of waste collectors observed in each area block, which became the basis for estimating the citywide population. In addition, one research assistant was also given the task of recording all waste receivers observed. Each location was recorded on a sheet and handed in at the end of the shift. This record became our original ‘sampling frame’ for the subsequent waste intermediary survey.

We began the waste intermediary survey with the original sampling frame developed during the waste collector survey. We surveyed 100 percent of the waste intermediaries observed in these randomly selected area blocks. However, the total number of waste intermediaries in these pre-selected area blocks was limited, so we expanded the scope of this survey to encompass 35 percent of the area blocks within the pre-selected districts. Because there was no sampling frame for these new area blocks, we used area block maps (as was done in the waste collector survey) to delineate the physical boundaries of the randomly selected area blocks. All waste

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30 This was done because waste pickers tend to work in the evening (because they wait until the evening to pick from carts and waste bins holding the day’s discarded materials) and junk buyers tend to work during the day (because they buy from businesses and households).
intermediaries residing within these new area blocks were surveyed. Most of the interviews took place between 7am - 10am and 2pm - 5pm. These times were selected since they were non-peak hours of business for most intermediaries. Some sidewalk-depot operators worked later in the evening, so we also made special trips to visit them at their convenience. An English/Vietnamese copy of the survey can be found in Appendix 3.

Respondents for the qualitative interviews were chosen by two different methods. For waste intermediaries, we were able to follow-up with survey respondents who indicated a willingness to participate further in the study. Moreover, we were able to easily return to meet them because of their fixed location. For mobile waste collectors, we were unable to follow-up with respondents who indicated further willingness to participate, despite attempts to find them at their rental houses. As such, we decided to interview in areas of the city that were not randomly selected for the survey. An English version of the interview questions for both waste collectors and waste intermediaries can be found in Appendix 4.

2.4.2 Limitations

By dividing the city into surveyable ‘blocks’, I was able to replicate, albeit on a smaller scale, the traditional census tracts found in many cities. Furthermore, by using probability proportionate to size sampling I avoided over-surveying in any one district. This worked well in the case of Hanoi, given that waste collectors and waste intermediaries operate throughout the city.

However, there were also some weaknesses with this research design that should be acknowledged. First, one of the major problems I encountered in the planning stage was the availability of maps. In Hanoi, it was quite easy to find a tourist map with the original four
urban districts (Hoan Kiem, Ba Dinh, Dong Da and Hai Bai Trung) clearly displayed. However, I ran into problems when I began to search for maps of the newly designated peri-urban districts of Hanoi (Cau Giay, Thanh Xuan, Hoang Mai, Tay Ho, Gia Lam). These maps were nowhere to be found in the ubiquitous bookstores downtown, nor through my government contacts. After a few days, and a few calls to friends, my Vietnamese sponsor was able to track down a small map shop in an alley in Thanh Xuan district. The quality of the maps varied significantly – the maps of the original urban districts being the best. The maps of the new peri-urban districts of Cau Giay and Thanh Xuan were drawn using a larger scale than the core district maps, making the ‘area blocks’ smaller and hence more difficult to read. Compounding this was the fact that many streets are so new that they were not actually written on the map; often streets were drawn in, but without names. As a result of these problems, when it came time for the research assistants to survey within the designated area blocks, they inevitably had a harder time deciphering the maps in the new peri-urban districts and at times ended up surveying outside of their designated area. This narrative points to the importance of knowing the technical limitations of your field site. In this case, it was fair to assume that maps would be available, but I neglected to factor in their quality and how this would inadvertently impact the implementation of my research design.

A second weakness of this research design is the assumption that waste collectors work in the area we happened to find them in at the time of the surveys and interviews. After beginning the surveys, we found that female itinerant junk buyers typically work near their guesthouses, preferring to use baskets suspended from a shoulder pole to hold the waste they buy from households. Many commented that they have a particular route that they follow each day, which they tend not to deviate from. On the other hand, male itinerant junk buyers tend to
use bicycles and reported changing their route often to search for new sources of waste. In particular, itinerant male electronics buyers travel throughout the city in search of electronic items to buy from households and shops. Waste pickers, regardless of gender, also typically transport waste using bicycles. As a result, the assumption that where we stopped people to be surveyed was also the district where they typically work may only be accurate for female itinerant junk buyers.

A related mobility issue to the one mentioned above is the fact that we assumed waste collectors travel either by walking or by bicycle. While there was a category for “by motorbike” on the survey itself, in practice it was almost impossible to capture this segment of the population because of the difficulty of stopping them when we were on foot. While I estimate the number of waste collectors who travel by motorbike to be limited, those that we observed were always men. As a result, we may have unintentionally biased the gender distribution of the survey results, because of our own restricted mobility. Both of these mobility limitations suggest that even with prior field visits and extensive pre-testing, there are sometimes inevitable flaws within a researcher’s project design.

An alternative method I could have employed to reach this mobile population would have been to shift the order of the surveys – conducting the waste intermediary survey first and then surveying waste collectors who sold waste to each intermediary. Because waste intermediaries are for the most part stationary, this alternative research design would have captured waste collectors arriving by foot, by bicycle and by motorbike. This method has been employed in at least one published waste collector study (Medina, 1997) and has been specifically recommended as the preferred method for targeting mobile waste collectors (Medina, 2007:...
However, there are also drawbacks with this approach. For instance, Medina reports in his 1997 study that a number of waste intermediaries refused to be interviewed. As a result, he was not able to survey waste collectors at these locations. This is not problematic if refusals are distributed evenly throughout the city, but in the case of Hanoi, we had multiple refusals within Hoan Kiem district, the city centre. It was impossible to persuade any of the sidewalk-depot operators to allow us to interview them and very few fixed-location receivers agreed. Had I reversed the order of my surveys and only surveyed waste collectors at the businesses of participating waste intermediaries, I would have lost vital information about waste collectors operating in central Hanoi.

This example illustrates how, regardless of the research design employed, some degree of bias is inevitable and, likely, unavoidable. Thus, it is vital for researchers to assess their own particular field site and adapt methods to suit the objectives of their research and the specific constraints of their location. Furthermore, it is imperative that researchers disclose the caveats of their own research when making policy recommendations. In my own research, despite my best efforts, the sampling method used probably underestimated the number of male waste collectors and, because of respondent refusals, we were unable to obtain an accurate representation of waste intermediaries in central Hoan Kiem district.

2.4.3 Marginal and Misunderstood

If we [waste collectors] didn’t do this job in Hanoi, there would be much more waste scattered on the street and the city wouldn’t be as clean as it is now. I can’t understand why Hanoi residents don’t realize

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32 As a result, almost all our fixed-location waste receiver interviews from Hoan Kiem district came from receivers across the river (near Gia Lam district); no sidewalk depots operating in the city centre agreed to be interviewed for this study.
the importance of us. They are not very close or friendly with us (waste collector survey: respondent #54).  

There are inevitable weaknesses in research design that often do not emerge until the research implementation stage. Good research design can reduce problems, but some dilemmas that arise in the implementation stage of research are unexpected and can be beyond the control of the researcher. This is particularly true with respect to marginal and misunderstood populations, such as informal waste-recovery actors. Marginal and misunderstood populations may be subject to emotional disadvantages as an unintended consequence of the research (Curran, 2006), and in some situations the researcher(s) may find it “virtually impossible to intervene when subjects are about to experience harm” (Singleton and Straits, 2005: 520).

Despite attempts by advocates to bestow legitimacy and value on this work, informal waste-recovery industries are still commonly viewed as impediments to modernity, which should be eradicated, not developed or collaborated with (Nas and Jaffe, 2004). Official attitudes towards collaboration with informal waste-recovery industries are still “overwhelmingly hostile” due to the fact that the activities of this group of workers are often “socially stigmatized as dirty, unhealthy, chaotic and illegal” (Baud et al., 2001: 11-12). In Hanoi, only side-walk depot waste receivers operate illegally; waste collectors are tolerated, but typically not supported (however, if a waste collector stops to buy or sell waste materials on the street, they too are in violation of the law); the same is true for fixed-location waste receivers. DiGregorio aptly notes that the contributions of the informal waste-recovery sector are absent from the formal reports and planning documents issued by URENCO, Hanoi’s sanitation

33 In this quote, and in some other quotes in this paper, I have corrected grammatical errors made by research assistants. It should be noted that in all cases where I have done this, I have not altered the underlying sentiment of the quotation.

34 Decision No 63/2003/QĐ-UB dated May 14th, 2003 by the People’s Committee of Hanoi on the regulation of pavement use states: “do not use the pavement and road to open a market, put goods, materials, or waste”. 
authority (1997: 6). As a result of official indifference and poor public acceptance, some waste collectors in Hanoi reported that one of the significant problems they face is public contempt. According to survey results, 36 percent of respondents face some degree of public contempt (when asked the open-ended question: “do you have any problems while doing this job?”), whether it was from residents of the households they buy from (shouting at them, demanding higher prices for waste materials), or from general city residents (evicting them from public areas, or in various ways demonstrating a contemptuous attitude). The dialogue below, captured on voice recorder35, between one of my research assistants and a bystander observing her interview with a waste collector, illustrates one example of this public ridicule:

Local resident: Hey, what are you talking about? What are you doing here?
RA: Hello, we are students doing a project about environment and urban development. [RA turns to speak with the junk buyer] OK, don’t worry, it is ok. No problem.
Local Resident: [speaking to the junk buyer] Leave or the police will come now! You can’t stand here.
RA: Why can’t this junk buyer stand here? [Junk buyer leaves, embarrassed].
Local resident: Because this is a civilized street!
RA: Why can’t this junk buyer stand in a civilized street? Can you tell me why she can’t stand here? She hasn’t done anything wrong.
Local resident: She can go through here but she can’t stand here!
RA: But she isn’t selling or buying anything [this area has signs restricting buying and selling on the street]. We are just talking.

35 I received clear verbal consent from each respondent for conversations recorded on a voice recorder.
Local resident: You can talk but she can’t put her shoulder pole on the street. You don’t understand. This is an area of local management. You don’t know about that even though you are doing this project?
RA: Ok, I don’t understand, so I’m asking you to explain.
Local resident: I just explained it. She can go through here but she can’t stand here (Research assistant #1, October 10th, 2006).

Variations on this type of verbal harassment occurred numerous times throughout the course of the waste collectors survey and interviews. In one interview, this verbal harassment turned physical. This degree of harassment was noted by a few waste collectors during the course of the survey. Only two percent (n=12) of survey respondents reported some variation of (verbal, physical, sexual) harassment. However, given the sensitivity of the subject and the frequency of which it occurred during interviews (we witnessed six cases of harassment during the course of forty-three interviews, or in 14 percent of the interviews) I suspect that harassment was underreported because of either embarrassment, or because respondents have become desensitized to it and consider it part and parcel of working as a waste collector.

However, the most common type of public criticism we witnessed was not the direct attacks on waste collectors, but rather indirect comments made by onlookers. It was quite common for a group of spectators to gather during the course of the survey or interview. Often this was innocent inquisitiveness from other waste collectors or from neighbourhood residents. During these moments, a group would form and everyone would listen to the respondent-interjecting their own thoughts at will. Sometimes we were able to distract their attention, either by simply ignoring them, or engaging them in other topics of conversation. For example, during one survey my use of a slang term for ‘gossip’ had the group of female waste collectors doubled-over in laughter and praising me for my command of Vietnamese street
language (and had the desired effective of diverting their attention, and comments, from the
survey at hand). During another survey, while one of my research assistants interviewed a
waste collector, I engaged two curious security guards in a discussion about differences in
urban form and population density in Canada compared to Vietnam. They not only allowed us
to continue the interview on the private property they were ‘guarding’, but also pointed to
other waste collectors in the area as potential respondents. Again, this demonstrates the
usefulness of having even elementary language skills when conducting cross-cultural research,
albeit for different reasons than most methods guides would suggest.

At times, bystanders’ comments were so intrusive that they interrupted the flow of the
interview. The two cases below illustrate two different reactions that respondents had to this
type of intrusion – one where the respondent was clearly influenced by onlookers’ comments
and another case where bystanders’ comments were effectively ignored:

During the interview, the people working as “xe om” [motorbike taxi
driver] saw our survey and made many comments. I couldn’t hear all
their comments but I felt uncomfortable with these people and also
with the attitude of the junk buyer I interviewed. One of the people
working as “xe om” said to this junk buyer: “APEC [Asia Pacific
Economic Cooperation Conference] is coming in Vietnam, so be
careful with your words. The police may arrest you if you say
something wrong.” The “xe om” also gave comments about two of our
questions. The first was question 25[question about residency], when I
asked this question he laughed and screamed out with an
uncomfortable voice: “It’s unbelievable that a junk buyer can bring
their family to Hanoi. Who believes that? Hahaha…” The second was
the last question [other people’s views about this occupation]. When I
asked the junk buyer this question, she smiled sheepishly and didn’t
know how to answer. The “xe om” said to her with impolite words: “Why are you so stupid? Say that this job can help Hanoi be cleaner. That’s all!” (Research assistant 2, October 18th, 2006).

When I interviewed her, I felt uncomfortable with the “xe om” [motorbike taxi drivers] around us. They were too curious and gave many comments about us and about our interview. For example, they said: “after the interview, how much can you pay for the junk buyer? Can you pay 5000VND [approximately 33 cents] for her or more? (Directed to Carrie)”; “Don’t say too much about your job. The foreigner will bring your story to her country to smear/blacken the Vietnamese image (directed to the Junk Buyer); “Working as junk buyer, she has delicious food like pork pies, eggs, etc. in her meals (He said with derisive and contemptuous voice)”; “You must be careful with your words. They may interview you in order to write an article about you and your job in the newspaper (directed to the Junk Buyer)”. The “xe om” men gave a lot of uncomfortable comments. I couldn’t do anything except for ignore them. The junk buyer seemed ignore them and their comments too and I was glad for that (Research assistant 2, October 23rd, 2006).

2.4.4 Addressing issues of misunderstanding through design & implementation

While the incidents described in the preceding paragraph were beyond our control, there are a few techniques researchers can employ in the design and implementation stages to reduce the frequency and impact of these occurrences.

Proper training of research assistants was vital to reducing the amount, and severity, of potential altercations with the public. Research assistants for the most part ignored disparaging comments and gave no attention to disruptive onlookers. When comments
persisted, they would quickly alert the bystander that we were not interested in their opinion at this point in time. This settled most problems quickly and efficiently, limiting the disruption to the survey or interview taking place. They also made it known to the respondent, through body language, that we were only interested in what he or she was saying. They would face the respondent, or lean towards them when sitting on the ground, creating a close physical connection, while simultaneously physically blocking out others. These seemingly innocuous actions are in fact extremely important when dealing with research subjects as Miller describes in Scott et al. (2006): “My interpreter, who had earlier suggested we ‘had enough’ interviews with landless people, continued to stand, literally standing over the woman and myself. After he refused to sit, I had to politely terminate the interview as his body language was unbearably offensive, yet not before she imparted valuable information about the impacts of irrigation expansion on labourers’ salaries” (37). Overall, the ability of the research assistants to defuse potentially volatile encounters with the public, either verbally or through body language, aided immensely to the reduction of negative incidents with our ‘misunderstood’ population.

The use of open-ended questions and a mixed-methods approach to data collection also aided in reducing the negative impact of public contempt. By utilizing an open-ended question to probe about problems they encountered during working hours “in general” in both the surveys and the interviews, we allowed respondents to self-disclose sensitive issues rather than forcing them to answer directly. Respondents were allowed to refuse to answer the question, or they were permitted to answer without giving significant details about traumatic events. In practice, respondents were quite open with their responses and the answers we obtained from this question were varied and extremely informative – revealing more detail about social exclusion and problems within the industry than I would ever have obtained from asking directly.
Furthermore, employing a mixed-methods approach allowed me to validate the survey results with the more detailed discussions we had during interviews. For example, some survey respondents had told us of the physical harassment that they tolerated from some members of the public, but it was not until we witnessed it first-hand in one of our interviews that we understood how it can happen, its severity, and the emotional impact it can have on the victim. Conversely, had we only conducted a small number of in-depth interviews rather than the larger survey, I would have concluded that waste collectors who face serious public harassment work in central Hanoi, since we witnessed numerous events over the course of the interviews in the core districts, but fewer in the peri-urban districts. However, the survey results showed that respondents faced varying degrees of public contempt throughout the city, not exclusively in the central districts. The importance of triangulation and the benefits of a mixed-methods research design are well known and extensively discussed in recent methods literature (Gaber and Gaber, 1997; Singleton and Straights, 2005; Brewer and Hunter, 2006). Regardless, it is worth restating here, because these techniques are even more important when trying to obtain an accurate understanding (and for insightful policy development) of a mobile, marginal — and most importantly — misunderstood populations.

2.4.5 Limitations

As suggested above, our presence as researchers may have unintentionally contributed to negative verbal exchanges. Rouse and Ali (2001), for example, noted similar problems with respect to the unwanted crowds that developed around their research subjects. In one case,

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36 Three respondents specifically mentioned physical harassment when we asked them the general question: do you experience any problems in this job? A few other respondents also mentioned physical harassment, but more abstractly – speaking about a story of harassment experienced by a friend or relative.

37 After computing a new variable for “all types of harassment”, I ran a cross-tab and found no significant correlation between harassment and district the survey took place in (chi-squared .144).
they report a respondent being so shy and embarrassed by the attention that they terminated the interview. Good research design (including proper training and preparation) reduced the negative impact of public contempt for the most part in the Hanoi study. However, a fundamental ethical precept of human subject research is not to cause those being interviewed any harm, including emotional harm. In working with marginal and misunderstood populations, the researcher must be extremely cautious in this regard, not only in trying to anticipate any special circumstances that might be encountered prior to the commencement of surveys and/or interviews, but also be ready to adapt the research design if any problems develop during the course of the research itself.

An alternative research design may have alleviated some of these ethical issues. Rouse and Ali (2001) are some of the few researchers to have utilized focus groups while researching informal waste collectors. While it is unclear whether they did so in response to the problems encountered with individual interviews, focus groups may be a viable method if they can be held in a neutral location and at a time that is suitable for all participants. In practice, these two conditions will be hard to meet in some cities and within some communities. Alternatively, some researchers have conducted interviews at respondents homes (Hayami et al., 2006); the waste intermediary survey and interviews for the Hanoi study were held at the homes of respondents and, as a result, our respondents experienced no problems with harassment. Yet, there can be problems with this method as well. Hayami et al. (2006), for example, comment that they had difficulty establishing trust in the urban slums waste collectors live in. They argue that unlike rural surveys, where suspicion of researchers can be placated through key informants, they found no such ‘gatekeepers’ for the urban slums they
worked in. Even if gatekeepers can be found, interviewing in someone’s home can be potentially embarrassing as they may feel the need to extend hospitality to the research team.

The lesson learnt from these experiences is that researchers should not be wary of adapting methods to fit a particular context, or adjusting their research design after new information becomes available. In the planning stages of my research, I had intended to incorporate participant observation into my field research. However, after a few months of surveying I decided to remove this technique because it did not suit the context I was working within. I felt that participant observation (whereby we would have essentially worked with waste collectors for a day) was too intrusive, in large part because of my own appearance and the attention I attract on the street, as a white woman. Ultimately, the type of methods a researcher uses to avert ethical dilemmas will have to be context specific.

2.5 CONCLUSION

As I demonstrated through a review of thirty recent publications focusing on the informal waste-recovery sector, authors often fail to include basic information concerning their data collection and sampling methods. This is problematic for two reasons: 1) it thwarts the reliability of researchers’ policy recommendations, which are becoming increasingly relevant as municipal governments search for alternative ways to concurrently achieve sustainable development and poverty alleviation in ‘Southern’ cities; and 2) it does not permit other researchers to replicate studies or to evaluate the researchers’ conclusions. This is important in both quantitative and qualitative studies alike, as we strive to create a more comprehensive understanding of specific experiences or phenomenon (Jacobsen and Landau, 2003);
This second point is important because the review found that the majority of policy recommendations made for informal waste-recovery industries have focussed on actors operating at the lowest level of the hierarchy – waste pickers and junk buyers (i.e. waste collectors). This is mainly because researchers have, for the most part, assumed that they are the most economically, politically and socially vulnerable, likely in large part due to the fact that waste collectors are the most *visibly vulnerable*. The unintended result of the wide range of policy recommendations arising from these studies is that media and policy makers may assume that research conducted with waste collectors represents the totality of informal waste-recovery actors’ experiences. Instead (or in conjunction), we should be asking: what are the consequences for the majority (waste intermediaries, dealers, manufacturers) who were excluded from these studies? As noted by Jacobsen and Landau (2003: 201), “[d]ata that are scientifically and ethically collected create a powerful tool for policymakers”, but policy recommendations which lack the rigor of social science research may prove to be, at best, redundant in actual practice and, at worst, regressive and destructive.

In terms of next steps, I have emphasized throughout the paper that while mobile, marginal and misunderstood populations are difficult to study, it is not impossible to design and implement a rigorous and representative random sample of the population. While I have highlighted, through various limitations sections, that my methods were not perfect, the study is nonetheless valuable, perhaps even more so because of its faults. As such, I strongly recommend that future work published on informal-waste recovery industries contain, at a minimum, the following information in the methodological summary:
1. Where the study was undertaken and which site(s) the principal investigator(s) studied;
2. Detailed information regarding the data collection methods used in the study;
3. Whether translators/research assistants were used in the study and the language competency of the principal investigator(s);
4. The sample size for each type of research undertaken; and,
5. The type of sampling method(s) used by the principal investigator(s) to select respondents.
6. Any ethical problems encountered.
7. Reflections on the strengths and weaknesses of the overall research design and how it could be improved.

Overall, this paper is a call for researchers engaged with research on the informal waste-recovery sector to be transparent with their methodological procedures, and shortcomings. I caution that there is no ‘one right way’ to conduct fieldwork with this marginal, mobile and misunderstood population; rather, researchers should develop context-specific methods which complement their own unique local and particular set of circumstances. Ultimately, a more thorough engagement with research methods, including a commitment to divulging the limitations of studies, will only strengthen this literature – eventually leading to more thoughtful and appropriate policy recommendations for some of the world’s most socially and economically excluded populations.
2.6 REFERENCES


PAPER II

ALTERED LANDSCAPES, ALTERED LIVELIHOODS:
THE SHIFTING EXPERIENCE OF INFORMAL WASTE COLLECTING DURING HANOI’S URBAN TRANSITION
3.1 INTRODUCTION

The year 2006 marked the twentieth anniversary of *Doi Moi*, the economic ‘renovation’ policy officially introduced by the Vietnamese Government in 1986. Twenty years onward, the economic metamorphosis brought about by these policies has profoundly altered the country, particularly the urbanization process in its largest cities. Indeed, it is argued that Vietnam is beginning one of the most intensive urban transitions in the world (Douglass et al., 2002). The country’s official move from an economy based on socialist central planning to one driven by market forces has allowed for “the formation of urban labor markets as well as property markets and markets for goods and services” (Leaf, 2002: 24). There is now a growing body of literature concerned with urbanization processes in contemporary Vietnam. However, much less is known about how Hanoi’s changing economic and urban landscape accommodates labour, and in turn support livelihoods. In this paper I explore the experience of informal labour in Vietnam’s globalizing capital city of Hanoi.

