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What motivates households recycling behaviour in recycling schemes of different maturity? Lessons from Lithuania and Sweden



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ABSTRACT

This study analyses the determinants of household recycling behaviour in a recycling system at an early stage of development (Lithuania) and compares them with those of a more mature recycling scheme (Sweden). The analysis builds on the empirics from household surveys and focuses on four fractions of household packaging waste. Several similarities within the two recycling schemes were found, including convenience, norm-based motivators, and the interactions between such factors. The analysis tested and confirmed the so-called ABC Hypothesis of moral norms being less important as motivators to recycle when it is easy and convenient to collect packaging waste, e.g. when kerbside collection is in place. One important difference between the two schemes was that social norms were found to be important for source sorting in the early-stage recycling system but not in the mature recycling system. This suggests not only that more effort should be devoted to shaping social norms that facilitate household recycling behaviour when collection systems are launched, but also that the focus should be on moral norms when the convenience factors in waste management schemes are still underdeveloped.

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1. Introduction

The European Waste Framework Directive aims at mainstreaming a more sustainable management of municipal waste in the European Union (EU) by setting out basic management principles and targets for waste collection and recycling. Although national implementation of the Directive could vary across EU member states, many use similar approaches, principles and policy measures, including extended producer responsibility, landfilling restrictions, landfill taxes, deposit–refund systems and public–private partnerships. However, in spite of considerable harmonisation of waste-related policy approaches within the EU, there are still significant differences in this regard among member states themselves. Sweden, for instance, landfills less than 1% of its municipal solid waste, whereas Poland and the Baltic States

landfill around 50–70%. Such differences could be explained by many factors, including massive investments in incineration infrastructure (e.g. Sweden's in the 1970s) as well as differences in incentive structures, investment strategies, institutional arrangements, organisational efficiencies and allocations of responsibility to different stakeholders – especially the role of households in sorting packaging and food waste. Indeed, the degree to which households are involved in sorting waste varies greatly among EU member states. Typically, where households are heavily involved in sorting activities, that is, where sorting is closer to the source and recyclables and wet fractions like kitchen waste are separated at an early stage, higher-quality waste materials can be extracted. Furthermore, cleaner recyclable fractions have higher value than less clean ones, and are in greater demand by the recycling industry. In systems where households are less involved and where waste-sorting takes place in centralised sorting facilities instead, the amount and value of recyclables are lower, while a higher share of processed waste ends up in landfills (Miliute and Staniškis, 2010).

Engaging households in sorting waste requires time and effort – not only in terms of raising awareness and imparting knowledge on how to run effective information/education campaigns, but also in

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terms of understanding the role of behavioural motivating factors. The surrounding techno-organisational conditions (e.g. infrastructure, legal requirements) and internal socio-psychological factors (e.g. behavioural-economic, social and moral norms, environmental concerns) are both important in shaping household recycling behaviour (HRB). Although these factors have been studied extensively, they are often treated in isolation from each other. In addition, not much is known about the possible interrelations between techno-organisational and socio-psychological aspects of HRB (Miafodzzyeva and Brandt, 2013).

In order to address waste practices and adjust policy approaches to fledgling waste management (WM) systems and, in so doing, improve the sustainability of municipal WM, one needs a better understanding of the factors that facilitate HRB. The overall aim of this study, therefore, was to understand the main motivating factors determining HRB in an early-stage recycling system, and assess whether they differed from those in a mature recycling scheme. This study was the first of its kind at the time to use this approach to analyse HRB in an Eastern European context.

2. Literature review of behavioural factors for HRB

Studies on HRB in Europe concentrate largely on countries with mature recycling schemes and rarely include more than one country. For instance, studies on HRB have been performed in Norway (Bruvoll et al., 2002), Portugal (Oom do Valle et al., 2005; Vicente and Reis, 2008), Spain (Meneses and Palacio, 2005), Sweden (Hage and Söderholm, 2008; Hage et al., 2009; Miliute-Plepiene and Plepys, 2015) and the United Kingdom (Barr, 2007; Davies et al., 2002; Evison and Read, 2001). Only few studies include the analysis of a situation in more than one country, and most often they focus on mature recycling schemes (Halvorsen, 2012; Ida and Paul, 2012; OECD, 2011). Studies on early-stage recycling systems, e.g. in Eastern Europe, are scarce and often have limited insights into the regional aspects of WM (Miafodzzyeva et al., 2010).

