



Recycling waste: Does culture matter?



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ABSTRACT

The aim of this study is to explore the relationship between culture and waste recycling, in order to provide a possible estimation of the impact of cultural participation upon households' behavior within the meta-issue of sustainability. We look at the cognitive and social determinants of pro-environmental behavior. We based the exploratory analysis on the Italian Multipurpose Survey on Households Daily Life Aspects 2007, provided by ISTAT. We used data on household behaviors to highlight the determinants of waste recycling by moving from a cultural–ecological standpoint. The analysis highlights a strong positive relation between the propensity to take part in some cultural activities and the propensity to abide by waste recycling guidelines and prescriptions. Our empirical results indicate that policies aiming to influence sustainable development by fostering pro-environmental behaviors may be more effective when considering the cultural participation dimension as a complementary factor.

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1. Motivations and literature background

The blueprint for worldwide sustainable development put forward by Agenda 21 (UNCED, 1992) identified waste from domestic sources as a major barrier to achieving environmental sustainability, thus raising interest toward community attitudes in waste recycling (Barr, 2007; Fiorillo, 2013). In this sense, waste recycling represents a prominent indicator of environmental sustainability. For instance, Kinnaman (2006), Martin, Williams, and Clark (2006) and van den Bergh (2008), showed linkages between waste materials and land-filling in terms of economic costs, health and environmental risks. As resources decrease and waste increases, recycling has thus become imperative, and a critical environmental practice. Within this context, as Barr, Gilg, and Ford (2001) point out, the political agenda of developed nations has been focused more and more on enabling households to reach sustainable waste management targets, thereby enhancing responsible waste behavior, such as effective recycling.

The community dimension of both awareness and action is today well appreciated, but then, how is it possible to motivate people to recycle and to improve the effectiveness and social relevance of recycling practices? The issue has stimulated a stream of interdisciplinary research (economics, psychology, sociology, engineering, law, to list a few ones). The economics viewpoint, for instance,

puts pricing schemes or incentives under the spotlight, including monetary rewards (e.g., Curlee, 1986; Jenkins, Martinez, Palmer, and Podolsky, 2003; Hage and Söderholm, 2008). Environmental psychologists concentrate upon altruistic motivations (e.g., De Young, 1986; Tang, Chen, and Luo, 2011). Sociologists consider social pressures and environmental constraints such as moral norms activated through social interactions (e.g., Burn and Oskamp, 1986; Tonglet, Phillips, and Read, 2004; Hage, Söderholm, and Berglund, 2009). Legal researchers consider the effects of legal measures such as mandatory recycling laws (e.g., Lanza, 1983; Hicks, Dietmar, and Eugster 2005; Viscusi et al., 2013). Engineers compare the relative effects of alternative technologies, and the impact of their mechanical properties on waste recycling systems (e.g., Noll, 1985; Duan et al., 2011). Public pedagogues call for participation and learning processes in the context of environmental and sustainable development education (e.g. Van Poeck and Vandenberghe, 2012; Læssøe, 2010). In order to attain a balanced, interdisciplinary point of view, Hornik et al. (1995) conducted an extensive meta-analysis, and summarized the impact of different variables by grouping them into five categories: Extrinsic Incentives, Intrinsic Incentives, Internal Facilitators, External Facilitators, and Demographic Variables. Among the five meta-factors, the strongest predictors of recycling turned out to be Internal Facilitators. Consequently, this implied that consumer knowledge and education should be the best way to tackle internal barriers to recycling due to consumers' ignorance. Some External Incentives, such as social influence and monetary rewards, also played a significant role, even if the effect of the former seemed more conducive to long-term

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changes in behavior than the latter. In case of monetary incentives, pro-environmental behavior usually lasts only as far as the incentive is in place, and may even cause motivational crowding out when it ceases (Frey and Jegen, 2001). Barr, Gilg, and Ford (2001) and Barr (2007) developed a conceptual framework for understanding and analyzing households' attitudes toward waste management. In order to establish a linkage between environmental attitudes and recycling actions, they took into account three predictors: environmental values, situational variables, and psychological variables. Their findings, that cover not only recycling activities but also minimization and reuse of waste, point out that situational variables are significant in shaping recycling behavior (more specifically, logistical factors such as the presence of recycling services and facilities). The lack of facilities as a barrier to waste management is a common finding in the empirical literature (Coggins, 1994; Perrin and Barton, 2001; Omran et al., 2009). Environmental values and psychological variables are more relevant for minimization and reuse than for recycling, which turns out to be perceived mainly as a normative behavior. Another common predictor analyzed in the literature is the socio-economic and demographic profile of recyclers. Belton et al. (1994) showed that non-recyclers tend to be found among relatively young people in low-status socio-economic groups. Perrin and Burton (2001) find, accordingly, that the more mature, the better educated and the homeowners are more likely to be recyclers. Samdahl and Robertson (1989) found a positive association between higher education and recycling. A link between higher socioeconomic status and recycling emerged in Vining and Ebreo (2002). It seems, however, that the analysis of socio-economic and demographic determinants of recycling is rather inconclusive (Guerin, Crete, and Mercier, 2001), in that other researchers have come up with contradictory or non-significant results (McGuire, 1984; Oskamp et al., 1991; Valle et al., 2004). Literature results are then somewhat mixed, and debate is still ongoing to single out the most significant determinants of recycling (see Tang, Chen, and Luo, 2011 for a review). More recently, Miafodzyeva and Brandt (2013) carried out a meta-analysis of results from previous studies on different variables influencing the households' recycling behaviors. They evaluated trends in research outputs in the period 1990–2010, and their analysis classified variables affecting the recycling behavior of householders into four theoretical groups: socio-psychological, technical-organizational, individual socio-demographic and study-specific. The strongest predictors of householders' recycling behavior were identified as follows: convenience, moral norms, information and environmental concern.