After *Doi Moi*’s introduction in the late 1980s, migration to urban areas became a major form of spatial mobility in Vietnam (ODI, 2006). Much of the migration in the last decade has been spontaneous and often temporary and circular in form (Geertman, 2007; Resurreccion and Khanh, 2007). The growing economic opportunities in Vietnam’s globalizing cities, and the ability to migrate freely as part of the *Doi Moi* package of reforms, have acted as a catalyst for what the popular press has dubbed “ruralization”, of Vietnam’s major cities (Douglass et al., 2002). This concept of “ruralization” refers to two processes: 1) the spatial expansion of the city into areas that were formally regarded as countryside; and 2) the increasing presence of rural commuters and migrants within urban areas engaged in primarily informal activities.
Although migration is not a new phenomenon, particularly to the Red River Delta region of Northern Vietnam (Hardy, 2003), temporary and circular migration is an increasingly popular choice for rural residents aware of the wealth of opportunities in the city, and in need of supplementing their low rural incomes. These migrants, referred to as floating migrants, typically reside in a guesthouse or temporary dwelling, without a household registration book (ho khau) and without registration with local authorities, for a period of time of approximately 1 – 3 months (Geertman, 2007). After a short period of time in the city, many temporary migrants return to the countryside during rice planting and harvest seasons when the demand for labour is highest (Resurreccion, 2005).

One of the many occupations migrants enter into when they arrive in Hanoi is informal waste collecting. Increasing consumption has, unsurprisingly, produced a burgeoning quantity of waste in the city. Remnants from Hanoi’s newly built housing stock, discarded consumer durables, and a miscellany of other leftover materials serve as a visible vestige of Vietnam’s economic growth; a ready labour force to forage for waste is a potent reminder of the social unevenness of rapid and intense development.

Using published empirical data on Hanoi’s informal waste collectors from 1992 (DiGregorio, 1994) and my own data collected on Hanoi’s informal waste collectors in 2006, I investigate how this group is impacted by the changing urban and rural dynamics ushered in by Doi Moi. This paper contributes to a growing body of literature concerned with urbanization processes in contemporary Vietnam (McGee, 1995; Drakakis-Smith and Dixon, 1997; Drummond, 1998; Leaf, 1999; Smith and Scarpaci, 2001; Leaf, 2002; Douglass et al., 2002) while simultaneously

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38 An accurate estimate of the total population of KT4, or temporary, migrants is virtually impossible, given that guesthouse owners, who should register their guests with the police, often fail to do so (Geertman, 2007).
responding to McGee’s (2002) call for more case studies on the impacts of urban processes for individuals in different urban areas of Southeast Asia. As I will discuss later in this paper, migrants’ presence in Hanoi’s informal waste-recovery industry is not a new occurrence; however, the number of migrants undertaking waste-recovery as off-farm employment (usually temporarily, but also permanently in some cases) has substantially increased in recent years. Vietnam’s globalizing economy and urban transition have been a catalyst for this growth, as well as a partial player in the gendering of the industry and the work within it. Overall, the findings of this research suggest that the livelihoods of Hanoi’s informal waste collectors are forged through various processes of change occurring at multiple geographic and economic scales. Before discussing these points in detail, I will briefly discuss some of the characteristics of informal waste-recovery industries and some of the trends in academic literature concerned with this group of urban actors.

3.2 INFORMAL WASTE-RECOVERY ACTIVITIES

3.2.1 Characteristics and Demographics of Informal Waste Collectors

Informal waste-recovery systems operate under economic pressure “motivated by demand for recovered materials and the income needs of the labor force” (DiGregorio, 1994: 58). In Hanoi, this system consists of a complex hierarchy, which includes a three-tiered network of waste collectors (city-based waste pickers, dumpsite pickers, and junk buyers)39, intermediaries (receivers, dumpsite depot operators, and sidewalk depot operators) and dealers (DiGregorio, 1997). Similar hierarchies exist in other cities (Sincular, 1991; Medina, 2000; Li, 2002; Hayami et al., 2006). In this paper I will deal primarily with the bottom tier of the waste-recovery

39 City-based and dump-site-based waste pickers are sometimes referred to as “scavengers”. However, the negative connotations associated with this term have led me to prefer the use of the more neutral term “waste picker”.

system based in the City of Hanoi, and when I refer to this group (city-based waste pickers and junk buyers) collectively I will call them “informal waste collectors”. When the discussion warrants more specified occupational categories, I will use the terms “waste pickers” and “junk buyers”.

Typically, waste pickers scavenge for waste at transfer sites in the city, refuse bins and waste carts, and on the street. They do not purchase waste; rather, their income is derived from the sale of ‘found’ objects. On the other hand, junk buyers, as the name suggests, buy waste. Their customers are typically households, restaurants, small hotels/guest houses and institutions (office buildings, both private- and government-owned). In Hanoi, the iconic junk buyer carries a bamboo shoulder pole with baskets that hang off either side, allowing them to move large quantities of waste at a time (Appendix 5). Traditionally, a waste picker, on the other hand, is someone who uses tongs or iron hooks to search through garbage bins and bags left on the street or in waste transfer areas (Appendix 6). However, these are merely generalizations; in practice, junk buyers also ride bikes and waste pickers do not always use equipment. These occupational categories are flexible since people who are primarily junk buyers sometimes pick waste and waste pickers sometimes engage in junk buying. Regardless of these variations, it is still useful to draw on previously defined occupation categories.

In terms of the demographics of the industry, there are no particular characteristics that can universally apply to all waste collector populations. The task of waste collecting is undertaken by young and old, and as well as by both men and women. In some countries, the occupation is undertaken by a combination of the urban poor and rural migrants; in other countries the occupation is partially fuelled through external migration. In Hanoi, as well as in other
countries, waste collecting is also sometimes undertaken by municipal waste collection workers interested in supplementing their low incomes from the sale of waste. Because few authors carry out large-scale random sample surveys, it is difficult to determine the exact demographics of cities’ waste collector populations. However, prior studies in Vietnam suggest that in the early 1990s, the gender divide amongst waste collectors operating in Hanoi and Ho Chi Minh City was relatively even (DiGregorio, 1994; Mehra et al., 1996). In Hanoi, DiGregorio found that women accounted for 58 percent of surveyed waste collectors. In 2006, my research found that this figure had risen to 94 percent. Moreover, the number of child waste pickers had decreased. Of the 38 interview respondents who were asked about child waste pickers, 28 stated that believed there has been a decline in population of children picking waste in Hanoi (5 respondents did not know, and 5 respondents said the amount of child waste picking had not changed since they started working in Hanoi). This is a shift from the early 1990s when DiGregorio found that more than one quarter of the waste collector population in Hanoi was between the ages of 10 – 19. An analysis of the rationale behind these shifts, particularly the shift in gender, will follow, but at present I would simply like to highlight the fact that waste collecting has increasingly become a gendered occupation in Hanoi, both in terms of the predominance of female workers and the trend to associate particular types of waste and styles of collecting with a particular sex.

3.2.2 Trends in the Literature

As a number of authors point out, official attitudes towards collaboration with informal waste-recovery actors is generally “overwhelmingly hostile” due to the fact that the activities of this

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40 The exact percentage of child waste pickers in Hanoi in 2006 is unknown since I was unable to interview anyone under the age of 18 as per University of Toronto ethical requirements. However, the interview results (noted in the text) and personal observation strongly suggest a stark decline in the number of child waste pickers operating in Hanoi.
group of workers are often “socially stigmatized as dirty, unhealthy, chaotic and illegal” (Baud et al., 2001: 11-12; also see Mehra et al., 1994; Nas and Jaffe, 2004). This group is often seen as a source of embarrassment for cities, and an impediment to development (or modernity), and thus is not recognized for its contribution to urban waste management (Romanos and Chifos, 1996; Ngo, 2001; Nas and Jaffe, 2004; Medina, 2005). As Sincular succinctly notes, “the occupation at once requires and bestows low status” (1991: 139). As a result, a number of authors are now calling for more empirical research in order to place informal waste-recovery industries on the political agenda in developing countries (Nas and Jaffe, 2004; Medina, 2007). Furthermore, they argue that informal waste-recovery industries are integral to sustainable urban development and thus more case studies and comparative research should be conducted to validate and/or expand present contextual models.

Indeed, sustainable urban development is one of the emergent issues found in recent literature concerned with informal waste-recovery activities. Baud et al. (2001) argue that in cases where “informal actors” are integrated\textsuperscript{41} into “formal” waste management systems positive benefits are accrued in terms of both socio-economic and ecological sustainability, and in terms of improved public health. More specifically, they argue that waste collectors can contribute to “cleaner urban neighbourhoods, financial viability [of waste management systems], reduced volumes of disposed waste through recycling, re-use, and composting, and employment creation for predominately poor people” (Ibid: 11). Other authors offer variations on this theme (Kaseva and Gupta, 1996; Medina, 2000; Ojeda-Benitez et al., 2002; Nas and Jaffe, 2004; Medina, 2005; Hayami et al., 2006; Madsen, 2006; Moreno-Sanchez and Maldonado, 2006; Wilson et al., 2006; Medina, 2007). Furedy (1999) argues, “a comprehensive view of

\textsuperscript{41} It should be noted that the term “integration” varies depending on the particular biases and agendas of its users. For a detailed discussion of various interpretations of this word, see Furedy (1997).
MSWM [municipal solid waste management]...would recognize the importance of maintaining and extending all safe practices associated with materials diversion, recovery and recycling in [Asian] cities” (90). Medina (2007) argues that: “scavenging can be a perfect example of sustainable development” (preface/ix). Ironically, while much of the literature on waste collectors now praises their ability to promote a “sustainable” urban environment, urban development itself may pose a threat to some of these workers’ ability to both “sustain” the environment and to “sustain” their livelihoods.

Both DiGregorio (1994) and Furedy (1999) have raised the issue of how urban development may threaten the operation and further development of informal waste-recovery industries.42 DiGregorio, in his 1994 study of Hanoi, noted that road construction had already forced the relocation of recovery operations along the city’s inner ring road; Furedy (1999), speaking more generally of economically developing Asian countries, suggests that changes occurring through urbanization and shifts in planning policy at the international, national, and municipal levels can adversely affect informal waste-recovery activities. Thus, it is increasingly apparent that contemporary processes and patterns of economic and urban development, while valued and desired by some, may involve the construction of barriers for others (Graham and Marvin, 2001). However, what have been neglected in research with waste-recovery industries to date are actual empirical case studies on the impacts of economic and urban change on workers’ livelihoods. Are all waste-recovery actors impacted equally? Or, alternatively, do some people flourish from this change while others flounder? If so, why? What are the conditions that create this inequality? These questions were at the forefront of this research project, and what I will attempt to answer in the remainder of this paper.

42 Additionally, van Horen (2004) discusses the impact of urban development and the fragmentation of urban services in relation to the formal waste management system in Colombo, Sri Lanka.
3.3 RURAL ROOTS, URBAN FUTURE?

3.3.1 The rural roots of Hanoi’s informal waste collectors

In order to understand informal waste recycling in Hanoi, we must first explore the political economy of rural Vietnam. The majority of waste collectors (75 percent in 2006) operating in Hanoi hail from Xuan Truong district in Nam Dinh province (formally known as Nam Ha province), located in the Red River Delta region of Vietnam. At first glance, this occupational choice may seem rather obscure. How did rural farmers (many of them women) from Nam Dinh province find themselves in Hanoi’s informal waste trade? To understand the answer to this question, one must explore the social and economic factors unique to Xuan Truong district and the political shifts that occurred in rural Vietnam more generally. DiGregorio (1994, 1997, and 1998) and Douglass et al. (2002) explain that the catalyst for the formation of this occupation, which later became a village specialization, can be linked to four factors – social networks, population pressures, lack of secondary off-farm employment opportunities, and shifts in post-independence agricultural policies.

The social networks which link Xuan Truong to waste recycling in Hanoi can be traced back over 70 years to one man—Mr. Nam Diem. After he was hired to organize a French-owned sanitation company operating in Hanoi in the 1930s, word travelled back to Nam Dinh province that there were employment opportunities in Hanoi, collecting night soil from public and private latrines throughout the city. As parents worked collecting night soil, their children scavenged for recyclable materials at the landfill and within the city. Some of these children eventually moved into the city and set up waste receiver shops (primarily in O Cho Dua ward
in Dong Da district). These children became some of the first waste collectors and waste intermediaries operating in Hanoi. Today, four out of five waste collectors in Hanoi will tell you that they entered into the waste business through friends and/or relatives; just under half of waste intermediaries were once waste collectors (more specifically, junk buyers) prior to opening their own shops.\textsuperscript{43}

In the second half of the century, increasing population pressure and a lack of secondary off-farm jobs in the district acted as a catalyst for Xuan Truong residents to adopt waste recycling as a village specialization. The Red River delta is the most densely settled geographic region in Vietnam, with an average population density of just over 1000 persons per square kilometre, and Xuan Truong district is among the most densely settled rural districts in this region (Douglass et al., 2002). While most rural residents in Vietnam depend on agriculture for at least part of their income\textsuperscript{44}, residents in Xuan Truong district have found it particularly difficult to survive on wet rice agriculture alone, due to the region’s high population density relative to available agricultural land (Ibid).

Furthermore, unlike other districts in the province (or other provinces in the Red River Delta), Xuan Truong residents had no traditional “handicraft trades”, or locally based small-scale businesses which served to economically cushion the community during the farming off-season, or during years of poor crop yields. While residents in neighbouring Giao Thuy district, for example, were able to depend on income from fishing, residents in landlocked Xuan Truong district had no such alternative. DiGregorio (1998) argues that this is because of

\textsuperscript{43} This figure is based on a random sample of 264 waste intermediaries located throughout Hanoi.
\textsuperscript{44} According to Douglass et al. (2002), roughly 85 percent of households in the Red River Delta depend on agriculture for at least part of their household income (1-22).
the district’s late incorporation into Vietnam’s rice growing peasant economy. This resulted in the district “having large amounts of communal land relative to other areas in the delta” (27). This geographical feature, when merged with the politics of post-independence socialism, created a local economy “heavily dependent on cooperative agriculture and industries” (Ibid). Unable to survive on the outputs of their cooperative units, and without alternative income sources, many Xuan Truong residents found employment outside their district. Hanoi was a favoured locale, primarily because of its close geographic proximity to Xuan Truong, and because of the availability of jobs and their relatively high pay.

As the narrative above highlights, the presence of Xuan Truong waste collectors, which represent most of the informal waste collectors operating in Hanoi, has occurred due to a unique mix of processes – including social (resulting from Mr. Diem’s introduction of Xuan Truong residents to Hanoi’s urban waste infrastructure and informal opportunities in the waste trade); geographical (with respect to the rather inopportune physical geography of Xuan Truong district); economic (regarding the need of Xuan Truong residents to find off-farm employment because of a lack of secondary jobs and the high population density of the region); and political (through the formation of cooperatives under post-independence socialism and the resulting need for alternative sources of income). Similarly, the political economy of waste collectors operating in urban Hanoi consists of multiple processes of change. In the following section I will explore how these multiple processes of change (including economic, political, and social) have, 1) caused the waste collector population in Hanoi to surge in recent years (creating a host of issues as a result); and 2) produced an increasingly gendered waste-economy in Hanoi.
3.3.2 Informal waste collecting in the urban context

I will begin this discussion ‘on the ground’, exploring the mechanics of waste collecting – method of transportation, route of work, and quantity and composition of waste collected. Understanding the modifications waste collectors have made to their work procedure, and their rationale for these shifts, gives us significant insight into how macro changes occurring in the city impact their work. Following this introduction, I will explore the demographic shifts that have occurred in the waste collector population; examine the trend in Hanoi towards a more gendered waste collector population, and the subsequent gendering of the work itself; and finally, discuss city-based politics of exclusion.

Throughout this discussion I will use, when available, figures from earlier work conducted with this same population in 1992 (DiGregorio, 1994). My aim in using this data is to show change over time. While it should be noted that these surveys are not identical in their methodologies45 they nevertheless provide a good comparison between characteristics of waste collectors over a 14-year period of significant socio-economic change in Vietnam.

3.3.2.1 Changing mechanics of waste collecting

In the early 1990s waste collectors made their way through the city primarily by foot. Junk buyers were best recognized by their shoulder poles and hanging baskets; waste pickers by their iron hooks or bamboo tongs (DiGregorio, 1994). While, on average, about a third of waste collectors rode bicycles or cargo bikes, 31.5 percent of waste pickers and 39 percent of itinerant junk buyers walked their daily route (Ibid). This worked well in a relatively small city where informal waste collectors often chose a familiar route to collect waste in and repeatedly

45 DiGregorio employs a non-probability sampling procedure whereas I utilize a probability sampling method.
returned to common customers. However, in 2006 while some waste collectors still report travelling by foot, the ratio of walking to biking had changed dramatically, as seen in Table 1.

Table 1: Percentage of respondents who road bikes, by occupation and sex

<table>
<thead>
<tr>
<th>Bike or Cargo bike</th>
<th>Female Waste Picker (WP)</th>
<th>Female Junk Buyer (JB)</th>
<th>Male Waste Picker (WP)</th>
<th>Male Junk Buyer (JB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992 +</td>
<td>11.6%</td>
<td>15.5%</td>
<td>58.9%</td>
<td>100%</td>
</tr>
<tr>
<td>2006 ++</td>
<td>83.8%</td>
<td>49.4%</td>
<td>100%*</td>
<td>100%</td>
</tr>
</tbody>
</table>

+ Figures for 1992 data in this table and in other tables in this paper are derived from a sample of 82 waste pickers (43 women and 39 men) and 64 junk buyers (45 women and 19 men) (DiGregorio, 1994).
++ Figures for 2006 data in this table and in other tables in this paper are derived from a sample of 91 waste pickers (80 women and 11 men) and 476 junk buyers (449 women and 25 men).
* There are a small number of male waste pickers who walk (personal observation), but our random survey did not capture this group.

There are a number of likely factors for this shift in means of mobility. First, owning a bicycle is more economically feasible for a vast number of people now, including rural migrants. Also, for people that pick and/or buy heavy or cumbersome loads of waste, the bicycle is a much more convenient way to haul materials to waste intermediaries. Another important factor in this change is the fact that as the city expands outward into previously rural areas, and competition increases for waste sources in the central city, some waste collectors need to travel farther in search of waste materials. As one waste collector reports: “I expand my route because I can’t find enough waste in the same places. Sometimes I have to travel as far as 20 kilometres to find waste” (Survey Respondent # 76). The shift towards the use of bicycles may partially explain the drastic change in the number of kilograms the two different occupational groups collect each day. Table 2 details the quantity of waste collected by waste collectors in 1992 and 2006. Similar to the data collected in 1992, there is no significant difference in kilograms collected by sex (women are collecting, on average, 39 kilograms of waste/day whereas men collect 33.5 kilograms/day). However, the difference in kilograms collected between waste pickers and junk buyers is statistically significant (t=-4.392, p=.037).
Table 2: Kilograms collected per day, by occupation

<table>
<thead>
<tr>
<th>Occupational group</th>
<th>1992</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste pickers</td>
<td>13.0 kg/day</td>
<td>24.2 kg/day</td>
</tr>
<tr>
<td>Junk buyers</td>
<td>63.5 kg/day</td>
<td>40.8 kg/day</td>
</tr>
</tbody>
</table>

A decrease in the amount of waste that junk buyers collect cannot be entirely explained by their reluctance to cycle. Many junk buyers reported that there were just too many people buying waste in Hanoi. In fact, of the 46 percent of waste collectors who reported that this job is more difficult now compared to when they started, 42 percent of them told us it was primarily because they believe that there are too many waste collectors in the city. Junk buyers especially felt that it was now more difficult to earn a living with one of every two reporting this opinion, compared to only one of every three waste pickers. Conversely, 45.5 percent of waste pickers reported that the job was now easier compared to when they started, while only 29 percent of junk buyers felt this way.

This point is also reflected in the incomes of waste pickers and junk buyers. While in 1992 the ratio of waste picker to junk buyer income was 0.85:1, in 2006 it was 0.94:1. A waste picker earns an average of 29,890 VND/day (1.87 USD) and a junk buyer earns 31,650 VND/day (1.98 USD). On average, waste pickers work significantly longer than junk buyers (8.9 and 8.1 hours respectively, t=2.801, p=.000) in 2006. Thus, when we calculate the ratio between hourly earnings of waste pickers and junk buyers we find that waste picking is still less profitable (0.84:1, or about 3,358 VND/hour (.21 cents/hour) for a waste picker compared to 3,922 VND/hour (.25 cents/hour) for junk buyers overall. However, this should not negate the fact that survey data reveals some waste pickers feel better off, compared to when they

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46 All currency conversions in this paper have been done at a rate of 16,000 VND to 1 USD.
47 There is no comparable data for 1992.
started picking, as well as compared to junk buyers overall. As mentioned previously, 45.5 percent of waste pickers reported that their job was now easier compared to when they started, compared to only 29 percent of junk buyers. This feeling of improvement can be attributed to both the quantity of materials collected and their fluctuating values; when the price of waste increases waste pickers pocket this increase because the waste they sell is ‘found material’, whereas junk buyers must pass part of the profit back to their sellers. The most common answer waste pickers gave for why their job was easier now compared to when they started was “the price of waste materials had increased”. On the other hand, the most common answer for junk buyers was that they are now “more familiar with the job”. Furthermore, if the price of waste suddenly drops, junk buyers may lose out if they had bought the material from their sellers at a high price, whereas waste pickers have no investment (other than their time) to lose. Increasing fluctuations in the price of waste materials is an important point, and I will return to it again in more detail later in this discussion, but first I want to provide an explanation for the growing population of informal waste collectors in Hanoi.

### 3.3.2.2 Changing population demographics

The increase in informal waste collectors in the city can be explained by a number of factors, both rural and urban in origin. The expansion of the waste business in Hanoi has been affected by major political changes in the 1980s. *Doi Moi*, as mentioned earlier, was a package of reforms implemented in 1986 which opened the Vietnamese economy to international capital, introduced elements of a market economy, and greatly reduced the central control of the state (Drakakis-Smith and Dixon, 1997). Yet *Doi Moi* was not simply a package of new economic policies; rather, it represented a fundamental political and social shift for the country. This shift was felt strongly in rural Vietnam. While social discontent over the failing
cooperative system was already building amongst rural families and acts of resistance were swelling prior to the introduction of *Doi Moi*, the result of these political changes was a wholesale shift in state-formed agricultural policies in the 1980s and 90s. Rural residents were no longer tied (economically or socially) to cooperative units, and by the 1990s farmers were legally entitled to “sell up and leave, temporarily or for good” (Hardy, 2003: 124). Concurrently, economic policies, which now offered low returns from the production of rice, combined with decollectivization acted as a catalyst for rural-urban migration.

Strong fiscal pressure and weak profits came together to favorise rural migration and the informal economy. Three forms of behaviour emerged. Either peasants moved towards production which paid, and fed the urban markets by transporting goods on shoulder poles, or they left the countryside and went to join the cohorts of day-labourers working in the cities…, or they turned directly to the informal economy (Papin, 1999: 157 quoted in Hardy, 2003: 124).

While decollectivization of agriculture and loosening of the household registration system gave rural residents more mobility, the dismantling of the cooperative agricultural system had negative impacts on social services, particularly education. Although social services were generally under-funded in the collective era, they were nonetheless freely accessible to cooperative members (Henin, 2002). Since the introduction of *Doi Moi*, individuals are now faced with the financial burden of paying for services, including education. Many of the waste collectors we spoke with in Hanoi highlighted this problem as one of their reasons for working in Hanoi. Twenty-one percent of the respondents who told us they were not planning to do this job permanently (n=167) said that they would only continue in this job long enough to pay for their children’s education. While this figure does not represent an overwhelming
percentage of informal waste collectors, in fact 99 percent of people told us they save at least some of their monthly earnings to send to their rural-based families or for their families in Hanoi. Informal waste collectors use at least part of these savings to finance their children’s tuition fees and other school expenses for their children (DiGregorio, 1997).

