



Action research and residential waste minimisation in Palmerston North, New Zealand



Trisia Farrelly*, Corrina Tucker

Social Anthropology Programme, School of People, Environment, and Planning, Massey University, Private Bag 11222, Palmerston North 4474, New Zealand

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ABSTRACT

This research adds an action research approach to mixed methods to understand the drivers and barriers to residential waste minimisation in Palmerston North, New Zealand. While local, national, and global structural barriers persisted outside the participants' immediate control, action research enhanced waste minimisation practices within the limits of these structural barriers. The reflexive and collaborative principles of action research allowed research participants to identify individualised needs and challenges. Thus, the research proceeded according to the participants' circumstances. Some of the key drivers included a sense of accountability, active learning, social support, convenience, affordability, and access to information and resources. The participants also offered recommendations to the City Council, producers, and policy-makers to enhance residential waste minimisation in Palmerston North. While the value-action gap persists in purely quantitative waste research seeking to understand and change waste behaviour, action research was beneficial as it added a more nuanced understanding of participants' waste behaviours. It also contextualised waste-related practices and attitudes in a specific locale.

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1. Introduction

"Making the environment a priority starts at home" (OECD, 2013) and understanding municipal waste behaviour is vital if we are to have any positive influence on it (Fahy and Davies, 2007). This message is not new and the value-action gap (inconsistencies in what people say and do regarding pro-environmental values and behaviour) has been well-documented over the past decade (Blake, 1999; Cox et al., 2010; Taylor and Allen, 2008).

There is now a wealth of information about what people do with household waste, what they think about it, and some general motivational factors and barriers associated with waste minimisation practices (Cole et al., 2014; Gregson et al., 2013; Waite, 2013). However, the psychological models on which this research is often based, do not always represent the whole person in a specific socio-ecological context. In addition, Cox et al. (2010) argue that there is no consensus about behaviour change at a theoretical level. This is most likely due to the complexities and incongruence of human behaviour. Much of the work conducted in this field also relies heavily on quantitative surveys which are unlikely to capture these complexities. In addition, a significant proportion of research

conducted in this field is more interested in waste recycling than waste prevention¹ (Cameron, 2002; Challenger, 2007; Waite, 2013; White and Hyde, 2013). While international residential waste research focussing on behaviour has been growing exponentially, research that encourages waste minimising practices within households in particular locales as a research outcome is sparse.

While it is not novel to emphasise the importance of research methodologies in understanding waste minimisation, few have applied research methodologies designed to catalyse positive waste management behaviours through action research (exceptions include Aid and Brandt, 2010; Fahy and Davies, 2007; Hobson, 2003; Lederer, 2013; Snel and Mathews, 2003). Action research is based on the understanding that providing people with information alone is insufficient in encouraging pro-environmental behaviour change (Fahy, 2006; Taylor and Allen, 2008), and that embedding information-sharing within a social or collaborative space encourages uptake (Taylor and Allen, 2008). This action research project opened up a social space whereby participants collaborated with the researchers to determine the trajectory of the research process in such a way that it most effectively contributed to waste minimisation in their household.

* Corresponding author. Tel.: +64 6 356 9099x83664.
E-mail address: T.Farrelly@massey.ac.nz (T. Farrelly).

¹ One exception is a study by Cox et al. (2010) which focuses exclusively on prevention.

The primary aim of this action research project was to understand the drivers and barriers to household waste minimisation in Palmerston North. It built on some of the action research methods already employed by the waste researchers noted above by offering participants in four households a unique combination of supportive tools over a nine-month period. The research was conducted predominantly in the participants' own homes but also at the local resource recovery park. The combination of methods employed in this longitudinal action research project included a series of hands-on workshops; active interviews; photo elicitation and documentation of ongoing waste audits; and trials of kerbside collection containers and products aimed at minimising household waste. All these methodological tools provided depth and complexity to the data collected over the nine-month research period. These tools also lead to changes in values and actions associated with household waste minimisation. The research showed that these changes were highly contingent on each household's unique circumstances.

Appadurai's (1996) scapes 'as cultural flows' help us to better understand the private waste spaces that exist within our participants' homes. In this paper, the overlapping 'wastescapes' (Alley, 2002; Zapata Campos and Zapata, 2011) of the city of Palmerston North that influenced our participants' daily waste practices are described. Wastescapes are dynamic political, historical, economic, social, and environmental spaces where waste is culturally interpreted and mobilised. These scapes are informed and structured by groups and individuals and include those at regional, national, and global scales. They are usefully imagined as nested, dynamic, and overlapping. Wastescapes also provide context for the action research methods employed in this project. The cultural construction of residential waste management is often only brought to consciousness and mediated by kerb side services governed by the local council and national waste policy and legislation.

