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Encouraging pro-environmental behaviour: Energy use and recycling at Rhodes University, South Africa

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ABSTRACT

The rapid expansion of student numbers, staff and support infrastructures in higher education institutions often result in increased demand for resources such as energy and paper. Promoting pro-environmental behaviour is critical if higher education institutions are to achieve sustainable resource use. Using surveys, reported energy use and recycling behaviour of staff and students in the Faculty of Education at Rhodes University, South Africa was explored. The results showed that self-reported pro-environmental behaviour was mediated by demographic factors and personal values such as 'liking of aesthetic beauty and biodiversity', 'social relations', 'a varied life' and 'freedom'. Personal values, though key in shaping participants' attitudes toward the environment did not always translate into pro-environmental behaviour. Situational factors beyond the control of participants were cited as barriers to pro-environmental actions. Lessons from this study point to the need to carefully study the assumptions underlying intervention strategies aimed at promoting pro-environmental behaviour and to get rid of barriers to enable pro-environmental actions.

1. Introduction

Globally, there is a growing consensus among policy makers, environmental practitioners and researchers that the causes of environmental challenges such as global warming, climate change, water shortages and biodiversity loss are deep-rooted in human practices (Millenium Ecosystem Assessment, 2005; Rockström et al., 2009), in particular behavioural patterns (Poortinga, Steg, & Vlek, 2004; Steg, Bolderdijk, Keizer, & Perlaviciute, 2014; Steg & Vlek, 2009). One sector where global environmental challenges are linked to human behaviour is within high education institutions where individual practices on resource use can lead to collective challenges (Altan, 2010). Given this, sustainability debates have now turned to higher education institutions because they are increasingly becoming major consumers of resources such as energy and paper as they continually expand (Altan, 2010; Amutenya, Shackleton, & Whittington-Jones, 2009; Marcell, Agyeman, & Rappaport, 2004). With the recognition of their increasing pressure on the environment, many institutions of higher learning are aware that they cannot be seen to be lagging behind in promoting pro-environmental behaviour (Lozano, Lukman, Lozano, Huisingh, & Lambrechts, 2013). The signing of the Talloires Declaration in 1990 by various university presidents, rectors and vice chancellors marked a shift towards an environmentally sustainable path for universities (Lozano et al., 2013). The Talloires Declaration – whose focus was on 'inequitable and unsustainable production and consumption patterns' (Adlong, 2013; Lozano et al., 2013), spurred universities into taking the lead in encouraging pro-environmental behaviour amongst their staff and students.

Consistent with global massification trends, the number of students enrolled in South African high education institutions is ever growing and universities are making efforts to recruit more academic and technical staff members and expand relevant infrastructures equal to this growth. In fact, the South African government plans to raise university enrolment from about 900,000 to 1.5 million students by 2030 (MacGregor, 2012). There is little doubt that this rapid expansion will lead to a higher demand for energy and other resources or materials. Therefore, there is a need for intervention strategies to improve resource use efficiency and minimise the environmental and operational costs incurred by institutions (Altan, 2010; Amutenya et al., 2009). The high and unsustainable usage of resources such as energy and paper has serious financial consequences. For example, Marcell et al. (2004) observed that Tufts University in the USA spent about 2% of its

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US$509 million budget on energy costs in 2002. Rhodes University in South Africa spends approximately US$1.2 million a year of its constrained budget on electricity costs – money that could otherwise be used for supporting important learning activities. Similarly, the unsustainable usage of resources, such as paper increases universities' procurement bills (Amutenya et al., 2009), while cleaning up of general waste that could be avoided through recycling and reuse may possibly result in huge costs due to the financial, time and human resources required (Ojedokun, 2011). Apart from the financial benefits of promoting pro-environmental behaviour, from a moral perspective universities should consider the environmental consequences of continued unstainable resource use. Cortese (1992) argues that universities as champions of sustainability research should 'practice what they preach'. In other words, universities have a moral responsibility to contribute to sustainability through providing the lived experiences of sustainable communities (Cortese, 1992).