In addition to these major shifts in rural political, economic, and social policy, rapid economic expansion and the ensuing urban development of Hanoi have drawn even more waste collectors to the city. Because of informal waste collectors’ mobility it is difficult to estimate accurately their total population in Hanoi, or any other city for that matter. This is due primarily to the itinerant nature of waste collecting and seasonal fluctuations in population, resulting from their commitments on family farms. In 1992 DiGregorio (1994) employed a random-block population census to estimate the total population of informal waste collectors in the city, comprised of the four central districts, to be approximately 4,800 – 6,000. In 2006, using a similar enumeration method, I estimated the population of informal waste collectors in the same four central districts to be 8,200 people. In the last decade the City of Hanoi has grown substantially, and five new urban districts have been added. Given this addition, the total population of waste collectors in all nine districts in Hanoi is estimated at approximately 22,500.

48 Central districts included: Hoan Kiem, Hai Ba Trung, Dong Da, and Ba Dinh
49 In fact, the figure could be higher given that we counted waste collectors as the same time as interviewing, which likely resulted in an underestimation of the population. Moreover, the survey was conducted in June, when many informal waste collectors had returned to their rural villages to help with seasonal farm activities. As such, this figure is a conservative estimate of the total number of waste collectors working in Hanoi.
50 New urban districts include: Cau Giay, Thanh Xuan, Hoang Mai, Ho Tay, and Long Bien.
51 To extrapolate to the remaining three peri-urban districts not included in the study, I calculated the average ratio of waste collectors to population in Cau Giay and Thanh Xuan (.16:1), using the population figures from the Hanoi Statistical Yearbook (2006). Using the ration of .16:1, I determined that the remaining three peri-urban districts would have a total waste collector population of 8499 (Tay Ho: 1703; Long Bien: 2976; Hoang Mai: 3820).
‘upper tiers’ of the waste-recovery hierarchy, including approximately 1,700 waste intermediaries (including city-based sidewalk depot operators and fixed-location waste receivers) and an unknown number of waste dealers.

Waste collectors tell us their reasons for coming to Hanoi (rather than to other nearby towns or cities) are two-fold: 1) family connections in the business, which helps establish contacts (with both sellers and buyers) and aids immensely with logistical issues of finding suitable accommodation and negotiating new areas of the city; and 2) the quantity and composition of waste in Hanoi. As one junk buyer explains:

I came to Hanoi to work because there is more waste to buy here, compared to my hometown. In my hometown we can’t buy as much iron, because there are fewer houses being built in the countryside. Moreover, the living standards are higher in Hanoi compared to my hometown. The people in Hanoi consume more goods, and as a result, I can buy more waste here (Interview 3, Hoan Kiem District, October 16th, 2006).

3.3.2.3 Gendering of waste work in Hanoi

While there are more waste collectors in the city, the tandem increase in the general population and the move towards a more ‘throw-away’ consumer society should be creating a windfall for informal waste collectors – more garbage and thus more money. However, as the figures in Table 2 suggest, this has not necessarily been the case. While waste pickers are collecting more now than they were 14 years ago, junk buyers appear to be collecting less. Furthermore,

52 The population of waste intermediaries was also calculated using a random-block approach and extrapolated to the remainder of the city using the same method as discussed in the previous footnote.
female waste collectors in general, and female junk buyers in particular, have fared less well than their male counterparts overall. Men and women work, on average, the same amounts of time (8.4 and 8.2 hours/day respectively, $t=-.487, p=.274$), but men earn 39 percent more (49,220 VND compared to 30,040 VND, $t=-4.523, p=.000$). In other words, for every 100 dollars a man makes, a woman will make 61 dollars. This ratio has changed drastically from the early 1990s, when women earned 89 percent of their male counterparts’ salary (DiGregorio, 1994).

This declining income ratio can be explained by two interrelated factors: 1) the declining number of ‘average-earning’ men in the industry; and 2) the type of waste men specialize in. It is also possible that men are simply less visible on the streets, given that some of them are now riding motorcycles to buy waste.\(^{53}\) DiGregorio (1994) estimated the male population of waste collectors at 41.6 percent of the total population. In 2006, the male population was only 6.5 percent of the total population. Table 3 details this change.

**Table 3: Sex of waste collector occupational categories in 1992 and 2006**

<table>
<thead>
<tr>
<th></th>
<th>Female Waste Pickers</th>
<th>Male Waste Pickers</th>
<th>Female Junk Buyers</th>
<th>Male Junk Buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>29%</td>
<td>26%</td>
<td>29%</td>
<td>16%</td>
</tr>
<tr>
<td>2006</td>
<td>14%</td>
<td>2%</td>
<td>79%</td>
<td>5%</td>
</tr>
</tbody>
</table>

The decline in average-earning male waste collectors generally, and male waste pickers in particular can be attributed to the growth of the urban economy and availability of new gendered occupations. Men have moved out of the waste business into other occupations, which have flourished in Vietnam’s new economy. Yesterday’s waste picker is today’s xe om.

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\(^{53}\) While we included a category in our question regarding transportation method for men riding motorcycles, in practice it was impossible for us to interview them, given the fact that the research team travelled by foot. As a result, the survey results may be skewed towards a higher female population. However, our time spent at waste receiver shops leads us to believe that the total percentage of male waste collectors riding motorcycles is still rather low.
(motorbike taxi driver), or construction labourer. Some men have also gone on to open their own waste intermediary shops, often working with their wives and their families in Hanoi.

As female junk buyers explain, the reason why men have moved to other occupations has much to do with socially constructed conceptions of gender and work. “There are more construction sites now and men take these jobs; men think working with waste is not suitable for them” (Interview 2, Thanh Xuan District, October 21, 2006); “Men stay in their hometown and farm while their wives come to Hanoi to work; men don’t want to do unimportant work like cleaning floors and buying junk” (Interview 3, Cau Giay District, October 27, 2006). This gender divide in labour is not a recent phenomenon. Women have historically played an important economic role in the family, generating much of the household income through commerce, handicraft production and agriculture. A Chinese trader to Hanoi in 1688 remarked: “Trade was the domain of women. Even the wives of high-ranking mandarins were not concerned about losing face [through their trading activities]” (Thanh The Vy 1961: 91 quoted in Luong, 2003: 202).

More recently, the two overlapping constructions of gender in Vietnam, Confucian and Socialist, have demanded very high standards from women. “Women are expected to work diligently to better themselves and their families, and to always put their family’s (and often the

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54 According to Schuler et al. (2006) “Confucian history assigned women the values of hard work, chastity and proper behaviour, and focused on women’s role as daughters, mothers and wives. According to the Confucian moral code of the ‘three obediencies’, a woman must show obedience to father before marriage, to husband when married and to the eldest son when widowed. Post-1946 Socialist Vietnam brought about a kind of social emancipation for women; ‘women’s liberation’ and participation in social and political life were important elements in the anti-colonial movement, even though the traditional Confucian role of women as caregivers was still very much emphasized. After liberation, women’s equal rights with men in both the public and private domains were legally recognized...Despite the country’s highly evolved institutional and policy framework for the promotion of women’s interests, a variety of evidence, including findings from our own research, suggests that women at the grassroots level continue to face a range of health, economic and social problems” (384 – 386).
nation’s) interests ahead of their own” (Schuler et al., 2006). Moreover, as Resurreccion and Khanh state: “gender and power relations within the household, as well as wider socio-cultural expectations of women and men, structure the patterns of household labour allocation, entitlements to resources and, consequently, migration” (2007: 213). Thus, the gender imbalance in informal waste collecting is also related to women’s desire, and social responsibility, to better themselves and their families, as well as household-level decisions regarding gendered labour allocation. In other words, women are still willing to engage in the low-status work of waste collecting because a) they do not have access to higher paying jobs in Hanoi, as many male migrants now have the ability to attain; and, b) because they are willing to sacrifice ‘face’ to support their family, ensuring a more promising future for their children. This phenomenon was captured in our discussions with female waste collectors, and simultaneously sheds light on the decline of child waste collectors in Hanoi.

In the past, people in the countryside didn’t have money. They were too poor, so they had to let their children work as waste pickers in Hanoi. Now, all kinds of wastes can be sold and the adults working [as waste collectors] can earn more. Therefore, they let their children go to school (Interview 10, Hoan Kiem District, October 23, 2006).

As for men who have stayed in the waste business, they have, for the most part, tended to specialize in one or two types of waste. This trend to specialize is not new. DiGregorio (1994: 183) reports that in 1992, 42 percent of junkmen specialized in a particular type of waste, compared to only 6.5 percent of junkwomen. Men’s specialization in waste, particularly household electronic waste, elevates their work to more of a craft; women’s lack of specialization is akin to the domestic work that they carry out in the home, whereby they pick
up a miscellany of matters with little ascribed value. Fourteen years later this gendered divided in specialization remains; women continued to collect a miscellany of materials and collect, on average, more waste than men (39 kilograms/day and 33.5 kilograms per/day, respectively), yet they have fallen even further behind men in terms of how much income they earn from this occupation. Why is this?

While we asked about amounts collected for a number of materials (including: carton, paper, plastic, metals, Styrofoam, household electronics, organic waste, plastic bags, glass, cement bags and rubber), statistical tests confirmed only four statistically significant relationships between amounts of material collected and sex. Women were more likely to collect paper and carton, glass and Styrofoam; men, on the other hand, specialize in collecting old electronic equipment and household appliances. Table 4 illustrates the gendered specialization of waste materials.

Table 4: Significant t-tests for sex differences in type of waste collected (2006)

<table>
<thead>
<tr>
<th>Type of material</th>
<th>Sex</th>
<th>Avg. collected (kg/day)</th>
<th>t Values</th>
<th>p Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper and Carton</td>
<td>Women</td>
<td>4.12</td>
<td>2.201</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>2.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>Women</td>
<td>3.37</td>
<td>2.855</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Styrofoam</td>
<td>Women</td>
<td>.31</td>
<td>2.723</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronics</td>
<td>Women</td>
<td>.013</td>
<td>-2.689</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>4.52*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given the difficulty to estimate the actual kilograms of electronic waste collected (often bought by piece, not kilogram), the mean kilograms collected/day could in fact be even higher.

Some of this electronic/appliance waste is repaired and sold to specialty shops. As one electronics buyer reported: “Many households use electronics goods made in China, which
break down quickly. As a result, I can buy more waste” (Survey Respondent # 411). Another electronics buyer speaks to Hanoi’s increasing consumer society: “It’s easier to buy electronics from households now because they are often updating their old appliances and electronics with newer models” (Survey Respondent #297). While electronics/appliance buyers can make good money from repairing old equipment, some electronics buyers also find it lucrative to strip the product for its parts and sell the copper, gold and other precious metals found inside.

The practice of stripping has become even more lucrative with an increasingly open Vietnamese economy. Demand from regional markets, particularly China, has caused the price of ‘in demand’ recyclable materials to increase substantially (Pollack and Bradsher, 2004; Yam, 2005; China Daily, 2006; Recycling International, 2007). Figure 3 shows the prices of various metals in 2007.

**Figure 3: International price per tonne (cash buyer) of various metals (08/2007)**

![Bar chart showing the prices of various metals per tonne](https://www.londonmetalexchange.co.uk/)


Recycled copper, used in the production of cable, wire and electrical products and in the construction industry (for pipes for plumbing, heating and ventilating and for building wire and sheet metal facings) (London Metals Exchange, 2007), has become especially lucrative as it
accounts for “approximately 40 percent of the raw material input of refined copper production and consumption worldwide” (Environment Canada, 2007). Figure 4 illustrates changes in the price of copper over a six-year period from 2005 – 2007.

Figure 4: International price fluctuations (USD/tonne) of 'grade A' copper (cash buyer)

Recycled copper is one of the most profitable (and most volatile) materials traded in Vietnam. Table 5 charts the price fluctuations of copper and other commonly traded waste materials in Vietnam over a period of six months in 2006-2007.

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55 In Italy, ‘copper thieves’ have been pillaging trains, bridges, and construction sites in search of the “red gold” (Simpson, 2006). In Vung Tau, Vietnam soldiers and fisherman had been given permission to salvage unused undersea cables, which were laid before 1975, to sell as scrap. However, this permission has recently been revoked after scavengers in search of copper stole parts of active undersea cables, which provides 80 percent of Vietnam’s internet access, crippling communications in the country (Williams, 2007).
<table>
<thead>
<tr>
<th>Material Types</th>
<th>Dec-06</th>
<th>Jan-07</th>
<th>Feb-07</th>
<th>Mar-07</th>
<th>Apr-07</th>
<th>May-07</th>
<th>Change over six months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>.21</td>
<td>.22</td>
<td>.22</td>
<td>.22</td>
<td>.27</td>
<td>.27</td>
<td>29%</td>
</tr>
<tr>
<td>Scrap iron</td>
<td>.21</td>
<td>.22</td>
<td>.22</td>
<td>.22</td>
<td>.29</td>
<td>.27</td>
<td>38%</td>
</tr>
<tr>
<td>Aluminium cans</td>
<td>.12</td>
<td>.15</td>
<td>.15</td>
<td>.15</td>
<td>.15</td>
<td>.16</td>
<td>33%</td>
</tr>
<tr>
<td>Carton</td>
<td>.09</td>
<td>.08</td>
<td>.08</td>
<td>.08</td>
<td>.09</td>
<td>.08</td>
<td>13%</td>
</tr>
<tr>
<td>Plastic bottles</td>
<td>.37</td>
<td>.37</td>
<td>.38</td>
<td>.38</td>
<td>.41</td>
<td>.44</td>
<td>19%</td>
</tr>
<tr>
<td>Copper</td>
<td>6.25</td>
<td>5.94</td>
<td>4.69</td>
<td>4.84</td>
<td>5.63</td>
<td>6.56</td>
<td>40%</td>
</tr>
<tr>
<td>Yellow copper+</td>
<td>3.75</td>
<td>2.97</td>
<td>2.50</td>
<td>2.50</td>
<td>3.59</td>
<td>4.38</td>
<td>75%</td>
</tr>
</tbody>
</table>

*The prices of the individual waste materials listed here were provided by a receiver working in Cau Giay district.

+ Yellow copper is the colloquial name for different types of minerals and alloys with a high copper content.

A casual observer will notice junk buyers on Hanoi’s street corners stripping old wiring for the valuable copper inside during mid-afternoon breaks; at waste intermediary shops, owners deftly strip off the plastic casing with sharp knives while waiting for customers. Copper is big business in Hanoi’s waste trade.56 While women are collecting from construction sites more than their male counterparts (51 percent and 22 percent of respondents, respectively) men are able to buy directly from institutions liquidating old office equipment (31 percent of men report doing so, compared to only 16 percent of women) and households selling old appliances and electronic items.

This begs the question as to why women are not also specializing in particular wastes, especially the currently lucrative household electronic/appliance waste? The answer to this question lies, again, in informal waste collectors’ gendered notions of work. When asked why they think men specialize in household electronics and women do not, male and female junk

56 While the financial benefits of stripping electronic waste for its parts are clear, the long-term health risks are anything but transparent. Pellow (2006) lists the multitude of health risks that are associated with handling this toxic waste (which can contain such chemicals as lead, beryllium, mercury, cadmium, hexavalent chromium, and brominated-flame retardants), including: damage to the central and peripheral nervous systems, blood stream and kidneys (231). While a detailed health assessment of informal waste collectors was beyond the scope of this research, we should no forget this important and under-researched environmental injustice intimately associated with the informal waste-recovery industry.
buyers alike attributed it to particular gender characteristics, such as knowledge, strength, or the belief that electronics buying is simply ‘men’s work’. Of the eleven respondents who answered this question in the interviews, over half (seven respondents) suggested that men simply had the knowledge to do this work, whereas women did not. Both men and women had similar responses: “Men are good at [breaking down] household electronics. They know what can be reused and repaired; women don’t understand about these things” (Interview 1 (female junk buyer), Thanh Xuan District, October 21st, 2006). The remaining respondents attributed the gender imbalance in collecting household electronics to reasons such as men have more physical strength to lift heavy objects, men prefer to collect this type of waste material, or simply that this is ‘just the way it is’. “Men mainly buy household electronics/appliances because the profit from these items is higher than if they were to only pick waste; men are strong enough to carry these things” (Interview 3 (female junk buyer), Dong Da District, October 9, 2006). “That’s the way it is. Everyone has their job- men’s job is to buy electronic equipment and women’s job is to buy the rest of the junk” (Interview 2 (male junk buyer), Hoan Kiem District, October 16, 2006).

To compensate for lower overall incomes, women employ a number of strategies. First, they tend to be on average better savers. In fact, women save 72 percent of their income compared to an average of only 55 percent for men. Women also tend to minimize their daily expenses. While men will spend 45 percent of their daily income on expenses, women use only 28 percent. Table 6 highlights these gender differences.
**Table 6: Waste collectors' average income, expenses, and savings, by sex (2006)**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Average income/month</th>
<th>Average living expenses/month</th>
<th>Average savings/month*</th>
<th>Percentage income saved/month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>$57.34</td>
<td>$20.74</td>
<td>$41.02</td>
<td>72 %</td>
</tr>
<tr>
<td>Men</td>
<td>$93.94</td>
<td>$41.18</td>
<td>$51.30</td>
<td>55 %</td>
</tr>
</tbody>
</table>

* Average income minus average expenses does not exactly equal average savings because these averages are taken from separate self-disclosed reports of income/savings/expenses. Additionally, average savings for women may also include money earned from part-time work as a maid.

In addition, women are much more likely to take second jobs. In fact, 66 percent of the women surveyed reported having a second job, compared to only 22 percent of men. The most common job they took was part-time work as a maid in a household or an office building. This second job provides them with the benefit of earning extra money and, at the same time, allows them to develop personal relationships with people who could potentially sell (or give) them waste.

The reluctance of women to enter into buying electronic/appliance waste is not only due to their own preconceived notions of gendered work in the waste trade, but also related to the difficulty they face from sellers (usually households) when they attempt to buy electronic waste. “Customers who have electronics/appliances prefer selling to men. Once I cried and begged the seller to let me buy the appliances, but the seller said that they only sell [this type of waste] to men” (Interview 2, Dong Da District, October 13th, 2006). Yet, customers’ attitudes (and the publics’ more generally) also extend beyond simply dictating who should buy what. An air of contempt and disrespect for this occupation permeates most interactions with waste collectors. More than one third (36 percent) of all informal waste collectors reported problems with contempt, when we asked them an open-ended question about what, if any, problems
they encountered throughout their workday.\textsuperscript{57} Despite problems with customers, it is actually female waste pickers (who scavenge for waste, rather than buy it) who experience the most contempt. In fact, 53 percent of female waste pickers reported problems with contempt, compared to 34 percent of female junk buyers (chi-squared = .006).\textsuperscript{58} However, female waste pickers and junk buyers are more likely to experience social contempt than their male counterparts in either occupational category (chi-squared .004). Here we can see the politics of gender and the politics of scavenging merge to create a situation in which some waste collectors find themselves more excluded than others.

\textbf{3.3.2.4 City-based politics of exclusion}

This disregard (for waste collectors generally, and women and waste pickers more specifically) is compounded by the politics of the City of Hanoi and Hanoi’s municipal waste management authority – URENCO. While Hanoi authorities have not permanently expelled waste collectors from central Hanoi, they do exercise, on occasion, their power to do so. Decision No. 63, enacted in 2003 by the People’s Committee of Hanoi, regulates the use of pavements in the city. People cannot use the pavement to buy or sell on the street, or to put goods, materials or waste on the ground. This law is often enforced on vegetable sellers, restaurant owners who expand their seating areas beyond their private shops, and individuals who set up small restaurants daily on city sidewalks, but a few junk buyers have also reported having their

\footnotesize
\textsuperscript{57} Waste collectors defined their experience of contempt both directly and indirectly: they experienced contempt directly through being evicted from public spaces and customers shouting at them; they experienced contempt indirectly through public scorn and when they had to argue excessively with households because customers refused to accept the price offered for waste materials.

\textsuperscript{58} Unfortunately, a comparison between male junk buyers and waste pickers is not possible because of the low male response rate.
pole and baskets confiscated. During special events, waste collectors also describe being asked to leave central areas of the city, such as Hoan Kiem and Hai Ba Trung district. “A few years ago there were some conferences in Vietnam and the police prevented us from collecting waste for several days. I wanted to collect waste so I went anyway, but the police caught me and took me to the police station. I got caught picking waste twice during this time and both times I had to pay 15,000 VND” (.94 USD) (Survey Respondent # 533, Hoan Kiem District); “During the Southeast Asian Games the government prevented us from collecting waste in the old streets of Hanoi. I decided to go anyway and the police caught me. They confiscated my bamboo shoulder pole, but returned it to me later and I didn’t have to pay a fine” (Survey Respondent #540, Hoan Kiem District). While this type of expulsion of waste collectors has yet to occur en masse, the fact that the Government could exercise this power at will leaves informal waste collectors in a precarious position – a job that is quasi-legal and its future existence very much dependent on the political whims of the City.

Indirect exclusion of informal waste collectors by URENCO, Hanoi’s formal waste collection organization, has also played a role in minimizing their status.

While aware of the benefits to both urban and rural communities accruing from recycling, URENCO does not include statistics on private recycling in either its reports or planning. The unintended consequence of this omission is an overstatement of the waste management problem that, at the same time, relegates private sector recycling to the periphery of the state’s development agenda (DiGregorio, 1997: 6).

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59 While waste pickers did not report similar problems (when we asked them the open-ended question about problems experienced on the job), any bans on junk buyers would also impact waste pickers. In fact, bans during national events usually evict all ‘undesirables’, including beggars and other people who earn their living on the street.
However, as DiGregorio (1997) also aptly notes, if city authorities were to suddenly discover the wealth to be had in recycling, they might attempt to monopolize the resource, which would most likely negatively impact waste-recovery actors throughout the hierarchy. In fact, as of 2007, this is beginning to become a reality in Hanoi. In 2007, URENCO and the Japanese International Cooperation Agency (JICA) began piloting a scheme whereby households are asked to separate their wastes into recyclables, organics and residuals. In some selected areas, URENCO collection workers are now collecting and storing recyclable materials themselves, which are subsequently sold directly to a waste intermediary at the end of each month. The implications of this scheme for waste collectors are obviously negative and, if the scheme gets rolled out across the city, it could be economically devastating for waste collectors as it would seriously hinder their ability to earn an income. Because this scheme was implemented after completing my fieldwork, the effects are not captured in my data. Thus, paradoxically, up until very recently URENCO’s (and the City government’s) disregard for informal waste collectors, in effect has allowed them to continue operating.