This paper aims to highlight action research as a valuable methodological contribution to a mixed methods approach to waste research. Despite the limitations of action research as resource-heavy and time-consuming, the rewards by far outweigh the limitations. This paper illustrates that action research is particularly useful when seeking nuanced value and action data regarding the barriers and incentives to residential waste minimisation in a particular locale. The focus of this paper is to highlight the potential value of action research. While key findings relevant to this focus are provided here, the multidimensional nature of the research means broader and more detailed results are beyond the scope of this paper and are forthcoming.

The key strengths and innovation of this study include its longitudinal feature, which allowed the researchers and participants to contextualise and explain changes over time. Enhancing the depth and validity of the research was having the combined quantitative and qualitative data available for comparison with participants' self-reported data. It also provided opportunities for the critical reflection core to action research, and enabled researchers to identify differences in households' ability and willingness to implement learned changes. In addition, the study provided a range of practical learning opportunities and a supporting social context that enhanced stakeholders' abilities to reach their shared goal of household waste minimisation.

1.1. The New Zealand wastescape

Household consumption has only fairly recently been identified as a key area of concern by the international community. For example, the OECD started developing policy based on sustainable consumption as early as 1994 (OECD, 2002). Up until then, the drivers and patterns of household consumption were not well understood as environmental policies were more concerned with the pollution

control and eco-efficiency of industrial production (OECD, 2002). The OECD's 2002 policy brief *Toward Sustainable Household consumption? Trends and Policies in OECD Countries* recognises the importance of understanding household consumption:

Although the environmental pressures of an individual household are minor compared to environmental impacts from the industrial and public sector, the combined impact of many households is an important contributor to a number of environmental problems, including air and water pollution, waste generation, habitat alteration and climate change (OECD, 2002, p. 3).

More recently, the OECD carried out a survey in 2011 in 12,000 households in 11 OECD countries. The resulting report, *Greening Household Behaviour*, based on the second round of Environmental Policy and Individual Behaviour Change (EPIC) surveys concludes that stimulating desirable environmental behaviour change in households requires a mix of economic incentives and information campaigns (2011). The third round of EPIC surveys is planned for 2014.

Across OECD countries, impacts on the environment resulting from household activities increase annually. These are expected to intensify, particularly the impacts related to energy, transport, and waste (OECD, 2002, p. 3). In 2012, the OECD made the following statement in the introduction to their projection of the state of the environment in 2050.

Human endeavour has unleashed unprecedented economic growth in recent decades in the pursuit of higher living standards. However, the sheer scale of economic and population growth has overwhelmed progress in curbing environmental degradation. Providing for a further 2 billion people by 2050 will challenge our ability to manage and restore the natural assets on which all life depend (OECD, 2012, Highlights).

The report projected that by 2050, without robust new policies, growing environmental pressures generated by 'growth' (economic and population) will continue unrestrained. Because 70% of the world's population is projected to inhabit urban areas by 2050, this is likely to apply further pressure to pre-existing challenges including air pollution, transport congestion, and waste management (OECD, 2012).

In the same year that the OECD first publicly recognised the environmental significance of household consumption practices (2002), *The New Zealand Waste Strategy* was introduced, and has since been reviewed in 2006 and 2010. The strategy sets out the country's long-term plan for managing waste. Its two key goals are reducing the harmful effects of waste and improving the efficiency of resource use (MfE, 2010). *The New Zealand Waste Strategy* is notable in that it emphasises prevention rather than recycling towards a 'zero waste' vision for New Zealand. In 2014, despite much rhetoric around zero waste, the reality is that growth in the recycling industry (Cassells, 2001; Waste Not Consulting Limited, 1998; Zero Waste New Zealand Trust, 2010) continues to draw attention away from the 'prevention' tip of the waste hierarchy (Cameron, 2002). While there is an increase in international recognition of the significant impact of household consumption on the environment, there has been limited waste research conducted in New Zealand, including research specific to household waste. This has been recognised by the MfE which states, 'Both the 2007 OECD review and the 2006 review of the *New Zealand Waste Strategy* targets found that a lack of information hampers our ability to set and achieve targets for waste minimisation' (MfE, 2009, p. 6). The Parliamentary Commissioner for the Environment (PCE) reported that this lack of reliable waste data is a barrier to providing effective waste minimisation incentives and regulations (PCE, 2006). Not only is there a dearth of reliable data, more complex data is needed including national and

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