The overall picture that emerges from past and current published research allows to conclude that:

- (i) predictors of waste behavior seem to include a large array of diverse variables, which capture the influence of a variety of factors;
- (ii) even though households are generally aware of recycling, such awareness does not necessarily reflect into actual recycling practice;
- (iii) further research is needed to identify reliable recyclers profiles, and to explore the role of underlying psychological, cultural and social attitudes to recycling.

In view of the previous discussion, we believe that there is room to delve a little deeper into the cognitive determinants of households recycling behavior. In particular, in this paper we examine the role of a factor that has been entirely overlooked so far and is, to our knowledge, pondered here for the first time in the literature on waste recycling: namely, households' cultural capital (Throsby, 1999, 2005). Cultural capital, as Throsby argues, comes in both tangible and intangible forms. The stock of tangible cultural capital assets consists of many different artifacts such as historical buildings and locations with cultural significance (the so-called cultural heritage), as well as objects such as artworks (paintings, sculptures, etc.), books, music,

video and multimedia, and so on. Intangible cultural capital includes ideas, practices, beliefs, traditions and values, which carry special significance and identity value for groups and communities. The underlying hypothesis is that cultural capital fosters awareness on a multitude of socially relevant issues, and therefore motivates individuals to take, consequently, more responsibility as to the pro-social dimension of their daily acts. In the specific case of pro-social, environmentally conscious behavior, people's awareness may be solicited directly, for instance, by reading books or watching movies which are primarily focused on environmental issues, but also indirectly, as a result of accessing e.g. emotionally engaging cultural contents which generically stimulate the individual sense of responsibility, of social and environmental connectedness, and so on; but also less targeted cultural contents may have a relevant indirect effect on environmental responsiveness.

And then, can the cultural sphere have a sensible influence on waste recycling behavior? In the affirmative case, given the inconclusiveness of the preexisting literature, this could be a powerful argument for further investigation of the cultural/symbolic dimension of pro-social behavior, and of the environmentally related one in particular. Moreover, the existence of a meaningful connection between environmental issues and cultural participation would establish an intriguing and so far unexplored link between ecological and cultural economics, that could be conducive to further, stimulating research. As we will show in the present paper, we believe that this link is important, and that cultural capital may be an important factor in understanding the determinants of recycling behavior, so that further examination of the cultural-environmental link seems to be warranted by the preliminary evidence provided here. Specifically, by using the Italian Multipurpose Survey on Households Daily Life Aspects 2007, provided by ISTAT, the paper contributes to the household waste recycling literature by analyzing the role of non-economic factors in the household's decision to sort and recycle domestic waste. In particular, we emphasize the importance of cultural consumption on the recycling decisions of individuals who regularly carry out carefully sorted waste collection and disposal. In addition, we address the problem of self-selection of individuals, due to the practical difficulties encountered in making separate waste disposal, e.g. individuals who do not sort out waste because the recycling bins are difficult to reach. In this case, we implement a probit model à la Heckman. The remainder of the paper is organized as follows. In Section 2, we discuss why culture could be a relevant determinant of waste recycling. In Section 3, we introduce the econometric framework and discuss our strategy. We present our data in Section 4. We then discuss our results in Section 5, and provide concluding comments in Section 6.

2. Cultural access and attitude toward recycling

The recent literature provides us with several hints as to why and how culture acts as a powerful driver of sustainable development. Sacco and Crociata (2013) present a conceptual framework for the design of culture-driven development strategies, and for the evaluation of the multidimensional effects of culture; see also Sacco, Ferilli, and Tavano Blessi (2014). Even within this framework, however, no attempt has been made so far at exploring the relationship between culture and the ecological dimension. Here, we focus upon the relationship between cultural participation and recycling behavior, by looking at the cognitive and social determinants of pro-environmental behavior and its connections to cultural, social and human capital components. The cultural economics literature widely acknowledges that culture is an asset that generates forms of social value that are complementary to economic value (Throsby, 2005, p. 3). Investigating the peculiarities of intangible cultural capital (according to the Throsby definition, quoted above), Hutter (1996) argues that culture can play an important role in shaping up a collective identity within a community, thereby solidifying binding social ties and contributing

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