3.4 SUMMARY AND FINAL THOUGHTS

As I mentioned at the start of this paper, the livelihoods of informal waste collectors are forged through various processes of change occurring at multiple geographic and economic scales. As DiGregorio (1994, 1997, and 1998) and Douglass et al. (2002) have established, informal waste collecting in Vietnam has very deep rural roots. I argue that this informal trade has persisted, and even expanded, in recent decades due to interconnected processes of change, both in urban Hanoi and in rural Vietnam. National level political shifts in rural agricultural policies, implemented (formally) by Đổi Mới reforms acted as a catalyst for the growth of the industry in the 1990s, but these rural-based reforms alone do not explain the
increasing waste collector population. Massive urban development in Hanoi, also an outcome of Doi Moi, and Vietnam’s subsequent re-engagement with regional and global markets, has created wealth in the city and an increasingly affluent consumer society, which is now buying more products and producing more waste than at any other time in the city’s history. Informal waste collectors have benefited directly from increasing urban wealth, and city residents’ ensuing waste. They have also, oddly enough, benefited indirectly from negative social views of their occupation, in that the City of Hanoi has, until very recently, ignored their contribution to waste diversion and for the most part tolerated their presence in the city.

The livelihoods of informal waste collectors as a collective are changing, and so too are the internal dynamics of the occupation. Urban expansion has enlarged some waste collector’s routes, and the increasing population, noted in the preceding paragraph, has altered the quantity of waste collected for some. Moreover, fluctuating prices for waste material has, ironically enough, allowed waste pickers, typically thought to be the worst position in the already low-status work of waste collecting, some economic comfort. Their ability to garner the full price for increasingly valuable waste, while their junk-buying counterparts must pass some of the profit back to their customers, has given waste pickers a sight edge (even if it is only perceived) in the difficult business of waste collecting. However, the most notable (and most surprising) change in the internal dynamics of this work is the gendering of the waste collector population and the increasing divergence between male and female incomes. I contend that the gendering of the waste collector population is due in large part to the exodus of average-earning men from the waste collector population. Men who would have been earning average incomes in the informal waste-recovery trade have left for other work, which they believe is more suitable to their masculine characteristics. As noted earlier, the population
of waste collectors has increased. The increasing population has been primarily women of rural origin in search of flexible work that affords them the freedom to return to their rural-based families throughout the year. The fact that this work is not socially valued does not escape their attention. But unlike men, who have access to a greater number of gendered occupations in an urbanizing Hanoi, rural migrant women with little education and few marketable skills have limited choices.

Many of the men remaining in informal waste collecting earn significantly more than their female counterparts. While there is no data to compare the price of metals over time in Hanoi, it is reasonable to argue that male electronics/appliance buyers could be earning more compared to their female counterparts because of a combination of factors – their ability (and willingness) to capitalize on new sources of waste in the city; their specialization in certain types of waste, which are, relatively, more profitable; a particular mix of macroeconomic shifts which have recently placed a high demand on certain recycled metals, found in electronics equipment, appliances and wiring; and finally, the gendered nature of the business, which elevates the work of men to a craft, affording them the social authority to capitalize on higher-valued waste, or alternatively, the economic means and marketable skills to move up or out of the business altogether. This is not to say that men’s incomes will always remain higher, given that Vietnam’s waste-recovery sector, as a whole, is now tied to increasingly unpredictable international waste-trade markets. As one junk buyer appropriately notes, “the buying and selling price of old household electronics/appliances mostly goes down now because Vietnam is going to join the World Trade Organization (WTO) and the price of new electronics is cheaper [so people buy new appliances instead of repairing their old ones]” (Survey Respondent #297).
Thus, the impact of urban change on informal waste collectors is quite dynamic and very much influenced by place, scale, and social mores (including, in the case of Hanoi, gendered notions of work and societal perceptions towards waste and waste workers). This nuanced understanding of informal waste-recovery is pertinent, as it adds to the growing literature on urbanization processes in Vietnam and its impact on people. At the same time, this study has shed empirical light on the theoretical reflections posed by researchers concerning urban development and its effect on informal waste-recovery actors. The results of this research highlight how the livelihoods of informal waste collectors are very much dependant upon, and determined by, changes occurring at multiple geographic and economic scales.
3.5 REFERENCES


PAPER III

TRADING TRASH IN THE TRANSITION:

ECONOMIC RESTRUCTURING, URBAN SPATIAL TRANSFORMATION, AND THE BOOM AND BUST OF HANOI’S INFORMAL WASTE TRADE
4.1 INTRODUCTION

In the last decade, multiple authors have begun to explore the effects of economic restructuring and changing built form in Southeast Asia, particularly in its capital cities (Dick and Rimmer, 1998; Robinson, 2002; Thompson, 2004; Logan, 2005; Douglass, 2005; Ho, 2005; Shatkin, 2005; Shatkin, 2007). Douglass (2005) argues that the shift from an economy based primarily on commodity trade (resource extraction and agriculture) to an economy based on global finance capital has altered not only local cultural identities, but also the spatial design of Southeast Asian cities. This restructuring of major cities has produced a built environment to “accommodate, support and increase the efficiency of global capital flows” (Ibid: 550).

Vietnam’s urban transition cannot be compared directly to those of its Southeast Asian neighbours (Leaf, 2002; Geertman, 2007). Until two decades ago, Vietnam had been purposefully disconnected from capitalist global economies, unlike many of its Southeast Asian neighbours whose development paths have very much been determined by these trans-national relationships (Leaf, 2002). Vietnam’s re-integration into the global economy, which was officially ushered in by the *Doi Moi* package of reforms introduced in 1986, has occurred during a period of globalization’s most intensive growth. Not surprisingly, this has produced sudden and dramatic change in the country (Leaf, 2002). A small, but growing body of literature documents this shift in the political economy of Vietnam and its varying social and spatial impacts (McGee, 1995; Parenteau et al., 1995; Leaf, 1999; Trinh and Nguyen, 2000; Leaf, 2002; Nguyen, 2002; Nguyen and Kammeier, 2002; Thomas, 2002; Thomas, 2003; Waibel, 2006; Geertman, 2007). However, as Nguyen and Kammeier contend, “the
understanding of the local spatial manifestation of national economic restructuring is still limited (2002: 374).

In this article, I contribute to the growing literature on the socio-spatial effects of economic restructuring in Vietnam through an exploration of the experience of informal labour in Hanoi’s shifting urban landscape. I simultaneously respond to McGee’s (2002) call for more case studies on the impacts of urban processes for individuals in different urban areas of Southeast Asia. Using empirical data collected on Hanoi’s informal waste-recovery industry, I investigate how rapid economic restructuring, and Hanoi’s subsequent urban spatial transformation, has impacted one particular segment of this trade, waste intermediaries. Waste intermediaries are rarely studied in informal waste recovery literature, but their fixed presence in the city (as compared to the relative mobility of waste collectors) means that they experience the effects of spatial change much more so than other actors in the informal waste-recovery trade. My findings suggest that the effect of economic and spatial change on waste intermediaries is complex and multifaceted and cannot be described as a wholly positive or negative experience. Rather, I illustrate how waste intermediaries simultaneously gain and lose (or boom and bust) as a result of the economic restructuring taking place in Vietnam generally, and spatial transformations underway in Hanoi specifically.

Before moving on to the empirical section of this paper, I will first provide more detail on waste intermediaries and how they have been portrayed in the waste-recovery literature. Following this, I will provide more background on economic restructuring and urban spatial

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60 In Vietnam, a complex hierarchy exists in the informal waste-recovery industry, which includes a three-tiered network of waste collectors (waste pickers, dumpsite pickers, and junk buyers), waste intermediaries (receivers, sidewalk depot operators, and dumpsite depot operators) and waste dealers (DiGregorio, 1997). Similar hierarchies exist in other cities (Sincular, 1991; Medina, 2000; Li, 2002).
change in Hanoi, using a case study on peri-urban flower villages (Leaf, 2002) to elucidate the socio-spatial experiences of recent urban change. The remainder of the paper is devoted to my empirical results. I begin by discussing three dominant themes that emerged from the study: 1) issues with housing demand and supply; 2) availability of waste materials; and 3) fluctuations in the price of waste. The analysis suggests that small-scale waste intermediaries are particularly vulnerable with respect to these issues. I then go on to discuss the relevance of location for small-scale intermediaries. I find that changing built form in different areas of the city does have an impact on waste intermediaries, but the relationship is complex and somewhat unexpected. I conclude the paper questioning the urban future of informal waste management.

4.2 WASTE INTERMEDIARIES EXPLORED

Waste intermediaries, as the name suggests, work as intermediaries between waste collectors (waste pickers and junk buyers) and waste dealers/waste manufacturers. They fill an important niche in the informal waste-recovery business – buying, sorting and housing the waste that collectors purchase and/or pick from various sources (both residential and commercial) throughout the city. While waste collectors could earn more money per kilogram of waste if they undertook the activities of intermediaries themselves, many find that their transient existence in the city (due to work and family commitments in their rural villages), lack of start-up capital to finance a new business venture, and limited social networks can prevent them from working as waste intermediaries. As such, waste intermediary businesses have flourished in Hanoi, responding to a demand for collection and storage centres located throughout the city. Many of the people who have filled this void in the market were at one time waste
collectors themselves; 49 percent of waste intermediaries in Hanoi previously worked as junk buyers.

There are two main types of waste intermediaries operating in Hanoi – sidewalk depot operators and fixed-location waste receivers. Sidewalk depot operators set up their business on public sidewalks or on private property throughout the city (Appendix 7). Typically, this occurs in the central districts of Hanoi (Hoan Kiem, Ba Dinh, Hai Ba Trung, and Dong Da), where land is expensive and space is at a premium. Because this practice is technically illegal, sidewalk depot operators often find it necessary to establish special financial relationships with local law enforcement and/or private security guards. Fixed-location waste receivers are much more prevalent in Hanoi (94 percent of survey respondents reported either renting, owning or using a house\textsuperscript{61} for their business), operating their businesses out of space on the ground floor of houses, or in single-storey (temporary or permanent) dwellings, which are typically rented (Appendix 8). Many waste intermediaries collect a variety of waste, including plastics, paper, and metals. Some intermediaries instead prefer to specialize in one or two types of waste.\textsuperscript{62} Unlike many waste collectors, who often simultaneously buy waste from households and/or businesses and pick waste from the street, sidewalk depot operators and fixed-location waste receivers are, for the most part, mutually exclusive occupations.\textsuperscript{63} Because the vast majority of waste intermediaries operating in Hanoi are fixed-location receivers, the remainder of the

\textsuperscript{61}We defined house as any structure that was permanent or semi-permanent, whether it was a house in the classic sense or not. For example, some receivers set up modified tents to conduct their business. If these tents remained in place overnight, then we classified them as receivers. Conversely, if they had to move their business on a daily basis they were classified as sidewalk depot operators.

\textsuperscript{62}This typically occurs when intermediaries from nearby recycling villages set up a shop in central Hanoi (i.e. intermediaries from nearby Trieu Khuc, a plastics recycling village, will specifically buy plastic waste).

\textsuperscript{63}However, we did speak with one sidewalk depot operator who told us that she was also a fixed-location waste receiver and chose to operate the sidewalk depot because her receiver shop was poorly located; some other sidewalk depots come to Hanoi from nearby recycling villages and collect the type of waste their particular village processes (i.e. sidewalk depot operators from Trieu Khuc, a nearby plastics recycling village, will buy plastic and return to their homes in the evening to process it).
The paper will focus on this sub-occupation (unless otherwise specified). I will use the term waste receiver when I am referring to this group specifically and “waste intermediaries” when I discuss the occupation as a whole.

Despite the important role waste intermediaries play in the informal waste-recovery trade, much of the academic and professional literature on informal waste-recovery activities deals exclusively with the bottom tier of the waste-recovery hierarchy, or waste collectors (Huysman, 1994; Kaseva and Gupta, 1996; Adeyemi et al., 2001; Fahmi, 2005; Masocha, 2006). While some authors have conducted qualitative interviews (varying in number) with waste intermediaries as part of their empirical studies focused on waste collectors (Birkbeck, 1978; DiGregorio, 1994; Medina, 1997; Ngo, 2001; Agarwal et al., 2005; Hayami et al., 2006; Rouse 2006), few researchers have looked extensively at the specific experience of waste intermediaries in informal waste-recovery trades, or in changing cities. One exception to this trend is Li (2002) who discusses the connection between dwindling waste intermediary shops (referred to as “redemption depots” in his study) in the core of Wuhan and China’s modernization project in the early 1980s.

The reason for this lack of attention is three-fold. First, waste collectors are much more visible, both in terms of their presence in the city and their economic and social hardship. Dumpsite-based waste pickers, in particular, make for a compelling picture of poverty and inequality in the developing world. Because of their visibility in cities, and their direct contact with waste, waste collectors are often considered a blot on the landscape of the city and consequently are ill-treated by the general public and, in many cases, city governments as well (Baud et al., 2001; Nas and Jaffe, 2004). As a result of their relative lack of visibility, waste
intermediaries (and other actors in cities’ waste-recovery hierarchies) are often forgotten, or sidelines, in informal waste-recovery studies since they, for the most part, work ‘behind the scene’ in cities.

A second, and related reason, for a lack of focused attention on this group is likely due to the fact that they are harder to locate, and thus harder to study. Conducting a representative survey with waste intermediaries takes significantly more time than conducting a similar survey with waste collectors. In two similar periods of time (approximately six weeks), my research team and I were able to conduct 575 surveys with waste collectors, but only 264 surveys with waste intermediaries. Not only did we have to be cautious to arrive within a short window of time when we knew waste intermediaries would be least busy (and thus most likely willing to talk to us), but we also had to search for specific shops within each area block, which often took a considerable amount of time. Some intermediaries are particularly cautious of sharing business/financial information with outsiders. As a result, some researchers have noted difficulties with respect to interviewing this group of urban actors (Medina, 1997). Our own experience in this regard was mixed. While most intermediaries were open to our questions, a few were suspicious of our motives. We faced particular difficulty surveying and interviewing in Hoan Kiem District, the most central district in the city. Few intermediaries west of the highway (a structural barrier dividing the most affluent section of the district (near Hoan Kiem Lake) from the less affluent east-highway section) agreed to be surveyed and none agreed to follow-up interviews. There are a number of reasons for this response: 1) these intermediaries are some of the busiest in the city, given the lack of competition in this area; 2) because of tighter government restrictions in this area of the city, it is possible that intermediaries did not want to draw unnecessary attention to themselves by agreeing to be surveyed/interviewed; 3)
since most research with the informal waste-recovery industry is conducted in the core urban
districts of Hanoi (DiGregorio, 1994; DiGregorio, 1997; Ngo, 2001) it is possible that
intermediaries in this area see limited benefits from giving their time to researchers.

Finally, some authors have demonized waste intermediaries for taking advantage of waste
collectors and forcing them into dependent economic (and social) relationships, which may
have had the unintended effect of stifling research within this occupational category. For
example, Medina argues one of the “generalizations” we can make about waste pickers, or
what he refers to as “scavengers”, is that they can be “grossly exploited by middlemen” (2007:
65) and that “middlemen” should be “circumvent[ed]” to improve waste pickers’ living and
working conditions (2000: 10). While actual documented instances of manipulation or ‘tying’,
a process by where a receiver first ‘ties’ a waste collector to them exclusively by extending
loans and/or other services and then requires waste collectors to accept below-market value
for their waste, do exist to varying degrees (Birkbeck, 1978; Sincular, 1991), we cannot assume
these instances of exploitation represent the totality of experiences for informal waste
collectors operating throughout the world. As DiGregorio (1994) and Li (2002) have noted,
based on their research in Vietnam and China in the 1990s, waste intermediaries (particularly
fixed-location receivers) are very much dependent on waste collectors to ensure a regular
supply of waste material. As such, some intermediaries extend working capital to “trusted
clients”, while others may also offer “ceremonial gifts, cash advances, housing and other social
services”, but this activity is done to improve business relationships rather than to exploit
clients (DiGregorio, 1994: 79). My own research supports these authors’ earlier findings.
Thus, waste intermediaries cannot simply be generalized as the ‘puppet-masters’ of the waste business. Rather, they are very much impacted by a changing city. In the following section I will explore the literature on globalizing cities and spatial change in Hanoi. Following this review, I will position waste intermediaries within these processes of change. The empirical evidence paints a complex picture of the effects of economic restructuring and urban spatial change on this informal trade.

4.3 ECONOMIC & SPATIAL CHANGE IN A GLOBALIZING HANOI

After a relatively slow start to liberalization, the 1990s was a period of dramatic economic change in Vietnam, both in terms of an increase in the quantity of Vietnamese exports, and to the amount of inflows of foreign direct investment (Gainsborough, 2004). The role of the private sector was encouraged through a number of reforms introduced in the late 1980s, which “recognized the long-term importance of private industry, guaranteeing its existence as part of a ‘multi-component economy’ and lifting all limitations on its hiring of labour” (Porter 1993: 149, quoted in Gainsborough, 2004: 41). Suddenly, individuals were legally entitled to take part in the new market-based economy. This involvement ranged from starting their own private businesses, or working with (or more typically for) the burgeoning number of foreign-owned enterprises. Two interdependent processes of change have occurred as a result of this shift in political economy: first, these newfound economic opportunities have translated into increased buying power for a growing segment of the (primarily, but not exclusively) urban population; second, the spatial make-up of the city over a period of a less than a decade has changed dramatically, due in part to changing domestic desires and in part to foreign-direct investment in the city.
Hanoians have used their newfound wealth in a variety of ways. The 1990s saw a massive investment in urban residential construction. The move towards what is referred to as ‘popular housing’, or construction without building permits or proper authorization of land use rights, was swift and extensive (Evertsz, 2000; Trinh, 2001; Leaf, 2002; Schenk, 2005; Geertman, 2007). Leaf describes this process of change in one of Hanoi’s peri-urban districts:

As Hanoi’s economy expanded rapidly over the course of the early 1990s, these flower villages [villages which specialize in flower production] were transformed one by one, as the erstwhile farmers sold off rights to plots of their land. The buyers in these cases were a mix of Hanoi’s newly emerging consumer classes, informal land brokers, and other urban entrepreneurs, who understood the salubrious environs of West Lake to have great market potential. The outcome of this sudden introduction and expansion of market relations in property was the wholesale transformation of the area, with small houses and garden plots of the flower villages replaced by three, four or five storey luxury ‘villas’, intermixed with restaurants, hotels and karaoke bars (Leaf, 2002: 27).

At the same time, foreign-direct investment has brought large-scale housing projects (such as those financed by the Indonesian-based Ciputra Group, as discussed by Leaf, 1996) and commercial development to Hanoi. Trang Tien Plaza, which opened in early 2002 on the site of the former Hanoi State General Department Store, was one of the first luxury shopping malls in the city (Drummond and Thomas, 2003). Numerous others have popped up in the subsequent years. The increased availability of consumer items has been widely embraced, and as Drummond and Thomas argue “the emerging more affluent youth market is hungry for
products…[and] it is clear that consumption has been one of the prime leisure activities of the urban population” (2003: 3).

But Vietnam’s increased economic interdependence with regional and international economic markets does not come without a price, as the residents of the flower villages Leaf describes in the quote above found out during the regional economic crisis of the late 1990s, which caused the international developer to scale back (and then put on hold) the new town project (Leaf, 2002). As Hanoi opened its doors to international investment, it simultaneously ushered in a new era of financial insecurity. In the case of residents of the flower villages, in the post-economic crisis their discussions changed from “ambitious plans for spending compensation money to personal anxieties about living in such volatile economic circumstances” (Ibid: 28).

Much like the residents of the former flower villages, waste intermediaries (and other actors in Hanoi’s informal waste-recovery industry) are positioned (for better and for worse) within a city that is witnessing change on a rapid scale and within an intense period of time. The formation of labour and property markets has provided financial opportunities for Hanoians, unseen in the period of socialist central planning. However, for waste intermediaries, housing demand is outstripping housing supply. In an era of rapid gentrification, fewer and fewer landlords are interested in permitting a garbage business within their dwelling. Many choose to renovate, and find more ‘suitable’ tenants who are willing to pay a premium for their prime location in the city. For those who do find suitable real estate (whether it is in the city centre, or in the newly urbanizing peri-urban districts), there is a plethora of waste in a new period of consumption and disposal. Yet concurrently, the formation of urban labour markets and increased consumption and disposal has drawn a flood of rural migrants to the city in search of
a piece of the growing ‘economic pie’ and, as a result, there is an unprecedented amount of competition within the waste trade. Compounded with these shifts, is the insecurity of the market. Similar to Leaf’s erstwhile flower farmers, waste intermediaries are subject to the boom and bust of regional and international markets – in this particular case, the market for recyclable materials. These factors, along with a changing built environment, have had a profound impact on the formation of this business in a period of market-oriented growth. While the future of waste intermediaries, particularly those operating at the micro-scale is far from certain, the experience of the industry as a whole is particularly nuanced. In the next section, I detail the boom and bust of this trade in the period of Vietnam’s urban transition.

4.4 INTEMEIDIARIES IN FLUX

4.4.1 Winning and Losing in the Waste Trade - Location

The most apt place to begin this discussion is at the site of business – the rental property. The rental property represents the heart of both the business and the family unit for waste intermediaries, as well as for other micro-business owners in Hanoi, which have flourished in a post-

Ten or fifteen years ago, a flat on the second floor in a clean and quiet area would have been ideal for any Hanoian. An ideal house at present must be profit-making, that is, it must assume two functions at the same time: accommodation and business. This house model is known as a ‘house shop’ and is attached to the ‘street-market’ (Trinh and Nguyen, 2001: 63-64, quoted in Schenk, 2005: 64-66).
Amongst waste receivers surveyed, 85 percent rent, while only 4 percent own their home/place of business; the remainder of respondents used their relative’s property (9 percent) or have other arrangements (2 percent). Unlike many waste collectors, who have parents/spouses that look after their children in their hometowns, waste intermediaries often bring their immediate family, sometimes including their school-age children, to Hanoi. In fact, 95 percent of the respondents we surveyed worked/lived with at least one other person and for the vast majority of these respondents (90 percent), the people they worked with were family members (most shops are run by a husband and wife team). While living in close proximity to family is likely an emotional advantage for waste intermediaries (compared to other migrant labour working in the city that often travel without their families), the precariousness of securing long-term rental property is a significant concern for many.

A full 59 percent of waste receivers encountered difficulties finding their current business location, regardless of the particular area of the city they worked in. The most common problem reported was the difficulty of finding a suitable area in which to rent a house for business (38 percent). Respondents reported difficulties finding a neighbourhood with multiple sources of waste that had not already been inundated by other waste intermediaries. They also had difficulty finding a house that was both accessible by truck (used for loading waste materials) and also visible to waste collectors. Because of these particular requirements, many respondents also complained that it took too long to find a suitable rental property (21 percent). Others criticized that few landlords were even willing to rent to waste receivers (15 percent), which compounded the existing difficulties noted above. For those that did find suitable rental property, some noted that the monthly rental charge was too high (16 percent). Others used special agents to help them find suitable rental property, but a hefty commission
caused difficulties for a few (5 percent). Overall, the search for rental property in Hanoi is no easy endeavour. For the 41 percent of respondents who found property easily, the most common explanations they gave were: 1) they had help from a relative, friend, or agent, which eased the pressure of the property search (30 percent); 2) their sheer good luck in finding a suitable location (25 percent); or 3) they used/rented relative’s property (22 percent).

Yet once waste receivers find a suitable rental location, their worries are far from over. During an average of 4.7 years in the business, almost half (47 percent of respondents) reported moving at least once, which again occurred irrespective of district. For most, their reason for moving was directly related to problems with their lease. In many cases, their landlords were the catalyst for the move, either because of 1) their desire to rent the property to another tenant (often at a higher rent) and/or increase the price of rent (13 percent); their aspiration to rebuild on the property (again, related to eventually garnering a higher monthly rent from tenants) (23 percent); or 3) or other reasons for withdrawing the property, which were unknown to our respondents (17 percent).