Many studies in different disciplines have tried to identify factors that explain HRB. For instance, social scientists and psychologists are mainly interested in internal socio-psychological motivation factors such as social or moral norms (Fornara et al., 2011; Klöckner, 2013; Schwab et al., 2014). Economic studies typically focus on external motivations through economic incentives in combination with different convenience factors (e.g. (Brown and Johnstone, 2014; Elia et al., 2015; Hanf and Batllell, 2008; Jenkins et al., 2003). After caring out a meta-analysis of 63 empirical studies on HRB published between 1990 and 2010, Miafodzzyeva and Brandt (2013) identified four types of factors (each comprising several variables) shaping HRB: (1) socio-psychological, (2) techno-organisational, (3) socio-demographic, and (4) other study-specific factors. These four types of factors provided a structural framework for our literature review below.

2.1. Socio-psychological factors

Norms are cultural products consisting of values, customs and traditions created collectively, shaping the behaviour of individuals. In sociology, *norms* are described as informal understandings guiding our behaviour in society (Lapinski and Rimal, 2005). We found the definitions of *social* and *moral norms* as formulated by Bicchieri (2006) to be clear and practical, although they have been criticised for being too simplistic (Dubreuil and Grégoire, 2013). According to Bicchieri (2006, p. 11), a *social norm* exists when (1) a sufficient number of individuals know that the norm exists and applies to a given situation, and (2) enough individuals have a conditional preference to comply with the norm if their expectations are satisfied. The expectations, in turn, can be *normative*, i.e. what

you think others expect from you or what they think you ought to do, and *empirical*, i.e. what you have observed or know about the behaviour of others in a similar situation. *Moral norms*, according to Bicchieri (2006, p. 11), demand unconditional commitment based on largely intrinsic emotional responses: non-compliance would elicit a strong negative emotional response of repugnance. Thus, the distinction is that social norms are followed conditionally and are prompted by the satisfaction of normative and empirical expectations, while moral norms are followed unconditionally and are prompted by emotional reactions.

The Theory on Reasoned Action and the Theory of Planned Behaviour (TPB) proposed by Martin Fishbein and Icek Ajzen in 1990s are useful for framing this research. The former explains that people's motivation to behave in a certain way (intentions) is induced by their internal evaluation of a suggested behaviour as positive (self-shaping of attitude) and by important peers wanting them to perform that behaviour (peer shaping a subjective norm). Although this correlation (*attitudes + subjective norms*) → (*behavioural intention*) → (*actual behaviour*) has been seen in many studies (Sheppard et al., 1988), it is not universal. For instance, one's strong pro-environmental attitudes and the supporting prevailing norms may not always be effective for adequate pro-environmental behaviour. This is explained by Ajzen's Theory of Planned Behaviour, which points to the important effects of circumstantial limitations. Examples of such hindrances could, for instance be, the behavioural intention to recycle waste, but an inability to do so due to a lack of accessible/convenient recycling infrastructure or a belief that one's behaviour will not have notable environmental impact (Stern, 2005).

Many studies find moral norms to be a strong motivator of household recycling behaviour (Barr et al., 2003; Berglund, 2006; Bruvoll et al., 2002; Hage et al., 2009; Halvorsen, 2008; Meneses and Palacio, 2005; Miafodzzyeva et al., 2013). If altruism as an accepted norm and a personal sacrifice for the sake of a better environment and the future generations in one of many expressions of it, then Schwartz's psychological theory of altruistic behaviour (the *Schwartz Theory* later herein) is also useful for framing research on recycling behaviour. The theory suggests that people are generally more prone to think about themselves as socially responsible and, thus, are more likely than not to act in an altruistic way (Schwartz, 1977). An individual's fear of guilt and a bad conscience acts as a deterrent for behaviour that does not conform with his/her internal moral norms, i.e. the individual feels a moral obligation to behave in a certain way. However, moral norms may not form and apply in isolation from other norms. Schwartz (1977) suggests that, initially, moral obligations are formed and activated by social interactions and prevailing social norms, but the importance of social norms reduces as time passes. Applied to HRB, this implies that, at the initial stages of a recycling system's development, the social pressure in terms of (dis)approval from others (friends, neighbours and relatives) is important in shaping an individual's moral norms. There is also some evidence that social norms could impact directly on HRB. For instance, Tucker (1999) and Barr et al. (2003) found social norms to be important when HRB was highly visible.

The Schwartz Theory has been explored in a more recent research on households' environmental behaviour (Brekke et al., 2010; Brekke et al., 2003; Bruvoll et al., 2002; Nyborg et al., 2006; Oom do Valle et al., 2005). Their research suggests that, in order to motivate HRB, moral norms should be activated through raising awareness about the problem, i.e. that waste has negative environmental externalities, and responsibility needs to be ascribed (Guagnano et al., 1995; Hage et al., 2009). According to Nyborg et al. (2006) and Hage et al. (2009), beliefs about recycling efforts by others guide an individual's decision as to whether or not to assume personal responsibility. To ascribe personal responsibility, therefore, an individual needs to perceive his/her personal impact on

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