I think everyone who does this job worries about losing his or her house because a suitable and familiar location plays an important role in this job. If I have to move, I will lose my familiar customers…Yes, I really worry about this problem. However, [the landlord] has the legal right to take back their house or increase the rental fee. For example, the rental fee of our shop on Bach Dang Street was only 800,000 VND per month [50.00 USD] in 2001. But now it’s 2,200,000 VND [137.50 USD] (Interview 3, Hai Ba Trung District, November 3, 2006).
Another major problem respondents reported, which eventually propelled them to move their business, was the fierce competition amongst other waste intermediaries in their previous location (13 percent), which I will discuss in more detail later in this paper. Finally, 15 percent of respondents reported that they were forced to move because of city renovations. This is not surprising given the massive changes underway in Hanoi. Roads are being constructed; bridges are being erected. The structural changes underway in the city are rapid and profound.

The government may soon require us to move in order to build a road for a new urban area. I’m really worried about this. If I move and the government decides not to build here, another intermediary will rent this house and take all my customers. But I don’t have enough money to open another shop and run both this one and the new one, so I have to wait and see what will happen (Interview 1, Cau Giay District, November 1, 2006).

This trend amongst landlords/city government to reclaim and rebuild is problematic for some waste receivers, but not altogether surprising. The average value of land in Vietnam (Hanoi and Ho Chi Minh City) is amongst the highest in the region. The Vietnam Business Forum (2006) reports that office rent in Hanoi/Ho Chi Minh City in 2004 averaged at USD 24.57 per metre squared, per month in 2005. Only Singapore (35.43 m2/month) and China (28.43 m2/month) have higher monthly rental averages in a survey of selected countries from South, Southeast and East Asia (Vietnam, China, India, Indonesia, Malaysia, Philippines, Singapore, and Thailand); the regional average is 19.83 ms/month. While most waste receivers are not forcibly removed from their rental property, they are effectively priced-out of the property market in some areas of the city, which, according to the quantitative findings, occurs irrespective of district. A cross-tabulation between old and new urban areas of the city and


respondents who reported “I face difficulties because my rent is too high” in an open-ended question about difficulties did not yield a statistically significant difference between areas of the city (chi-squared = .339; p=.560). Other chi-squared tests with similar open-ended responses about rent and difficulty finding rental accommodation yielded similar results (i.e. none were significant by area of the city). As such, the quantitative statistics support the qualitative findings, which suggest that regardless of where one is located in the city high rent/finding suitable rental property is a problem. Moreover, while the quantitative data collected from receivers suggests a significant difference (f=6.228; p=.002) between different areas of the city and rental prices (see Table 7), the interviews suggest that this pricing-out is happening throughout Hanoi, and not exclusively within the central business districts (although the serious lack of waste intermediaries in the core is an important point, which I will discuss in more detail later in this paper).

Table 7: Average rental fee paid by waste receivers per month, by area of the city*

<table>
<thead>
<tr>
<th>Area of the city</th>
<th>Average rent/month (VND)</th>
<th>Average rent/month (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central business districts</td>
<td>1,298,000</td>
<td>$81.13</td>
</tr>
<tr>
<td>Core urban districts</td>
<td>1,129,000</td>
<td>$70.56</td>
</tr>
<tr>
<td>New peri-urban districts</td>
<td>886,500</td>
<td>$55.41</td>
</tr>
</tbody>
</table>

* Based on a sample of 242 waste receivers (central business districts: n=36; core urban districts: n=101; peri-urban districts: n=105)

However, not only does this rental insecurity impact a businesses’ bottom line (lost business income due to time spend moving and lost contacts in old area of business), but it also affects the family, particularly if children are present.

I worry about [losing my rental property] very much. I want our life to be stable for at least 5-7 years so that my children can have

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64 All currency conversion in this paper is calculated at a rate of 16,000 VND to one USD, the average rate of exchange in 2006/2007.
favourable conditions for study. But my lease will be terminated in five months because the landlord is planning on building a new house in this location. I can’t be sure about anything in my future because it’s very difficult to find a suitable house to do this job (Interview 4, Cau Giay District, October 28, 2006).

However, for those that can secure prime rental locations, they stand to profit from the increased exposure and proximity to large and valuable sources of waste materials. I will discuss spatial issues in more detail in section 4.4.4, but first I will discuss a second major boom and bust feature of this occupation – competition.

4.4.2 Winning and Losing in the Waste Trade – Consumption and Competition

While many researchers working on issues related to informal waste management discuss the role waste collectors play in sustaining the urban environment (Kaseva and Gupta, 1996; Medina, 2000; Ojeda-Benitez et al., 2002; Nas and Jaffe, 2004; Medina, 2005; Hayami et al., 2006; Madsen, 2006; Moreno-Sanchez and Maldonado, 2006; Wilson et al., 2006; Medina, 2007), few acknowledge the degree to which the informal waste-recovery sector as a whole directly benefits from increasing consumption in the city and the circulatory process of consumption and disposal. In other words, one person’s waste is another person’s resource and the growth of the informal waste-recovery industry in Hanoi (as well as in other cities) is directly related to a growing consumer class juxtaposed with poverty, either urban or rural (or in some cases a combination) in origin.

When we asked waste intermediaries in interviews what impact changes in the city (i.e. new construction, new roads, new consumer products, etc.) on their businesses, the responses were quite positive. For example: “I think these changes are good because I can buy more waste
than before” (Interview 2, Cau Giay District, November 1, 2006). “We can buy more iron, plastics, and paper because there are more construction sites in Hanoi. I find that my business is more successful now” (Interview 3, Cau Giay District, October 28, 2006). “There are now more restaurants and hotels in Hanoi compared to in the past. As a result, I can buy more beer and coca cola cans, particularly during the wedding season [when people consume a lot of these products]” (Interview 2, Hai Ba Trung District, November 3, 2006).

These urban consumption shifts have not gone unnoticed outside of the city, and as a result of this factor, and the particular social, political and economic linkages between Hanoi and nearby provinces engaged in waste recycling activities (DiGregorio, 1994; DiGregorio, 1997; Douglass et al., 2002), thousands of rural migrants flood Hanoi each year in search of employment in the informal waste-recovery sector. Ninety-four percent of waste collectors report they are temporary migrants to the city. Within the waste intermediary population, a similar trend occurs, but their migration is more permanent compared to waste collectors; only 5 percent of respondents report that they are originally from Hanoi. Because of a historically close connection between Hanoi’s informal waste trade and rural villages, particularly in Nam Dinh province, word travels fast that there is money to be made buying and selling waste in Hanoi. Moreover, people watch as their neighbours receive remittances from family members working in Hanoi and realize that they too could earn money to upgrade their houses, pay for their children’s tuition, and support other household needs by working in the city.

65 Temporary circular migration is increasingly a popular choice for rural residents aware of the wealth of opportunities in the city, and in need of supplementing their low rural incomes. These migrants are referred to as KT4, or floating migrants residing in a guest house or temporary dwelling, without a household registration book (ho khau) and without registration with local authorities, for a period of time of approximately 1 – 3 months (Geertman, 2007). After a short period of time in the city, many temporary migrants return to the countryside during rice planting and harvest seasons when the demand for labour is highest (Resurreccion, 2005).
In the past, we couldn’t earn money [in my hometown of Nam True, Nam Dinh]. We didn’t have enough money to supply enough food and clothes for our children. Nowadays we can earn money from this job and more children go to school because we want our children to have good jobs [in the future]…. Five years ago, 50 percent of the population in my hometown worked as waste collectors. Now, 80 percent do this job (the remaining 20 percent are raising their young children and can’t come to Hanoi to work) (Interview 11 (waste collector study), Hoan Kiem District, October 25, 2006).

It is not surprising then that the waste collector population (which we also surveyed in 2006), for example, has increased 400 percent in the last 14 years. While similar data does not exist to compare the growth of the waste intermediary population over time, quantitative and qualitative findings from this research suggest similar population surges within this segment of the waste-recovery industry. For example, when we asked waste intermediaries if their ability to earn an income has become easier, stayed the same, or become more difficult compared to when they started in the business, 60 percent of respondents told us earning an income was now more difficult. Their rationale for this change was simple: more people in the business of buying and sorting waste means less waste to go around (88 percent of respondents attributed their income difficulties to this phenomenon).

The result of this population growth is that while the metaphorical ‘pie’ is indeed expanding due to Hanoi’s increasingly affluent consumer society, the sheer volume of new entrants into the business means that, in practice, their individual ‘slice’ may in fact be decreasing.

There are so many more people who do this job now, compared to before. As a result, the amount of waste I can now buy is only half of
what I used to purchase. Moreover, I have to compete with other intermediaries, so my profit from each individual unit of waste has also decreased (Interview 2, Hai Ba Trung District, November 3, 2006).

In the past this job was easier to do. Now there are too many people doing this job and our profit decreases as a result. I think that this is not just a problem I face. If you meet other intermediaries, I am sure they will tell you the same thing (Interview 2, Dong Da District, November 8, 2006).

As a result of this increasing competition, waste intermediaries employ a number of tactics to entice waste collectors to sell their waste to them. First, they find a visible location for their business. If they cannot find a good location, they improvise. One waste intermediary we met set up a sidewalk depot on a main street due to the misfortune of her main shop being located on a narrow and isolated side street. Others advertise their shop by way of signs, strategically located to guide potential sellers to their location. It was often their signs (reading *sat vun*, or scrap metal), which enabled us to find some of the more remote shops in the city.

Another tactic, which an increasing number of waste intermediaries are finding it necessary to employ, involves temporarily raising the buying prices they pay for waste materials. For example, while the market rate for paper may be 1,500 VND/kilogram a particular waste intermediary may pay 1,700 VND/kilogram to entice waste collectors to their shop. Since the majority of waste intermediaries buy primarily from waste collectors (81 percent reported they
buy the most waste from this group), offering bonuses helps attract customers. Although, it simultaneously impacts businesses' bottom line, as some interview respondents noted:

In the first years of my business I attracted customers by offering them a high price for their waste. I sold at the lower market price and made very little profit (Survey Respondent #41, Dong Da District).

In the first stage of my business I had to attract sellers, so I bought waste at a price higher than my competitors (100 VND/kilogram, equivalent to less than .01 USD), but I made little profit at that time (Survey Respondent #65, Dong Da District).

The growing competition within the informal waste trade is not a wholly negative experience for intermediaries. While waste intermediaries are facing increasing competition from each other for collectors’ waste and contracts with large suppliers, they are benefiting from increased competition one level up the hierarchy, amongst dealers. Waste dealers buy the waste that waste collectors sell to intermediaries and transport it to either local recycling villages (villages surrounding Hanoi that specialize in processing particular types of waste), specific manufacturers, or other markets further up the chain. Waste intermediaries do not have the time or resources to process and deliver materials directly to recycling villages or manufacturers, so they rely on dealers to transport and process their waste materials.

Eager to sell their waste at the highest price possible, more than one third (36 percent) of waste intermediaries shop for dealers offering the best price, much like waste collectors shop for intermediaries. When the waste trade was smaller, this would not have been possible given

66 Far fewer waste intermediaries buy directly from households (two percent), construction sites (seven percent), or office buildings (seven percent).
that far fewer dealers existed. For example, one waste receiver moved his business from a smaller town to Hanoi because in his previous town there was only one trader and the trader “controlled the price of waste materials and always bought my waste at low prices” (Interview 5, Thanh Xuan District, November 1, 2006). In Hanoi, 12 percent of respondents also reported similar problems with dealers. Some respondents complained that dealers owed them money and forced them into financially dependent relationships (i.e. refusing to pay on an old purchase unless intermediaries sold them new waste materials at a below-market price); others felt that the dealers they were working with were untruthful and, as a result, had no choice but to find new people to sell to. Capitalizing on the increased competition amongst dealers, these respondents sought new dealers to work with and garnered a better price for their waste. The remaining 52 percent of intermediaries did not report a change of dealers, preferring to build up strong business relationships so they could be informed when prices changed.

All receivers search for a fair price for their waste materials. However, in many instances it is not the dealers that control the price, but rather the market for recyclable materials, which fluctuates based on international demand and supply.

4.4.3 Winning and Losing in the Waste Trade – Market Fluctuations

A significant risk (and simultaneously potential windfall) that faces waste intermediaries across the city is the frequency of price fluctuations in the market price of waste materials. As the Vietnamese economy becomes more integrated with regional markets, particularly China’s, Hanoi’s waste–recovery sector finds itself intimately connected with international markets for recyclable goods. This can result in a boom or a bust, depending on one’s market savvy and/or sheer luck in predicting when and what to buy and sell.
Waste intermediaries invest their capital in a variety of waste materials, which fluctuate at different rates throughout the year. While waste collectors (specifically junk buyers) also invest capital in fluctuating waste materials, they typically sell materials the same day they purchase them. This practice shields them from some of the volatility in the market. However, waste intermediaries earn profit from bulk selling, and a bulk of materials takes time to accrue. It is only when intermediaries have accumulated a critical mass of waste that dealers will come with trucks (or other vehicles) to buy the waste from them. This does not present much of a problem in a bull market; if waste intermediaries buy waste materials from collectors at a low price and later market prices rise, their patience is rewarded beyond the regular commission they make from waste collectors. However, if prices suddenly drop and intermediaries have bought materials at a high point in the market, they stand to lose substantial profit and in some cases, their invested capital. Table 8 below is an example of the price fluctuations of a selection of waste materials over a six-month period:

<table>
<thead>
<tr>
<th>Material Types</th>
<th>Dec-06</th>
<th>Jan-07</th>
<th>Feb-07</th>
<th>Mar-07</th>
<th>Apr-07</th>
<th>May-07</th>
<th>%Chg (from 12/06 – 05/07)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>.21</td>
<td>.22</td>
<td>.22</td>
<td>.22</td>
<td>.27</td>
<td>.27</td>
<td>29%</td>
</tr>
<tr>
<td>Scrap iron</td>
<td>.21</td>
<td>.22</td>
<td>.22</td>
<td>.22</td>
<td>.29</td>
<td>.27</td>
<td>38%</td>
</tr>
<tr>
<td>Aluminium cans</td>
<td>.12</td>
<td>.15</td>
<td>.15</td>
<td>.15</td>
<td>.15</td>
<td>.16</td>
<td>33%</td>
</tr>
<tr>
<td>Carton</td>
<td>.09</td>
<td>.08</td>
<td>.08</td>
<td>.08</td>
<td>.09</td>
<td>.08</td>
<td>13%</td>
</tr>
<tr>
<td>Plastic bottles</td>
<td>.37</td>
<td>.37</td>
<td>.38</td>
<td>.38</td>
<td>.41</td>
<td>.44</td>
<td>19%</td>
</tr>
<tr>
<td>Copper</td>
<td>6.25</td>
<td>5.94</td>
<td>4.69</td>
<td>4.84</td>
<td>5.63</td>
<td>6.56</td>
<td>40%</td>
</tr>
<tr>
<td>Yellow copper+</td>
<td>3.75</td>
<td>2.97</td>
<td>2.50</td>
<td>2.50</td>
<td>3.59</td>
<td>4.38</td>
<td>75%</td>
</tr>
</tbody>
</table>

*The prices of the individual waste materials listed here were provided by a receiver working in Cau Giay district.
+ Yellow copper is the colloquial name for different types of minerals and alloys with a high copper content.
Using the example of copper from the table above, assume an intermediary purchases 50 kilograms of copper in December (2006) for 6.25 USD/kilogram. At 312.50 USD, or 5,000,000 VND, this represents a substantial investment and much of an intermediary’s working capital. Thinking that the price of copper will likely increase in the coming months, she holds onto the metal. By March (2007) the market price of the metal has dropped. Unable to buy any additional waste until she frees up the capital invested in her substantial copper holdings, she is forced to sell at a price of 4.84 USD/kilogram or 242 USD (3,872,000 VND). The loss on her misfortunate market timing amounts to 70.50 USD, or 1,128,000 VND, which represents more than a month’s rent in most areas of Hanoi. Copper is one of the most profitable (and most volatile) metals traded in Vietnam, and thus the fictional scenario above represents a worst-case scenario for intermediaries. Yet, a number of survey respondents mentioned similar problems:

The price of copper is decreasing, so I keep it in my house and wait for the price to increase again. However, this is difficult because my house is small [and there isn’t a lot of room to hold onto extra waste] and it ties up my capital so I can’t buy as much (Survey Respondent #7, Dong Da District).

One of the main difficulties I face in my business is when I have to close my shop because I have no more capital to buy waste. This happens when all my money is tied up in other waste I have already bought, but not yet sold (Survey Respondent # 25, Dong Da District).
Just less than half of our respondents reported negative outcomes from price fluctuations (47 percent), 53 percent reported that price fluctuations affected them positively, or were not significant enough to cause them economic hardship.

Why some intermediaries reported problems with respect to this phenomenon and others did not is not completely apparent from the quantitative data. Most likely is has much to do with whether they collected waste materials with a fluctuating market price or where they happen to fall on the boom/bust spectrum. If they, by skill or luck, had recently timed the market well, they would likely report positively with respect to this question. Alternatively, if they had just had a string of bad luck and lost money, they would be inclined to report a negative response. It is important to note that two types of waste intermediaries are at an advantage in beating this market uncertainty altogether. The first are those that have enough working capital (and space to house large quantities of waste materials) to ride out the low periods in waste materials’ market price. These intermediaries own and operate large-scale shops, and are relatively few and far between in Hanoi at present. The second are those who have the foresight, and ability, to diversify the type of waste materials and the quantity of materials purchased.

As Vietnam’s economy becomes increasingly integrated into the global economy, and more waste materials are traded internationally, it could very well be that intermediaries who fall into the above-mentioned categories will fare better than smaller waste shops, with small capital investments and relatively limited knowledge of the impacts (positive and negative) of macroeconomic processes on micro businesses. For example, during interviews with receivers,

67 As mentioned previously, some intermediaries, particularly sidewalk depots, sometimes specialize in plastics or paper.
we asked them what kind of impact they perceived Vietnam’s accession to the World Trade Organization (WTO) would have on their business. While a small number of respondents understood the complexity associated with Vietnam’s increasing interaction with regional and international markets, the majority of answers mirrored the following quotes:

I think that there will be no change when Vietnam enters the WTO because sellers simply sell their waste to me and I buy it from them. There are no factors in my work that will be impacted by this process (Interview 4, Thanh Xuan District, October 28, 2006).

To be frank with you, I am not highly educated so I don’t know much about this. Moreover, I don’t pay much attention to this problem because it is a macro issue. I don’t think it has any effect on my business (Interview 2, Hai Ba Trung District, November 3, 2006).

While it is impossible to speculate for certain on the future of this business in Hanoi, it is likely that some waste intermediaries (primarily receivers), using both their large capital reserves and their knowledge and understanding of market forces, will expand their business through large-scale contracts to buy waste from industry and organizations. Currently only 13.4 percent of respondents (primarily from small-scale shops) report buying their largest quantities of waste from these types of suppliers (7.8 percent from offices, 4.3 percent from large construction sites, .9 percent from factories, and .4 percent from hotels). Some receivers we surveyed were already in the process of expanding their business and scouting out new waste suppliers.

I don’t buy much waste from waste collectors because I mainly buy from factories, companies, and construction sites that are liquidating their equipment or selling scrap materials. I can buy a large quantity
of metal from these suppliers. I can buy from these sources because I have many friends working in this sector and we have set up a tight network to support each other…. One of my largest purchases was a ship, which I imported from overseas. I had to hire someone to steer the ship to Vietnam, someone to receive it at the harbour, and people to manoeuvre it onto shore and break it down for parts…. My business is large-scale…if I am successful, I can earn a lot of profit, but if I am unsuccessful of course I risk losing a lot as well (Survey Respondent # 113).

Smaller shops, and owners with less market savvy (and market contacts) rely on waste collectors to supply them with waste material. It will likely be these smaller shops, which will be impacted by changes to the waste collector population (i.e. if they were suddenly banned from working in Hanoi, or squeezed out by the rationalization of source separation and collection schemes initiated by formal waste management activities). For example, URENCO, Hanoi’s public waste management organization, is currently (2007) piloting a scheme whereby URENCO collection workers collect and store recyclable materials, which are then sold directly to a waste receiver at the end of each month. The implications of this scheme for waste collectors are obviously negative, but for waste receivers the outcome is mixed – if this program is rolled-out throughout the city those receivers who can secure contracts with URENCO will obtain a steady stream of waste; those who cannot secure contacts, or who operate at such a small scale that they cannot afford to purchase/store a great volume of waste could lose out. It is also possible that receivers could be bypassed directly, with URENCO selling recyclables for profit directly to dealers and/or recycling villages.68 Moreover, it is these smaller shops which will likely be more directly impacted by changes to the city, both in terms

68 Because this scheme was implemented after completing my fieldwork, the effects are not captured in my data.
of insecurity of land tenure (via opportunist landlords) and by changes to the city itself, including changes in built form. In the next section, I will discuss the impact of a changing city for these intermediaries.

4.4.4 Spatial Change in the City

Because waste collectors operating throughout Hanoi collect, on average, about the same amount of waste (core districts (including central business districts) = 38.61 kg/day, peri-urban districts = 38.56; p=.346, t=.988) the relative success of intermediaries’ businesses are dependent on 1) how successfully they are at selling their waste materials (i.e. their timing of the market and their relationship with dealers, as discussed in the previous sections) and 2) on location. It is this second factor, or location, that I will discuss in depth in this section.

Waste receivers flourish (and flounder) in different areas of the city for remarkably different reasons. While there is no statistically significant difference in total average revenue by area (F=1.004; t=.369), the underlying spatial changes in the city are different and impact waste receivers operating in these areas in diverse ways. In the central business districts, they pay higher rental fees but enjoy less competition and higher waste collector traffic, relative to their peri-urban counterparts. Alternatively, in the peri-urban districts waste receivers have more space to run their business and are located in close proximity to high-value construction waste, which collectors are keen to pick and/or buy. Figure 5 illustrates these different areas of the city.

69 I calculated average revenue by adding categories “rent”, “expenses”, “savings”, and “employee salaries” (where applicable).
Waste receivers operating in Hanoi’s equivalent of a ‘central business district’ (Hoan Kiem and Ba Dinh districts) are at a significant advantage in regard to competition from other intermediaries and foot traffic from waste collectors. With less than one intermediary shop per quarter square kilometre block and an average of eighteen waste collectors passing through each block per hour, waste receivers operating in these two central districts face the least
competition and receive the most business, compared to their counterparts in other areas of the city. Table 9 further details this point.

Table 9: Average number of waste intermediaries and collectors in Hanoi, by area

<table>
<thead>
<tr>
<th>Area of City</th>
<th>Average number of intermediaries/block</th>
<th>Average number of collectors/block (per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central business districts</td>
<td>.9</td>
<td>18</td>
</tr>
<tr>
<td>Core urban districts</td>
<td>1.6</td>
<td>13</td>
</tr>
<tr>
<td>New peri-urban districts</td>
<td>1.6</td>
<td>12</td>
</tr>
</tbody>
</table>

The higher rent in the central business districts (see Table 7) acts as a barrier to entry for many new receivers, while the higher population density and higher per capita income\textsuperscript{70} in these districts simultaneously act as a catalyst, drawing more waste collectors to the area due to the fact that there is more waste to buy. The population density in the core (including the central business districts) is almost triple the density of the peri-urban districts of Hanoi at 31,978 persons/square kilometre and 10,099 persons/square kilometre, respectively (Hanoi Statistical Office, 2006). While waste intermediaries could theoretically offset the high rental fees (and thus the barrier to entry) by acquiring loans, in practice the procedure is often complicated and time-consuming. Less than 10 percent of survey respondents reported having loans. Those with loans sourced them through banks (58 percent), relatives (23 percent), and private lenders (19 percent).

I borrowed 50 million VND [$3,125 USD] from a local bank in my hometown. The procedure for borrowing money is complicated. I don’t even understand exactly how it works, but I do know that I had to correct and resubmit my paperwork at least 10 times. Overall, borrowing is not difficult so long as your house in your hometown is

\textsuperscript{70} HAIDEP reports average income in Hanoi to be approximately 2.5 million VND/month, but states (generally) that incomes are higher in the central districts of Hanoi (Hanoi Urban Environment Fact Book, 2005).
valuable enough to borrow money against it (Interview 3, Ba Dinh District, October 31, 2006).

Moreover, the high population density in the central business district, coupled with tighter government restrictions on ‘proper’ uses of space, makes it difficult to even find a house to rent. The land in the western portions of the central business districts is so densely populated and so valuable that the majority of receivers in this study came from the section of these districts which lie on the east side of the highway, which acts a structural barrier between these districts; very few intermediaries still operate in the heart of these central districts. Those that are located in this highly populated area are found on side streets, hidden from popular view. This spatial trend is not too surprising, nor is it unique to Vietnam. Li (2002), commenting on a similar phenomenon in China, states:

During the modernizing constructions [in China in the early 1980s], the redemption depots [waste receivers] for recycling [were] treated as rubbish and cleaned out from inside cities. Except at the fringes of cities or along some small dirty roads, it is difficult for the public to see the ugly depots in city blocks (320).

How can a waste receiver shop compete for rental space with international retail shops, or luxury hotels and shopping malls, which dot the landscape in these central districts? The central business districts are also the hub of the nation’s government, and home to foreign embassies from around the world. Do waste-recycling businesses fit the image the Vietnamese government wishes to portray to the international community?
Based on Decision No. 63, enacted in 2003, which regulates the use of pavements in Hanoi, it would appear not. The regulation states that people cannot use the pavement to buy or sell on the street, or to put goods, materials, or waste on the ground. This regulation most directly affects sidewalk depot operators, who set up businesses directly on sidewalks in Hanoi (although it could also technically apply to fixed-location receivers who sort waste on the pavement in front of their shops, as seen in Appendix 8). While this regulation technically applies to the entire city of Hanoi, it is in the central business district where signs can be found enforcing it, and where waste collectors from the waste collector survey reported evictions taking place. Thus, while some waste intermediaries are still located in central Hanoi, they are rarely found on the newly gentrified streets in the central business districts. The future for waste intermediaries operating in the central business districts of Hoan Kiem and Ba Dinh is far from certain. They pay higher rent than their counterparts in the rest of the city, and do not see a statistically greater return on their investment ($f=1.004; p=.369$; also see Table 10). While intermediaries operating in the central business districts may have enjoyed a more stable and lucrative business in the past, the twin forces of urban spatial restructuring and tightening government regulation may force the few remaining waste intermediaries from the central business districts to relocate to other districts in the city, or to close their shop entirely.

To some degree, this has already occurred. The waste intermediaries in the core urban districts (Dong Da and Hai Ba Trung) immediately surrounding the central business districts (Hoan Kiem and Ba Dinh) are more populous per block, as seen in Table 9. Moreover, Dong Da District is the historical epicentre of the waste-recovery business in Hanoi (DiGregorio, 1994). As such, a large number of waste intermediaries (and waste collectors) congregate within O Cho Dua ward in this district.
An entirely different urban restructuring is taking place in the peri-urban districts of Hanoi. Relatively low rent, high availability of land, and a surge of waste materials (from construction projects) has resulted in intermediaries flooding into this area. Thanh Xuan and Cau Giay have almost the same ratio of waste intermediaries to waste collectors that are seen in the more established core districts of Dong Da and Hai Ba Trung (Table 3). It is not surprising then that receivers operating in these districts have been doing so for a shorter period of time than those in the core districts (including the central business districts), or 2 years and 3.1 years respectively ($t=-2.085, p=.034$). As mentioned above, while total average income for different areas of the city varies, the variation is not statistically significant, as seen in Table 10.

Table 10: Average revenue of waste intermediaries per month, by area*

<table>
<thead>
<tr>
<th>Area of the City</th>
<th>Average revenue/month (VND)</th>
<th>Average revenue/month (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central business districts</td>
<td>4,080,000</td>
<td>$255.00</td>
</tr>
<tr>
<td>Core urban districts</td>
<td>3,822,000</td>
<td>$238.88</td>
</tr>
<tr>
<td>Peri-urban districts</td>
<td>3,467,000</td>
<td>$216.69</td>
</tr>
</tbody>
</table>

* Based on a sample of 242 waste receivers (central business districts: n=36; core urban districts: n=101; peri-urban districts: n=105)

Why have less experienced waste collectors in the newly developing peri-urban districts fared almost as well as their centrally located counterparts? The answer may have a lot to do with what is collected. Statistical tests from the waste collector survey reveal that collectors in the peri-urban districts collect more metals compared to their centrally located counterparts (9.91 kg/day versus 6.67 kg/day; $t=3.694, p=.001$). Centrally located collectors collect more paper and carton compared to those working in the peri-urban districts (4.7 kg/day versus 3.0 kg/day; $t=-2.003, p=.044$). While we cannot assume that all collectors sell their waste in the same district they buy/pick it in, due to the inherent mobility of the occupation, there is an argument to be made that different development patterns in the city yield different types of waste; established neighbourhoods recycle more consumer products (i.e. newspapers, boxes
from consumer products, etc.) while new construction areas inevitably have more construction debris available for recycling (i.e. scrap metal). As a result, some intermediaries we interviewed told us their ideal rental location would be in a newly urbanizing area.

I really want to live near the construction sites because I can buy more iron, paper and plastics there. This place used to be near a construction site, but now the buildings are mostly completed and there are fewer things to buy. But it is very difficult to find a place to rent, let alone one near a construction site [because the rent is so high] (Interview 3, Cau Giay District, October 28, 2006).

The long-term financial appeal of locating one’s business in newly urbanizing peri-urban districts may be limited, as the above respondent alludes to. Once construction is finished, the quantity of high-valued metal will likely decrease and similar consumption patterns in the central areas of the city will likely exist in the peri-urban areas, albeit on a smaller scale due to a lower overall population density. Moreover, many waste collectors reported problems buying and picking waste from new high-rise apartments due to the heightened security in these buildings.

I only dare to go into the apartment building when someone calls me to come in because if I go alone, that is without a call from a resident in the apartment building, someone may shout at me and call me a thief (Interview 5, Thanh Xuan District, October 21, 2006).

In the past I could buy more waste from apartment buildings (in Trung Hoa, Nhan Chinh and Trung Yen) because I often sat outside and waited for people to bring me waste. But now the guards of these buildings don’t allow me to sit outside. They say that I make
the scenery around the building less beautiful (Interview 7, Thanh Xuan District, October 21, 2006).

The fact that these buildings are now increasingly common in peri-urban districts such as Thanh Xuan, Tay Ho and Cau Giay presents a problem for waste collectors working in these areas, and the waste receivers who depend on their waste.

4.5 URBAN FUTURE OF INFORMAL WASTE MANAGEMENT?

The economic success and business future of small-scale waste intermediaries is far from certain, both in the central areas of the city or in the newly urbanizing peri-urban districts. Waste receivers face significant problems finding suitable rental locations for their businesses as the city gentrifies and rental fees for prime locations soar; sidewalk depot operators operate illegally on the pavement in a city that is increasingly concerned with the image it presents to the world. In the central business districts, intermediaries are effectively shut out. This is due to the interconnected factors of high rental fees, scarce land (due to high population density), and stricter government regulations. In the peri-urban districts, lower rental fees, abundant land, and high value construction waste has drawn many waste receivers to this district as of late. However, new built form in this area is already limiting access to waste, and once construction halts (moving into the suburban districts of the city), the high value scrap metal boom that intermediaries are currently profiting from will likely dissipate.

While intermediaries benefit indirectly from increasing consumption and disposal practices in the city, they simultaneously find themselves competing with a growing number of intermediary businesses, which have been established by like-minded rural migrants in search
of income to offset the low profit earned from agricultural activities in their home provinces. With no quantitative data to compare revenue over time, it is hard to say which external force is stronger – increased consumption or increased competition. The qualitative results suggest that the gains made from increasing quantities of waste are overshadowed by the serious competition in the business. Compounding these issues is Vietnam’s increased interconnectedness with regional and international markets for recyclable materials. Rather than selling domestically to state-owned operations with set quotas, intermediaries operating in today’s open economy are subject to the booms and bust of the international market. If they have the capital, space, and market savvy to compete, they manage quite well; if they are one of the numerous small-scale shops with narrow storefronts, limited working capital, and poor knowledge of macro-economic trends in the market, their future is rather precarious.

There are a few potential outcomes from these multiple issues noted above. First, it is possible that intermediaries from both the urban business districts and peri-urban districts could migrate into the core districts of Dong Da and Hai Ba Trung, causing excessive competition and likely stifling much of the business. Alternatively, intermediaries could migrate out of the city altogether, relocating in the growing suburban districts of Hanoi. While each of these scenarios is possible, it is impossible to predict for certain the future of the business given the complex processes of change at play in the city. However, what we can ascertain from this research is that waste intermediaries are not created equal. Small-scale intermediaries are especially vulnerable to both macroeconomic shifts and to the urban spatial transformation currently underway in Hanoi. Small-scale intermediaries operating in the central businesses districts or along key development corridors in the city are at particular risk.
The implications for informal waste management should not be underestimated. If, for example, intermediaries are pushed out of the central business districts (either by government regulation, or by market-led gentrification) the thousands of waste collectors working in these districts will have no convenient location to sell their materials. In Wuhan, China the decline of centrally located waste receivers has meant that waste collectors have had to increase the area in which they collect. This has disadvantaged older junk buyers who cannot physically compete with their strong, youthful counterparts (Li, 2002). Moreover, if large-scale intermediary shops are the future for Hanoi, what will become of the thousands of rural migrants who depend on these flexible, low-skill jobs, which requires limited capital investment for (relatively) major economic returns? Thus, the future of small-scale intermediaries in Hanoi is very much the future of waste collectors as well. These occupations are intimately connected, and very much dependent upon a particular built environment in the city, which is currently undergoing rapid transformation.
4.6 REFERENCES


CONCLUSION
5.1 URBAN FUTURES?

Peruse the headlines of the Vietnam Times, Vietnam’s English language newspaper, and you’ll find numerous debates on the urban future of Hanoi. Articles highlight how Hanoi will beat national targets and become an “industrialized and modern city” by 2015 (Vietnam News, 2006; 1). Articles discuss urban planners’ hopes to implement major infrastructure projects and how city development plans foresee industrial sprawl pushing beyond the borders of the capital. Photos are shown of new residential towns, such as the construction of An Khanh town costing US$2 billion. In the summer of 2006, a full cover story was devoted to artists’ visions of a new Hanoi. The imagery is very much in line with industrialized countries’ capital cities:

Like Paris or Manhattan, a river will flow through the centre of Hanoi, and tourists will be able to enjoy views of the city from boat rides up and down the Hong (Red) River. On the two banks stand hundreds of sky-scrapers, casting their glittering shadows into the blue sky and reflecting off the river. The three vast strips of land in the middle of the river are no longer pieces of wasteland; they have become cultural and economic centres, where scores of supermarkets, exhibition houses, entertainment complexes and a television tower reside (Cam, 2006).

What receives less attention in the news is the human dimension of development. Or perhaps more specifically, the specific experiences of the poor in a modernizing city. Much attention, particularly in the popular media, has been given to the massive changes underway in Vietnam’s cities, but limited discussion has focused on the interplay between economic processes (and the resulting structural changes) and local forms of labour in these major cities.
This dissertation contributes to our understanding of how oft-forgotten participants in cities are affected by, and adapt to, urban change.

5.2 SUMMARY OF RESEARCH AND RECURRING THEMES

In this dissertation, I have explored how broader (and often unchallenged) changes to political economy at multiple geographic and economic scales impact long-standing ‘informal’ practices of waste recovery and recycling in Hanoi, Vietnam. This study, which is based on quantitative and qualitative research with four distinct sub-occupations (waste pickers, junk buyers, waste receivers, and sidewalk depot operators) operating at two different levels within Hanoi’s waste-recovery hierarchy, suggests that the livelihoods of informal waste-recovery workers are both directly and indirectly impacted by shifts in political economy, albeit these impacts (both positive and negative) vary by sex and sub-occupation (with respect to waste collectors), and scale of business and location in the city (with respect to waste intermediaries).

In paper II, I argue that female junk buyers have been the most economically disadvantaged from economic and urban restructuring in the city. This is due in large part because they are unable to capitalize on the most lucrative waste markets or develop long-term relationships with high-volume sellers. Conversely, I argue that male electronics/appliance buyers are earning more than their female counterparts because 1) they are able (and willing) to capitalize on new sources of waste in the city; 2) they specialize in certain types of waste, which tend to be more profitable than the types of waste women typically specialize in (if they specialize at all); 3) macroeconomic shifts have placed a higher demand on certain recycled materials, which are commonly found in electronics equipment, appliances, and wiring; and 4) traditional gender roles, which allow men the social authority to capitalize on higher-valued waste, or the
ability to move out of the waste business completely. To cope with low incomes, female waste collectors (primarily female junk buyers) have resorted to finding secondary employment to offset their low incomes from waste collecting. In some ways this secondary employment, which is typically housekeeping, can be advantageous in that it allows them to establish contacts with new waste sellers and allows them priority status to buy waste from these sellers. However, overall I conclude that this secondary employment does not sufficiently compensate for low female incomes in the waste-recovery trade and merely creates a situation in which women are working more hours, compared to their male counterparts, with limited additional financial benefits.

In papers II and III, I argue that the livelihoods of informal waste-recovery workers are both indirectly and directly impacted by shifts in political economy and urban restructuring. Specifically, in paper II I contend that not only has the waste collector population increased dramatically in the last decade, but that it has also undergone significant changes, including shifts in method of transportation, amount of waste collected, and income earned by sex. Both the increase in the population of waste collectors and the changes within the occupation itself are a result of six interrelated processes of change, which I highlight in the paper, including: 1) national level political shifts in rural agricultural policies, implemented by Doi Moi reforms; 2) the urban development of Hanoi; 3) an increasingly affluent consumer society in Hanoi; 4) Vietnam’s economic re-engagement with regional and global commodity markets (again, brought about by Doi Moi reforms); 5) gender politics in Vietnam; and 6) city-based politics, which essentially endorses the social contempt some city residents show towards waste collectors.
In paper III, I argue that shifts in political economy and urban restructuring in the city also impact waste intermediaries operating at the next level up the waste-recovery hierarchy. In other words, where a business is located in the city, and its relative size, will influence income and success more so than the owners’ gender or type of business. However, these findings should not suggest that gender ceases to be an issue one level up the waste-recovery hierarchy; rather, because many waste intermediary shops are run by a husband and wife team, I could not adequately analyze gender. Similarly, because there are so few sidewalk depot shops operating in Hanoi, I could not compare sidewalk depots to waste receivers because of the lack of cases in the former group.

Overall, I found that three major issues repeatedly surfaced in the quantitative and qualitative research: issues with housing demand and supply, availability of waste materials, and fluctuations in the price of waste. I argue that each of these issues is intimately connected to the economic and urban spatial restructuring currently underway in Hanoi. While I found that the impact of these issues has influenced waste intermediaries both positively and negatively, I argue that smaller shops with small capital investments and limited knowledge of the impacts of macroeconomic processes will perform worse than larger businesses with more market savvy and social capital. Smaller shops that depend primarily upon waste collectors for waste materials will also be impacted by changes to the waste collector population. These smaller shops will also be more directly impacted by changes to the city (i.e. through insecurity of land tenure and changes in the built form of the city).

Spatial change in the city is significantly impacting the locational strategy of waste intermediaries. I argue that the economic future of small-scale waste intermediaries in both the
central areas of the city and the newly urbanizing peri-urban districts is far from certain. In the central business districts, waste receivers encounter significant problems finding suitable rental locations for their businesses as the city gentrifies and rental fees in prime locations (i.e. city centre and along popular transportation corridors) increase. In these districts, high rental fees combined with scarce land availability (due to high population density) and stricter government regulations effectively prevents all but a few waste intermediaries from operating. In the peri-urban districts, lower rental fees, relatively abundant land and high-value construction waste has resulted in a flood of waste intermediaries (primarily waste receivers) into these areas. However, I argue that new built form in these districts is already limiting access to waste (i.e. waste collectors are often banned from collecting waste from high-rise apartments, which dot the landscape in these districts). Once new construction halts (moving into the suburban districts of the city), the high-value scrap metal boom intermediaries are currently profiting from will likely dissipate.

A secondary theme, which runs through all three papers in this dissertation, is a critical analysis of waste-recovery literature. In each paper, I approach my critique from a unique angle – in paper I, through a review of methods; in paper III, through exposing the gap that exists in the literature in terms of the lack of focus on waste intermediaries; and in papers II and III, through refocusing informal waste-recovery research within the context of the city and broader geographic scales.

Specifically, in paper I, I argue that there are methodological weaknesses in the majority of the 30 papers reviewed. I note problems with disclosing sites of study, data collection methods, and use of translators and/or research assistants. Moreover, I discuss methodological
problems with some of these studies’ sampling methodology and ethical problems with respect to the types of recommendations made by some researchers. I argue that these methodological missteps are problematic because they 1) impede the reliability of researchers’ policy recommendations, which are becoming increasingly relevant as municipal governments search for alternative approaches to sustainable development and poverty alleviation in cities; and 2) do not allow other researchers to replicate studies or to effectively evaluate the conclusions and/or policy recommendations researchers have proposed.

In paper III, I highlight the preferential focus in waste-recovery literature towards waste collectors, typically at the expense of a detailed analysis of other occupations within the waste-recovery hierarchy. The rationale for this lack of attention is three-fold: 1) informal waste collectors are more visible, both with respect to their presence in the city and their economic and social hardship; 2) waste intermediaries are harder to locate and thus harder to study; and 3) waste intermediaries have been demonized in some waste-recovery literature for taking advantage of waste collectors, which may have had the unintended effect of stifling research with this sub-occupation. In the remainder of paper III and in paper II, I turn my analysis to the city (and in the case of paper II, to rural areas as well) and explore how livelihoods are impacted by a changing city and by transformations to national and international political economy. This type of analysis is a critique of much of the current waste-recovery literature, which often fails to consider the impact of place and scale on waste-recovery workers’ livelihoods.

Moreover, this research, which builds on the work of DiGregorio (1994, 1997) and other researchers entrenched in understanding the connections between the informal waste-recovery
activities and the urban economy (i.e. Birkbeck, 1978; Sinclair, 1991), adds the component of built form to the debate surrounding the future of informal waste-recovery. More specifically, earlier work in this field suggested that rationalization (i.e. mechanization) of waste management organizations in cities would cause friction between formal and informal waste management systems (Birkbeck, 1978; Furedy, 1993). DiGregorio, in his 1994 study of Hanoi, Vietnam noted that one of the emerging issues may be the negative impact of urban development on both the operation and financial viability of waste-recovery businesses; Furedy (1999), speaking more generally of developing Asian countries, speculated that changes occurring through urbanization and shifts in planning policy at the international, national, and municipal levels could adversely affect informal waste-recovery activities. This research represents the first empirical study conducted on the impact of urban change for informal waste-recovery workers and measures this impact for two distinct levels of the waste-recovery hierarchy.

5.3 POLICY IMPLICATIONS

In paper I, I argue that a more thorough engagement with research methods, including a commitment to divulging the limitations of studies, will strengthen the waste-recovery literature and ultimately lead to more thoughtful and appropriate policy recommendations. I recommend that future work published on informal waste-recovery activities contain, at a minimum, the following information in the methodological summary: 1) where the study was undertaken and which site(s) the principal investigator(s) studied; 2) detailed information regarding the data collection methods used in the study; 3) whether translators and/or research assistants were used in the study and the language competency of the principal investigator(s); 4) the sample size for each type of research undertaken; 5) the types of sampling method(s)
used by the principal investigator(s) to select respondents; 6) any ethical issues encountered; 7) reflections on the strengths and weaknesses of the overall research design and how it could be improved.

An important finding of this paper is the discovery, through the review of 30 recent pieces of waste-recovery literature, is that the majority of policy recommendations made for the informal waste-recovery trade have focused on actors operating at the lowest level of the waste-recovery hierarchy – waste pickers. I argue that this focus on waste pickers is due to researchers’ assumptions that because waste pickers are the most visibly vulnerable, they are also the most economically, politically and socially vulnerable. I contend that the unintended consequence of this policy focus on waste pickers is that municipal governments may assume that research conducted with waste pickers represents the totality of informal waste-recovery actors’ experiences. I challenge researchers instead (or in conjunction) to ask what are the lived experiences for the majority (junk buyers, waste intermediaries, waste dealers, manufacturers) who are typically excluded from these studies. Thus, I recommend moving beyond a singular focus on waste pickers and exploring the impact of urban change for the multiple actors engaged in informal waste-recovery in cities.

Papers II and III build on the critique introduced in paper I, whereby I discuss the problematic nature of a singular focus on waste pickers, but also introduce the elements of space and scale. Much of the most recent work on informal waste-recovery fails to adequately address the complexity inherent in the informal waste-recovery system, or the multiple external processes of change within cities (and the countryside) that play a role in shaping this system and the people working within it.
A now common theme in informal waste-recovery literature is the notion that waste collectors make significant contributions to the urban environment and thus contribute to sustainable urban development (Kaseva and Gupta, 1996; Ojeda-Benitez, 2002; Nas and Jaffe, 2004; Hayami, 2006; Madsen, 2006; Moreno-Sanchez and Maldonado, 2006; Wilson et al., 2006. Medina (2007) goes as far as to argue: “scavenging can be a perfect example of sustainable development”. My critique of this line of thinking, which I will refer to as a ‘stewards of sustainability perspective’ is not that it is necessarily inaccurate, at least in terms of the vantage point of the city, but rather that it often fails to offer a “just urban socio-ecological perspective” (Heynen et al., 2006: 10). In other words, while the ‘stewards of sustainability perspective’ has furthered the general social recognition of some waste-recovery actors in some countries, overall most authors fail to consider who gains and who pays within the waste-recovery system itself, and neglect to ask important questions about the multiple power relations (both within the hierarchy and the external structural forces) at play in the formation and continuance of this informal activity.

For example, Wilson et al. (2006: 805) recommends integrating the informal sector into formal waste management activities “by organizing themselves and adding value to their recycled materials before selling them on, i.e. to move up the hierarchy…and to extract higher value from recovered materials”, but fails to consider the impact of this recommendation on other actors, namely waste intermediaries, operating at other levels of the informal waste-recovery hierarchy. Moreover, Wilson et al. (2006) and Medina (2000, 2005, 2007) recommend scavenger cooperatives as a means to improve the social value of waste collecting worldwide, but draw solely on a few regional examples from Latin America. Even if informal waste-recovery industries were sufficiently similar around the world, which they are likely not,
countries’ complex and varied socio-political and economic climates render the task of making
global, or even regional, recommendations challenging. As recently as 2008 Mance (2008),
commenting on the First World Congress of Waste Pickers in Bogota, Columbia, notes that
attempts to create waste picker cooperatives in Africa and Asia have failed to achieve the levels
of organization seen in Latin America. So while some authors have recommended promoting
“scavenger cooperatives”, Ngo (2001) cautions against the recommendation for Vietnam,
given that “scavengers, who often come from a farm background, may be reluctant to enter
cooperatives after experiencing the collapse of agricultural cooperatives in the 1980s” (425). In
a case from Turkey, Eloise Dhuy of Ankara Recycling Association comments: “At the moment
the Association isn't doing much [that is] visible, so people ask what the point is” (Mance,
2008: 1).

These considerations are not merely academic indulgences; rather, they lie at the heart of just
policy formation for these oft-forgotten urban actors. Thus, rather than arguing that all
informal waste collectors are simply ‘stewards of sustainability’ (and in turn suggesting
homogenized policy solutions for the group as a whole) we should in fact be digging deeper,
exploring the multiple processes of change that impact different individuals in the waste-
recovery system in multiple and complex ways. While ‘one-size-fits-all’ policy approaches are
efficient in terms of time and resources, they will be unable to address the multiple and diverse
experiences of the population. Microcredit, which has also been suggested by some
researchers (Ngo, 2001; Madsen, 2006), cannot shift ingrained gendered notions of what types
of waste are appropriate for women to collect, regardless of how much money is loaned.
Similarly, cooperatives or formal incorporation with city waste management services does little
to address the reasons why vast numbers of rural residents find it necessary to migrant from
their rural homes to the ‘big city’ to do a job that is considered by many, including many waste collectors themselves, to be the “worst in society” (survey respondent #110). The fact that this is often an occupation of last resort has fallen off the radar in much of the academic literature on informal waste-recovery. I believe this is problematic because it conceals the inherent economic, social and environmental injustices that are intrinsic to this work. While I strongly disagree with any attempts to ban, expel, or further demonize the work of informal waste-recovery workers, I do not support many researchers’ recent attempts to promote the activities of this group as sustainable development. Given this perspective, we must view policy development in both a short-term timeframe and as longer development priorities.

I believe policy makers should work towards making the occupation legal, safe, and economically viable in the short-term. In Hanoi, this could include the following initiatives, which are targeted both specifically at informal waste-recovery workers and to more general city-based initiatives:

- Amending Decision No. 63, which regulates the use of pavements in Hanoi to exclude the activities of informal waste-recovery workers;
- Amending the ban on large trucks in the central city to exclude vehicles engaged in reuse and recycling activities;
- Improving transportation routes within the city (i.e. creating dedicated slow-moving lanes for walkers and cyclists); and,
- Improving street lighting in alleys off main roads to improve visibility and safety after dark;
- Providing free, or extremely low cost, access to basic medical services for waste-recovery workers while working in the city; and
- Increasing the availability of short-term, low-interest, loans for waste intermediaries in need of funds to carry them through market lows.
However, care must be taken to ensure that policy initiatives do not directly, or indirectly, promote the off-loading of municipal services onto informal waste-recovery workers. Cities should not be able to financially gain from downsized municipal services because they allow vast numbers of their country’s population to remain in abject poverty with no other means of financial security. Moreover, despite the recent vogue of recommendations to formalize the informal, we should seriously consider the practical ramifications of such policies. Vietnam’s rural migrants enter into this informal activity because they have few alternative options for economic survival, but they often stay in the occupation because it offers them the freedom to return to their rural-based families throughout the year. This flexibility to come and go from the city as they please, along with the sense of independence many workers’ gained from the work, could be lost in attempts to formalize waste-recovery activities. Additionally, as some authors have noted, formality does not in and of itself eradicate social, racial, or gender inequality in municipal waste management service provision (Beall, 2002; Samson, 2007).

In the long-term, informal waste-recovery should be one of many employment options for rural residents, not their only means of financial survival. Thus, long-term policy initiatives should focus on rural-based development programs, particularly programs aimed at creating alternative employment opportunities. In the case of Hanoi, any equitable attempt to improve the plight of informal waste-recovery workers would necessary require moving beyond the city to Nam Dinh province, from which the majority of informal waste-recovery workers hail. Moreover, reducing education expenditures in Vietnam for rural residents would help ensure children can afford to attend school, while simultaneously reducing the economic burden placed on parents. Obviously, these are far from simple answers and any future policy development in this area would need to delve much deeper into these issues. The aim of this
section, however, is not to outline a detailed course of action, but rather to open the dialogue surrounding appropriate policy intervention for informal waste-recovery industries. In the next and final section, I will explore future research trajectories and how they can feed into an improved understanding of appropriate policy.

5.4 FUTURE RESEARCH TRAJECTORIES

With respect to future research on informal waste-recovery activities, I see three important tasks worth pursuing. First, I believe it is important to carry on with a geographical approach to research, which interrogates phenomena from a variety of scales. While many researchers studying informal waste-recovery activities have privileged the local scale (i.e. focusing on local waste-recovery practices, local problems with social contempt, or local economic insecurity), I contend that a broader analysis of waste-recovery and its interrelatedness with regional, national and international political economy is essential for a thorough understanding of the livelihoods of waste-recovery actors and for relevant policy development. The research done by Goldstein (2005) on recycling in Beijing is a case in point. Goldstein situates shifting practices of recycling within the changing social and economic relations in China over three historical periods: the republican (1911 – 1949), socialist (1950 – 1980) and post-reform (1980 – present) eras. He contends that in the republican and socialists eras, labour was seen as an intrinsic component of the recycling experience, and that under socialism urban residents’ waste was channelled into a new industrial economy, contributing to national development. In other words, the labour associated with recycling was more or less valued. Conversely, in the post-reform era the alternative economic imaginary that value is derived from labour is absent; the notion that labour and the urban gleaners and recyclers are crucial to the economy is
devoid from the rhetoric of environmental stewardship that now permeates waste-recovery discourse in China.

I believe that we should not underestimate the relevance of rural-urban linkages on what has been described by many researchers as an urban issue. In Vietnam, research by DiGregorio (1994, 1997) and Douglass et al. (2002) exemplify how looking beyond ‘the local’ sheds much light on informal waste-recovery activities in the city. A recent article by Resurreccion and Khanh (2007) further this work by exploring how household gender relations between migrant female junk buyers and their left-behind husbands are shaped and negotiated in the context of market-driven rural transformations in the Red River Delta. Thus, through an exploration of informal waste-recovery within the social, economic, political, and environment context of cities, regions, nations, and even internationally, we can further research in this field and develop policy that is as dynamic as the environments in which these actors work and live.

A second research trajectory I would like to see is replications of this geographical approach to studying informal waste-recovery trades in different countries and on different continents, as well as a replication of this study in Hanoi. The political economy of Vietnam is quite unique. As a former communist country that has only relatively recently introduced market-oriented economic policies, Vietnam’s development trajectory is distinctive, both in Southeast Asia and internationally. As such, it is very difficult to generate comparisons, either to other countries in Southeast Asia or to other developing economies in Africa or South America. Moreover, given Vietnam’s geographic proximity to China, the Vietnamese informal waste-recovery trade is highly impacted by China’s overwhelming industrial development and subsequent demand for recyclable materials generally, and scrap metal in particular. In Vietnam women are
primarily responsible for waste management (both formal and informal), but this is not necessarily the case within other countries’ informal waste-recovery trades (i.e. in Argentina, informal waste-recovery is primarily carried out by men\textsuperscript{71}). Each of these factors makes the Vietnamese case quite exceptional and opens the door to discussion regarding regional and international divergence. A debate of this nature is timely I believe this is the only way to move beyond generic policy solutions.

I believe there is academic merit in conducting a longitudinal study of the informal waste-recovery trade in Hanoi. In paper II, I use 1992 data collected by DiGregorio (1994) to compare to data collected by my research team in 2006. The ability to quantify changes over time lends credence to research results and is a strong policy tool for researchers. As Landau and Roever (2004) contend: “a focus on comparability and representativeness could prove invaluable for policy makers and advocates in their assessments of humanitarian problems” (3). They add that conducting methodologically sound large ‘n’ survey research, focused on addressing difficult and diverse research conditions, is a powerful alternative to \textit{a priori} assumptions by the researcher about marginalized groups that can sometimes invade small-scale, qualitative research projects and stifle the uptake of policy recommendations. I welcome further research on this subject, as I believe it will strengthen the findings of this research and lead to stronger policy development. To further this aim, I provide detailed descriptions of my methodological process in paper I of this dissertation and Vietnamese/English copies of my surveys in Appendices 2 and 3.

\textsuperscript{71} Parizeau, K. 2007. Personnel communication.
Finally, I believe an important task of future research should be to advance empirically grounded studies aimed at exploring the impact of economic and urban restructuring on labour and livelihoods. As I mentioned in the introduction, much of the work published on this topic lacks empirical evidence to support its theoretical claims and thus tends to be rather generalized. Here again lies the importance of a mixed-methods approach to research. If we are to be successful at demonstrating how these types of changes impact marginalized labour and livelihoods in cities (both positively and negatively), a study grounded in quantitative and qualitative methodology will likely produce a compelling argument. One recent example of this type of approach to studying economic restructuring on livelihoods is Rigg’s (2007) article on migration and livelihoods in the Lao PDR. Using primary qualitative data and secondary quantitative data, Rigg argues that mobility is becoming increasingly important in supporting and defining the livelihoods of some households and villages as Laos is drawn into the economic fold of the greater Southeast Asian region. His use of both quantitative and qualitative data allows him to present detailed figures concerning the actual numbers of migrants working outside their villages as well as introduce more specificity concerning lived experiences of villagers working outside of the country. I believe a commitment to empirically driven research within this field will forward some of the already strong theoretical claims put forward by researchers.
5.5 REFERENCES


APPENDICES
APPENDIX 1: REVIEW OF INFORMAL WASTE-RECOVERY LITERATURE

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Location of Study/Site of Respondents</th>
<th>Data Collection Method</th>
<th>Use of Translators</th>
<th>Sample size</th>
<th>Sampling method</th>
<th>Policy Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sincular 1991</td>
<td>Bandung, Indonesia/ Not stated</td>
<td>Secondary sources and personal observation</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>No explicit recommendations</td>
</tr>
<tr>
<td>DiGregorio 1994</td>
<td>Hanoi, Vietnam/ City</td>
<td>Survey, interviews, population census</td>
<td>Eleven university students</td>
<td>182 surveys, 10 key informant interviews, 8 waste buyer interviews &amp; undisclosed number of open-ended interviews</td>
<td>Convenience and systematic sample for survey; population census.</td>
<td>No explicit recommendations</td>
</tr>
<tr>
<td>Huysman 1994</td>
<td>Bangalore, India/ Not stated</td>
<td>Interviews</td>
<td>Not stated</td>
<td>161</td>
<td>Not stated</td>
<td>small-scale community based solid waste management schemes</td>
</tr>
<tr>
<td>Van Beukering 1994</td>
<td>Bangalore, India/ Not stated</td>
<td>Interviews</td>
<td>Not stated</td>
<td>“rather small” (pp. 236)</td>
<td>Not stated</td>
<td>Improve quality control and market conditions</td>
</tr>
<tr>
<td>Hunt 1996</td>
<td>Bangalore, India</td>
<td>Interviews</td>
<td>Not stated</td>
<td>100</td>
<td>Not stated</td>
<td>Includes short, medium and long-term solutions – protection, improved disposal, improve status of collectors</td>
</tr>
<tr>
<td>Kaseva and Gupta 1996</td>
<td>Dar es Salaam, Tanzania/ City</td>
<td>Not stated, but based on two-year study</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Increase involvement of the private sector in waste collection</td>
</tr>
<tr>
<td>Mehra et.al. 1996</td>
<td>HCMC, Vietnam</td>
<td>Survey, structured and unstructured interviews, some focus groups</td>
<td>Seven authors are listed - unclear whether they are assistants and/or authors</td>
<td>200 junk buyers &amp; 88 shop keepers</td>
<td>Stratified random sample for shops; convenience sample for junk buyers</td>
<td>No explicit policy recommendations</td>
</tr>
<tr>
<td><strong>Van Beukering et.al. 1996</strong></td>
<td><strong>Bombay, India/ Landfill and City</strong></td>
<td>Survey and discussion groups</td>
<td>Not stated</td>
<td>60 collectors and 7 discussion groups</td>
<td>Not stated</td>
<td>Policy makers in developing country cities should be reluctant to introduce a Western style waste collection systems</td>
</tr>
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<tr>
<td><strong>DiGregorio 1997</strong></td>
<td><strong>Hanoi, Vietnam/ Landfill and City</strong></td>
<td>Survey</td>
<td>Two assistants</td>
<td>346</td>
<td>Not stated</td>
<td>No explicit recommendations</td>
</tr>
<tr>
<td><strong>Furedy 1997</strong></td>
<td><strong>Developing countries</strong></td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Should focus on the recovery of uncontaminated recyclables</td>
</tr>
<tr>
<td><strong>Medina 1997</strong></td>
<td><strong>Laredo, Texas and Nuevo Laredo, Mexico/ City</strong></td>
<td>Survey and interviews</td>
<td>Not needed</td>
<td>100 surveys 25/15 key informant/buyer interviews</td>
<td>Stratified and systematic sampling of collectors</td>
<td>No explicit policy recommendations</td>
</tr>
<tr>
<td><strong>O’Leary 1998</strong></td>
<td><strong>Phnom Penh Cambodia/ Landfill</strong></td>
<td>Observation, informal interviews and a survey</td>
<td>One team leader and six survey assistants</td>
<td>740</td>
<td>Some discussion, but overall unclear</td>
<td>Multiple recommendations ranging from education to health</td>
</tr>
<tr>
<td><strong>Medina 2000</strong></td>
<td><strong>Asia and Latin America</strong></td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Organize waste pickers into cooperatives</td>
</tr>
<tr>
<td><strong>Adeyemi et.al. 2001</strong></td>
<td><strong>Ilorin, Nigeria/ Landfill</strong></td>
<td>Survey</td>
<td>Not stated</td>
<td>250</td>
<td>Random sample of landfills and participants</td>
<td>Waste scavengers could be incorporated into existing waste processes</td>
</tr>
<tr>
<td><strong>Gautam and Upadhyaya 2001</strong></td>
<td><strong>Kathmandu Valley, Nepal/ City</strong></td>
<td>Survey and focus group</td>
<td>Not stated</td>
<td>401 surveys 6 focus groups (5-10 participants)</td>
<td>Not stated</td>
<td>Multiple recommendations: mainly increase awareness &amp; education</td>
</tr>
<tr>
<td>Author</td>
<td>Location/ Type</td>
<td>Research Methods</td>
<td>Key Details</td>
<td>Policy Recommendations</td>
<td></td>
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</tr>
<tr>
<td>Ngo 2001</td>
<td>Hanoi, Vietnam/ City</td>
<td>Interviews, observation, secondary data analysis</td>
<td>No – native speaker</td>
<td>40/15/20 interviews with collectors/buyers/traders respectively</td>
<td>Not stated</td>
<td>Multiple suggestions: improved sanitation, education, access to credit, etc.</td>
</tr>
<tr>
<td>Rouse and Ali 2001</td>
<td>Dhaka, Bangladesh/ City</td>
<td>Interviews and focus groups</td>
<td>Yes – one assistant/translator</td>
<td>9 Interviews and 2 focus groups</td>
<td>Purposive sampling</td>
<td>No explicit policy recommendations</td>
</tr>
<tr>
<td>Li 2002</td>
<td>Wuhan, China/ City</td>
<td>Surveys</td>
<td>Not stated</td>
<td>391/113/35 household/junk buyers/redemption depot</td>
<td>Multistage cluster sampling</td>
<td>No explicit policy recommendations</td>
</tr>
<tr>
<td>Ojeda-Benitez 2002</td>
<td>Mexicali, Mexico</td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Intersectoral partnerships will aid in sustainability</td>
</tr>
<tr>
<td>Baud et al. 2004</td>
<td>Hyderabad, India and Nairobi, Kenya</td>
<td>Surveys, interviews, workshop</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Stratified household survey</td>
<td></td>
</tr>
<tr>
<td>Agarwal et al. 2005</td>
<td>Delhi, India/ Landfill</td>
<td>Interviews</td>
<td>Not stated</td>
<td>43/22 waste pickers/dealers</td>
<td>Not stated</td>
<td>Suggest formally incorporating ‘recyclists’ in city waste management</td>
</tr>
<tr>
<td>Fahmi 2005</td>
<td>Cairo, Egypt/ City</td>
<td>Survey and Interviews/focus groups</td>
<td>Accompanied by two members of community</td>
<td>100 household surveys/45 interviews/focus groups</td>
<td>Random sample of households for survey</td>
<td>Do not relocated Zabaleen to new desert location – they are vital to economy</td>
</tr>
<tr>
<td>Medina 2005</td>
<td>Developing countries</td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Scavenging should be promoted through cooperatives</td>
</tr>
<tr>
<td>Authors</td>
<td>Location/ Site Used</td>
<td>Data Collection Method</td>
<td>Sample Size</td>
<td>Application of Waste Policy</td>
<td>Results</td>
<td></td>
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<tr>
<td>Hayami et al. 2006</td>
<td>Delhi, India/ City</td>
<td>Surveys</td>
<td>Not stated</td>
<td>105/89/14/23 producers/collectors/buyers/traders of waste</td>
<td>Skills upgrading, prevention of bribery and exploitation, transparency</td>
<td></td>
</tr>
<tr>
<td>Madsen 2006</td>
<td>Developing countries</td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Micro-finance schemes and “recycling schools”</td>
<td></td>
</tr>
<tr>
<td>Monero – Sanchez and Maldonado 2006</td>
<td>Developing countries</td>
<td>Secondary data (economic model)</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Proposes tax on virgin material use; tax on consumption and disposal; and a subsidy for material recovery</td>
<td></td>
</tr>
<tr>
<td>Masoacha 2006</td>
<td>Victoria Falls, Zimbabwe/ Landfill</td>
<td>Interviews</td>
<td>Not stated</td>
<td>13</td>
<td>Mentions ‘moving up the waste hierarchy’ as a solution for waste collectors at landfill</td>
<td></td>
</tr>
<tr>
<td>Rouse 2006</td>
<td>Pakistan/ Landfill</td>
<td>Open-ended interviews</td>
<td>Assisted by one translator</td>
<td>Not stated</td>
<td>Integrate informal sector into formal operations at landfill</td>
<td></td>
</tr>
<tr>
<td>Wilson et al. 2006</td>
<td>Developing countries</td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Integrate the informal sector into formal waste management</td>
<td></td>
</tr>
<tr>
<td>Medina 2007</td>
<td>Asia, Africa and Latin America</td>
<td>Secondary data</td>
<td>Not stated</td>
<td>Not stated</td>
<td>Scavenging should be promoted through cooperatives</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 2: WASTE COLLECTOR SURVEY FORM
(VIETNAMESE AND ENGLISH)

PHIẾU HỎI: NGƯỜI THU GOM VÀ THU MUA PHẾ LIỆU THẢI
SURVEY FORM: WASTE PICKERS AND JUNK BUYERS

Người thực hiện phỏng vấn: ____________________ Thói gian phỏng vấn: ________________

Interviewer: ____________________ Interview time: ____________________

Ngày:     /     /2006; Khu vực: _______; Quận: ________________________________

Day: ________; Area: ______________; District: ________________

Thông tin về người thu gom / thu mua phế liệu thải:

1. Giới tính: ☐ Nữ ☐ Nam

Gender Female Male

2. Loại phương tiện nào mà Anh/Chị sử dụng để đi thu nhất rác:

Which means of transportation do you use to collect rubbish?

- Đi bộ ☐ (walk)
- Xe đạp ☐ (bike)
- Khác ☐ (other)

3. Tuổi: _______

Age

4. Nghề nghiệp:

Occupation

- Người thu gom ☐ (waste picker)
- Người thu mua ☐ (junk buyer)
- Cả hai ☐ (both)

5. Anh/Chị đã thu nhất phế liệu/rác thải ở Hà Nội được bao lâu rồi? _______ Tháng / Năm

How long have you collected waste materials in Hanoi? _______ Month/Year

6. Thời gian Anh/Chị làm công việc này như thế nào?

How many months of the year do you do this work?

- Cả năm ☐ (all year)
- Vài tháng trong năm ☐ (part of the year)
- Khác ☐ (other)

6(a). Nếu suốt cả năm, trước đây Anh/Chị làm nghề gì ……………………………………..

If you do this work all year, what did you do before this job?

6(b). Nếu vài tháng trong năm, thời gian còn lại Anh/Chị làm nghề gì?

If you do this work part of the year, what do you do for the rest of your time?

………………………………………………………………………………………………………………
7. Hiện nay Anh/Chị thường thu nhất rác ở đâu? (Đánh dấu một hoặc nhiều):

*Where do you currently collect waste materials (check all that apply)*

- Các công trình xây dựng
- Các điểm đổ rác tạm thời
- Tài xe rác
- Trên đường phố
- Các thùng rác
- Các hộ gia đình
- Nhà hàng ăn uống
- Chi nhánh của các cơ quan/trường học
- Các cơ quan/trường học
- Các cá nhân của các cơ quan/trường học
- Các cá nhân của các cơ quan/trường học
- Các cá nhân của các cơ quan/trường học
- Các cá nhân của các cơ quan/trường học
- Các diễm đổ rác của khu tập thể
- Nơi khác ________________

7(a). Địa điểm nào mà hiện nay Anh/Chị hay đến thu nhất nhiều nhất? …………………

*At present, where do you collect the most waste materials from?*

7(b). Khi mới bắt đầu thu nhất rác thái, địa điểm nào mà Anh/Chị hay đến thu nhất nhiều nhất? …………………

*When you first started collecting waste, where did you collect the most waste materials from?*

7(c). Nếu có thay đổi thì tại sao Anh/Chị lại thay đổi địa điểm thu nhất rác thái?

*If you have changed where you collect the most waste materials from, why did you make that change?* 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9(a). Nếu có, xin Anh/Chị cho biết vì sao?
If yes, do you know why?

9(b). Nếu có, thì sự thay đổi này ảnh hưởng như thế nào đến thu nhập của Anh/ Chị?
If yes, how does this change in the selling price of waste materials impact your income?

- Ảnh hưởng rất nhiều [ ]
- Ảnh hưởng khá nhiều [ ]
- Ảnh hưởng ít [ ]

Very much [ ]  Somewhat [ ]  Little [ ]

10. Anh/Chị thường dem bán các phế liệu thu gom được ở đâu? (ghi rõ địa chỉ)
Where do you take your waste materials to sell? (write address)

11. Hiện nay Anh/Chị có dem bán phế liệu tại nơi mà Anh/Chị hay bán trước đây (hội môi làm) không?
Nowadays, do you sell your waste material at the same place as you did as when you started?

- Có [ ] yes  - Không [ ] no

11(a). Nếu không, tại sao Anh/Chị lại thay đổi nơi bán phế liệu?
If no, why did you change the place you sell your waste materials?

12. Mỗi ngày, Anh/Chị làm trung bình bao nhiêu tiếng đồng hồ? ............................
How many hours do you work each day?

13. Từ khi bắt đầu đi thu gom phế liệu tối nay, Anh/Chị có hay thay đổi tuyến đường thu gom không?
From when you started collecting waste until now, have you changed the your work route?

- Có [ ] yes  - Không [ ] no
13(a). Nếu có, xin Anh/Chị cho biết vì sao?
*If yes, can you explain?*

…………………………………………………………………………………………………………………………

14. Có địa điểm nào trong thành phố mà Anh/Chị rất muốn thu gom phế liệu ở đó nhưng lại không thể được không? Có □ yes Không □ no
*Is there a place in the city that you would like to collect waste materials from, but you find that you can not do so?*

14(a). Nếu có, xin Anh/Chị cho biết vì sao?
*If yes, please tell us why you cannot*

……………………………………………………………………………………………………………………

15. So với thời gian khi mới bắt đầu thu nhặt phế liệu/rác thái, Anh/Chị thấy sức khỏe của mình như thế nào?
*How do you currently feel about your health, compared to when you just started collecting waste materials?*

- Tốt hơn □ (better)
- Vẫn như cũ □ (same)
- Tối hơn □ (worse)

16. Từ khi thu nhặt phế liệu đến nay, Anh/Chị hay mắc phải những bệnh gì?
*From when you started collecting waste until now, have you gotten sick?*

<table>
<thead>
<tr>
<th>Triệu chứng (illness)</th>
<th>Nhiều hơn (gotten worse)</th>
<th>Vẫn như cũ (Stayed the same)</th>
<th>Ít hơn (gotten better)</th>
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17. Anh/chi có thường xuyên gặp phải các tai nạn giao thông trong quá trình đi thu nhặt/thu mua rác thái không?
*Have you had any road accidents while doing this work?*

- Không bao giờ □
- Thỉnh thoảng □ (sometimes)
- Thường xuyên □ (often)

17(a). Bao nhiêu lần ________________Tháng / Năm
*How many times ________________ Month/Year*
17(b). Tại sao?
Why?

……………………………………………………………………………………………………
……………………………………………………………………………………………………

18. Anh/Chị thường hay gặp phải những khó khăn nào trong khi đi thu nhặt/thu mua rác thải?
So với thời gian khi mới bắt đầu thu nhặt phế liệu/rác thải, thì hiện nay những khó khăn này tăng lên, giảm đi hay vẫn như cũ?

What sorts of difficulties do you face during your work collecting waste?
From when you started collecting waste until now, have these difficulties reduced in frequency, stayed the same, or increased in frequency?

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<th>Giảm (reduce)</th>
<th>Giữ nguyên (same)</th>
<th>Tăng (increase)</th>
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19. Số tiền mà Anh/Chị kiếm được từ việc thu gom rác thải có đủ trang trải cho các nhu cầu trong cuộc sống của Anh/Chị không? Có □ Không □
Is the amount of money you make from the sale of the waste materials you collect enough to satisfy the financial demands of your life?

20. Anh/Chị thường phải chi tiêu bao nhiêu tiền mỗi ngày? _______________ Đồng
How much money do you usually spend each day?

21. Trung bình mỗi ngày Anh/Chị thường kiếm được bao nhiêu tiền? _______________ Đồng
How much money do you usually earn each day?

22. Nếu Anh/Chị không đủ tiền để chi tiêu hàng ngày, Anh/Chị có làm thêm công việc khác không? Có □ yes Không □ no
If you don’t earn enough money, do you do any other work?

22(a). Nếu có, Anh/Chị làm thêm việc gì?
If yes, what other work do you do?

……………………………………………………………………………………………………
……………………………………………………………………………………………………
22(b). Anh/Chị kiếm được bao nhiêu tiền từ việc làm thêm? __________________ Dong
How much money do you earn from this extra work?

23. Anh/Chị có tiền tiết kiệm không?  Có □ yes  Không □ no
Do you save any money?

23(a). Nếu có, mỗi tháng Anh/Chị dành cho gia đình (trung bình) bao nhiêu tiền?
________ (Dong/tháng)
If yes, how much can you save for your family each month? (Dong/month)

23(b). Nếu có, Anh/Chị gửi về cho ai
  Gia đình ở Hà Nội □  Gia đình ở quê □  Khác □
(family in Hanoi) (family in hometown) (other)

24. Từ khi thu gom phù liệu đến nay, Anh/Chị thấy khả năng chi trả cho sinh hoạt hàng ngày trở nên dễ dàng hơn, khó khăn hơn hay vẫn giống như hồi đầu mới làm?
From when you started collecting waste until now, how do you feel about your ability to afford your daily expenses? Has it gotten easier, stayed the same, or become more difficult?
  Đễ dàng hơn □  Không thay đổi □  Khó khăn hơn □
(easier) (same) (more difficult)

24(a). Nếu khả năng chi trả cho mức chi tiêu sinh hoạt hàng ngày của Anh/Chị bị thay đổi đi (ví dụ: cải thiện hơn hoặc khó khăn hơn), xin Anh/Chị giải thích vì sao?
If you ability to to meet your daily expenses has changed, can you please tell us why?
........................................................................................................................................
........................................................................................................................................

25. Vì sao Anh/Chị chọn công việc này?
Why do you do this job?
........................................................................................................................................
........................................................................................................................................
26. Anh/Chị có định làm công việc này lâu dài không?
Do you intend to do this work for a long time to come?

- Có ☐ (yes)
- Không ☐ (no)
- Chưa quyết định ☐ (don’t yet know)

26(a). Tại sao?
Why?

................................................................................................................................................
................................................................................................................................................

27. Tình trạng sống hiện nay của Anh/Chị ở Hà Nội:
What is your residency status in Hanoi?

- Tạm thời ☐ (temporary)
- Có định ☐ (permanent)

27(a). Nếu tạm thời, quê của Anh/Chị ở đâu?
If you live temporarily in Hanoi, where is your hometown?

28. Anh/Chị đang sống ở đâu (địa chỉ)?
Where do you live while in Hanoi? (address)

................................................................................................................................................
................................................................................................................................................

29. Anh/Chị có nhận được hỗ trợ từ địa phương/các tổ chức xã hội không?
Do you receive any support from local social organizations?

- Có ☐ yes
- Không ☐ no

29(a). Nếu có, Anh/Chị nhận được những hình thức hỗ trợ nào?
If yes, what kind of support do you receive?

................................................................................................................................................
................................................................................................................................................

30. Anh/Chị mong muốn nhận được hình thức hỗ trợ nào từ chính quyền?
Would you like to receive any support from government?

................................................................................................................................................
................................................................................................................................................

Xin cảm ơn sự giúp đỡ của Anh/Chị! Thank you for your cooperation!
APPENDIX 3: WASTE INTERMEDIARY SURVEY FORM
(VIETNAMESE AND ENGLISH)

PHIÊN HỒI: NGƯỜI THU MUA ĐỒNG NÁT
SURVEY FORM: WASTE INTERMEDIARIES


Interviewer: Date: Number: Block: District:

Giới tính:  □ Nữ  □ Nam  □ Khác
Gender    Female     Male     Other situation (i.e. two people answer)

1. Anh/chị thu mua phải liệu được bao lâu rồi? ________ Tháng / Năm (khoanh tròn)
   How long have you been working as a waste intermediary? month/year

2. Anh/chị làm việc ở địa điểm này được bao lâu rồi? ________ Tháng / Năm (khoanh tròn)
   How long have you been working here?    month/year

3. Anh/chị mua, thuê hay sử dụng địa điểm kinh doanh (nhà,vỉa hè,bãi) này?
   Do you hire, buy or just use this location for business?
   □ Mua (buy)  □ Thuê (nhà)  □ Sử dụng (nhà)
   □ Khác ________  □ Thuê (trên đường)  □ Sử dụng (trên đường)
   □ (Others)  □ (rent (on the street))  □ (use the street)

3(a). Tiền thuê nhà? ____________ Tháng
   Price of rent house   month

3(b). Mỗi ngày, anh/chị làm việc bao nhiêu tiếng đồng hồ?  Từ___________ Đến___________
   How many hours do you work per day?  From ...  To

4. Anh/chị đã bao giờ thay đổi điểm kinh doanh chưa? (Chuyển từ địa điểm này sang địa điểm khác?)
   Have you ever changed your location of business?
   □ Có Yes  □ Không No

4(a). Nếu không, tại sao? If no, why not?
4(b). **Nếu có, anh/chị chuyển bao nhiêu lần?** (Từ khi thu mua phế liệu đến nay)

If yes, how many times have you changed your location? *(since you first worked as an intermediary)*?

4(c). **Nếu có, trước đây anh/chị đã từng thu mua phế liệu ở những địa điểm nào và tại sao anh/chị phải thay đổi địa điểm?**

*If yes, where have you bought waste materials? Why have you had to change your location?*

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<tr>
<th>Từ (from)</th>
<th>Đến (to)</th>
<th>Tại sao (the reason)</th>
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5. Anh/chị có gặp phải khó khăn khi tìm địa điểm thu mua không?

*Do you have any difficulties in finding the location of business?*

- [ ] Có _yes_  - [ ]Không _no_

5(a). **Tại sao (Những khó khăn gì)?** Why? *(Can you tell me what your difficulties are?)*

6. Anh/chị thường hay gặp phải những khó khăn nào khi làm việc này? So với thời gian mới bắt đầu làm thì hiện nay những khó khăn này tăng lên, giảm đi hay vẫn như cũ?

*What are your permanent difficulties while working as an intermediary? Are the difficulties increasing, decreasing or remaining the same (compared to your first working days)?*

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7. Anh/chị có thể cho kể lại những tai nạn nghề nghiệp anh/chị đã từng gặp phải không?

*(VĐ: trong quá trình phân loại phế loại, vận chuyển phế liệu...)*

*Would you mind telling me about your accident(s) that you have had while you are working? (i.e. while you are classifying waste materials, transporting them, etc....)*
8. Anh/chị mua những loại phẩm liệu nào, mỗi tháng mua với khối lượng bao nhiêu và bán cho ai?
What kind of waste materials do you buy? How many kilograms of each kind of WM per month? Whom do you sell waste materials to?

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<thead>
<tr>
<th>Loại phẩm liệu?</th>
<th>Tại sao không mua?</th>
<th>Bán cho ai?</th>
<th>Khối lượng (Kg/tháng)</th>
<th>Lợi nhuận (VND/tháng)</th>
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<tbody>
<tr>
<td>Kind of waste</td>
<td>Why don’t you buy it?</td>
<td>Who do you sell to?</td>
<td>The amount of WM (kg/month)</td>
<td>Profit of each month</td>
</tr>
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- ☐ Kim loại (Metal)
  - ☐ Đồng (copper)
  - ☐ Vò lon bia (beer cans)
  - ☐ Sắt (iron)

- ☐ Giấy (paper)
  - ☐ Các-tông (carton)
  - ☐ Giấy khác (another kinds of paper)

- ☐ Nhựa (plastic)

- ☐ Thủy tinh (glass)
- ☐ Cao su (rubber)
- ☐ Đồ điện dụng (electric appliances)
- ☐ Khác ______________ (Others)

9. Giá của các loại phẩm liệu mà anh/chị bán có hay bị thay đổi không?
Does the selling price (to traders) often change?

- ☐ Có yes
- ☐ Không no
9(a). **Nếu có,** anh/chị có thể giải thích vì sao lại ảnh hưởng đến thu nhập của anh/chị được không?
*If yes, what kind of impact does the change in price have on your income?*
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

9(b). **Nếu có,** thì sự thay đổi này ảnh hưởng như thế nào đến thu nhập của anh/chị?
*If yes, how does the change affect your income?*

☐ Ảnh hưởng rất nhiều  ☐ Ảnh hưởng khá nhiều  ☐ Ảnh hưởng ít

(very much)               (somewhat)               (little)

10. Từ khi bắt đầu thu mua phế liệu đến nay, anh/chị có thay đổi người tiêu thụ phế liệu không?
*Have you ever changed the place to sell WM to (traders) – compared to your first working days*

☐ Có yes  ☐ Không no

10(a). Tại sao? *Why/Why not?*
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

11. Hiện nay anh/chị thường mua phế liệu từ những nguồn nào?
*Who do you buy the most waste materials from?*

___ Đồ nát  ___ Công nhân URENCO  ___ Các nhà máy
junk buyers                  URENCO workers                     factories

___ Người nhặt rác  ___ Các cơ quan  ___ Khác _________
waste pickers               offices                                others
11(a). Từ khi bắt đầu thu mua phế liệu đến nay, anh/chị có thay đổi nguồn mua phế liệu không?

*From when you started buying waste until now, have you ever changed who you buy from?*

- ☐ Có yes
- ☐ Không no

11(b). Tại sao? *Why/Why not?*

……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………

12. Anh/chị chi tiêu bao nhiêu tiền mỗi ngày? (Không bao gồm tiền thuê nhà) ______________

*How much are your daily expenses? (Excluding rent)*

12(a). Từ khi thu mua phế liệu đến nay, anh/chị thấy khả năng chi trả cho sinh hoạt hàng ngày trở nên dễ dàng hơn, khó khăn hơn hay vẫn giống như hồi đầu mới làm?

*From when you started collecting waste until now, do you think that your ability to earn an income is better, worse, or does it remain the same?*

- ☐ Đễ dàng hơn better
- ☐ Không thay đổi unchanged
- ☐ Khó khăn hơn worse

12(b). Nếu khả năng chi trả cho mức chi tiêu sinh hoạt hàng ngày của anh/chị bị thay đổi đi (ví dụ: cải thiện hơn hoặc khó khăn hơn), xin Anh/Chị giải thích vì sao?

*If you ability to earn an income changed, can you explain the reason why?*

……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………

13. Anh/chị thấy môi trường sống hiện nay so với các địa điểm kinh doanh trước như thế nào?

*Can you compare your living and working environment now to when you first started buying waste?*

- ☐ Tốt hơn better
- ☐ Văn như cũ unchanged
- ☐ Tồi hơn worse

13(a). Nếu thay đổi, tại sao? *If something changed, what is/are the reasons(s)?*

……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
14. Tuổi: _______ Age
15. Có bao nhiêu người trong gia đình sống với anh/chị? ________
   How many of your relatives live with you?
15(a) Có bao nhiêu thành viên trong gia đình cùng làm việc với anh/chị? ________
   How many of the family members work with you?
15(b). Anh/chị có thuê người làm không? Anh/chị trả lương cho họ bao nhiêu?
   Do you hire workers? How much do you pay them for per month?
   ……………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………....
16. Quê của anh/chị ở đâu? ____________________________
   Where do you come from?
17. Anh/chị làm nghề gì trước khi làm công việc này? ____________________________
   What was/were your previous job(s)?
18. Vì sao anh/chị chọn công việc này?
   Why do you choose this job?
   ……………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………....
   ……………………………………………………………………………………………………………....
19. Anh/chị có định làm công việc này lâu dài không?
   Do you intend to work as an intermediary for a long time?
   □ Có yes  □ Không no  □ Chưa quyết định haven’t decide
19(a). Tại sao? Why/Why not?
   ……………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………....
   ……………………………………………………………………………………………………………....
   Xin cảm ơn sự giúp đỡ của anh/chị!
   Thank you for your cooperation!
APPENDIX 4: WASTE COLLECTOR AND INTERMEDIARY INTERVIEW SCRIPTS

WASTE COLLECTOR INTERVIEW SCRIPT

Interviewer:

Date:

District where interview took place:

1. Gender of respondent:
2. Occupation of respondent:
3. How long have you been buying waste in Hanoi?
4. Method of transportation:
   4a. Why don’t you ride a bike (if walking)?
5. Is there anything that you use to collect that you no longer collect? Is there anything that you collect now that you didn’t collect in the past? Why change?
6. From when you started collecting waste until now, do you find that the unit price for waste materials is more stable, less stable, or has it remained the same?
7. From when you started collecting waste until now, has your ability to meet daily expenses gotten easier, remained the same, or gotten more difficult? Why?
8. What types, if any, occupational hazards do you encounter with this job? (Guide to RAs: i.e. when your picking waste, classifying waste, travelling through your route) (Guide to RAs working near hospitals: Do you ever pick/collection hospital waste? Do you ever get pricked, poked, scratched, cut?) Would you go to the hospital to cure/fix the problem?
9. Compare when you started collecting waste until now. How do you feel about the road traffic in Hanoi? Is it more difficult to complete your route, less difficult to complete your route, or have the changes in traffic had no affect on your job? Why? Why not?
10. Do you know anyone who has stop doing this job? If yes, do you know what type of work they are doing now? Why did they change to another job? Are they still working in Hanoi, or have they moved somewhere else? If they moved, where did they move to and why? (Guide to RAs: WP/JP may not distinguish between their job and that of the receiver so we should first ask: Do you know anyone who has become a receiver? Then ask: Do you know anyone who does another job?)
11. What is your age?
12. What province (include district) are you from?
13. What is the highest level of education you completed?
14. How much money do you earn each day?
15. [For electronics buyers] Why have you chosen to specialize in household electronics? [For everyone] Tell us why you think men tend to specialize in household electronics?
16. Have you considered changing your job? Why or why not?
17. Why did you decide to come to Hanoi to work? Why not other large cities such as Hai Phong or Da Nang?
18. In the last few years, there have been a lot of changes to the City of Hanoi. For example, there has been a lot of construction of new buildings, a lot of new roads, a
lot of new consumer products available to buy. Have these types of changes affected your work? If yes, please explain how?

19. How do you feel about the treatment of Hanoians (authorities, police, customers, other Hanoians) towards your job? Has their treatment changed from when you started collecting waste until now?

20. What sort of changes have you noticed in your hometown from when you started doing this job until now? (Guide for RAs: i.e. changing availability of jobs, changes in the amount of taxes, fees, etc. they have to pay, changes in land availability and land quality, changes in educational opportunities, changes in social attitudes about education, work, farming, etc).

21. Do you collect waste from institutions (this includes public and private offices, banks, schools and universities, hospitals)? If yes, how has your ability to collect from institutions changed from when you started collecting waste until now? Has it gotten easier, remained the same, or gotten more difficult? Why? If you don’t collect waste from institutions, have you ever approached them to try? If yes, what happened? If no, why not? (Guide to RAs: if possible, try to get JB/WP to tell you what type of institution they are referring to when they give you an answer).

22. Now in Hanoi there are some new types of housing that people live in such as apartment buildings and houses behind gates/houses that have a guard. Have you tried to approach people that live in apartment buildings? Why or why not? Have you tried to approach people that live in houses behind gates/houses that have a guard? If yes, what happened? If no, why not?

23. Now in Hanoi there are shopping malls and many big international hotels. Have you tried to approach shopping malls to collect waste? If yes, what happened? If no, why not? Have you tried to approach hotels to collect waste? If yes, what happened? If no, why not?

24. From when you started collecting waste until now, how has your living environment (sanitation, air quality, security, neighbours) in Hanoi changed?

25. (Non-Hanoians) have you thought about bringing your family to live with you in Hanoi? If yes, have you had any difficulties obtaining health care, or enrolling your children in schools in Hanoi? If you had permanent residency, would you find it easier to obtain these services, or do you think it would make no difference? If no, why have you chosen not to bring your family to live with you in Hanoi?

26. Some people we have talked to say that there used to be more children picking waste. Have you noticed this as well? Please explain.

27. There used to be more men working as JBs in Hanoi. Why do you think the number of male JBs has decreased?

28. What do you think is the best thing about this job? What do you find most difficult about this job?
WASTE INTERMEDIARY INTERVIEW SCRIPT

Interviewer:

Date:

District where interview took place:

1. Gender of (main) respondent:
2. Occupation of respondent:
3. How long have you been buying waste in Hanoi?
4. What did you do before you bought waste and how long did you do it for? What did your wife/husband/business partner do before doing this job and how long did they do it for?
5. From your experience, what types of changes have you noticed in this job from when you started buying waste until now?
6. In the last few years, there have been a lot of changes to the City of Hanoi. For example, there has been a lot of construction of new buildings, a lot of new roads, a lot of new consumer products available to buy. Have any of these types of changes affected your work? If yes, please explain how? If no, why not?
7. In the near future Vietnam will enter the World Trade Organization (WTO), which will mean that the ability to trade with other countries will increase. What, if any, impact do you think this will have on your business? How do you think you will be affected?
8. If you could choose anywhere in the city to locate your business, where would you choose? Why don’t you work there? What are the obstacles to working in that location?
9. Some people have told us that they worry about having their rental house taken away from them by their landlord, or being forced to move from their place of business by city authorities. Do you worry about either of these two things happening to you? Why? Why not?
10. How do you feel about the attitude/treatment of Hanoians (authorities, police, customers, other Hanoians) towards your job? Has their treatment changed from when you started collecting waste until now?
11. How many family members work with you? Who are they? Do you have relatives that work as receivers?
12. Does your family live with you in Hanoi? If yes, have you had any difficulties obtaining health care, or enrolling your children in schools in Hanoi? If you had permanent residency, would you find it easier to obtain these services, or do you think it would make no difference? If your family doesn’t live with you, why have you chosen not to bring your family to live with you in Hanoi?
13. Do you buy waste directly from institutions (this includes public and private offices, banks, schools and universities, hospitals)? If yes, have you had any difficulties from institutions changed from when you started collecting waste until now? Has it gotten easier, remained the same, or gotten more difficult? Why? If you don’t collect waste from institutions, have you ever approached them to try? If yes, what happened? If no, why not? (Guide to RAs: if possible, try to get Receivers to tell you what type of institution they are referring to when they give you an answer).
14. Now in Hanoi there are shopping malls (i.e. Vincom, Hanoi Towers) and many big international hotels i.e. Hilton, Sofitel). Have you tried to approach shopping malls to
buy waste? If yes, what happened? If no, why not? Have you tried to approach hotels to buy waste? If yes, what happened? If no, why not?

15. Do you find that establishing contracts with institutions, hotels, shopping malls, or other large businesses is easy or difficult? Why? From when you started buying waste until now, have you found it easier to establish contracts, more difficult to establish contracts, or has your ability to establish contracts remained the same? Why?

16. Do you sell any of your waste materials directly to factories, recycling villages or other manufacturers? If yes, how did you initiate that relationship? If no, have you ever attempted to sell your waste materials directly to factories, recycling villages, or other manufacturers? If yes, what happened? If no, why not?

17. In the last six months has the price of (iron, steel, copper, paper/carton, plastic, glass, etc.) changed? Can you tell us the different prices at which you sold this waste material for (i.e. May: 50,000/kg, June: 55,000/kg, July: 48,000/kg…). Why do you think the price of this waste material has/has not changed?

18. Do you know anyone who has stop doing this job? If yes, do you know what type of work they are doing now? Why did they change to another job? Are they still working in Hanoi, or have they moved somewhere else? If they moved, where did they move to and why? *(Remember: ask the gender of the person/people).*

19. From when you started collecting waste until now, has your ability to meet daily expenses gotten easier, remained the same, or gotten more difficult? Why?

20. Did you have to borrow money to open your shop/buy waste material? Can you tell us about the procedure for borrowing money? Was it difficult? Was it easy?

21. What is your age?

22. What province (include district) are you from?

23. *(If from Nam Dinh)* Why do you think so many receivers and junk buyers come from Nam Dinh to Hanoi to work?

24. What is the highest level of education you completed?

25. If the Government were to offer you support, what kind of support would you request?
APPENDIX 5: IMAGES OF JUNK BUYERS
APPENDIX 6: IMAGES OF WASTE PICKERS
APPENDIX 7: IMAGES OF SIDEWALK DEPOT OPERATORS
APPENDIX 8: IMAGES OF WASTE RECEIVERS