Various tools such as environmental audits and fines have been employed to manage unsustainable and unacceptable environmental practices. However, these programmes have seldom succeeded because they largely address the symptoms rather than the influential factors behind human behaviour. Given this, studies on the determinants (personal values and situational factors) of environmental behaviour are increasingly being used as a basis for designing behavioural intervention programmes (He & Kua, 2013; Ojedokun, 2011; Poortinga et al., 2004; Steg et al., 2014; Steg & Vlek, 2009). For example, in Singapore, Kua and Wong (2012) found that households reduced energy consumption through behavioural intervention programmes. In a study of paper recycling patterns at Rhodes University in South Africa, Amutenya et al. (2009) suggested that paper usage could be substantially reduced (and up to 10% of costs avoided) through encouragement of recycling and reusing behaviour. Thus, intervention programmes targeting human behaviour have become the main strategies through which pro-environmental behaviour could be promoted and sustained. According to He and Kua (2013), these programmes are favourable because contrary to top down managerial policies, they are flexible, can be implemented easily without going through long bureaucratic process and are inexpensive because implementation is based on voluntary participation. This means that behavioural influences need to be studied and understood to inform intervention programmes aimed at promoting pro-environmental behaviour (He & Kua, 2013; Kua & Wong, 2012; Poortinga et al., 2004).

However, to our knowledge, there is little examination of (i) energy use and recycling behaviour and (ii) the relationships between personal values and situational factors and behaviour in South African high education institutions. According to Katzeff, Broms, Jönsson, Westholm, and Räsänen (2013), there is a lack of rigorous data on the interaction of these factors in influencing environment-related behaviour beyond the household level. Therefore, the objectives of this study are (i) to explore reported behaviour on energy use and recycling and (ii) examine the links between reported behaviour and various personal values and situational factors, as a basis for identifying areas for promoting pro-environmental behaviour. The study focuses on energy use and recycling using the Faculty of Education at Rhodes University, South Africa, as a case study. The findings of this study are expected to have broader policy and practical implications for intervention strategies aimed at promoting pro-environmental behaviour at higher education institutions in South Africa and beyond.

1.1. Determinants of pro-environmental behaviour

Various factors that influence environmentally relevant behaviour patterns often determine the success of a management system and its longevity (Bamberg & Schmidt, 2003; Eriksson & Forward, 2011). Amongst these are values held by individuals and situational factors that tend to influence the perceived benefits and effectiveness of the behaviour, the knowledge and difficulty of the behaviour, and social influences on the behaviour (Bamberg & Schmidt, 2003; He & Kua, 2013; Kua & Wong, 2012). The difficulty lies in relating these various factors to each other and finding how they influence actual behaviour when other factors are excluded (Bamberg & Schmidt, 2003). Studies have attempted to find whether pro-environmental behaviour is mainly normative, morally driven or guided by personal cost-benefit analyses through the use of three theories of behaviour which can be related to personal values and situational factors (Bamberg & Schmidt, 2003).

Froh et al. (2011: 291) defines values as "desirable, trans-situational goals that vary in importance and help guide people's lives". These are the building blocks that determine a person's behaviour towards the environment and can be related to the norm activation model which is conceptualized by the feelings of moral persuasions that individuals hold (Bamberg & Schmidt, 2003; Kua & Wong, 2012). Personal attributes like environmental concern, knowledge and awareness and demographic factors such as age, income and education influence individual behaviour (Hanyu, Kishino, Yamashita, & Hayashi, 2000). According to Schwartz (2012), people with a stronger awareness of the negative consequences of unsustainable behaviour tend to have pro-environmental behaviour. Studies show that high education levels, high income and individual freedom are positively correlated with pro-environmental behaviour (Hanyu et al., 2000). Changes in personal values would present the largest influence on changes in pro-environmental behaviour as they are formed over the course of a person's life. However, some studies argue that personal attributes such as a high level of environmental awareness do not always translate into pro-environmental behaviour (Kellstedt, Zahran, & Vedlitz, 2008; Kollmuss & Agyeman, 2002). Other contextual factors like support infrastructure provision, convenience and distance may act as enablers of or barriers for pro-environmental actions as they influence the opportunity to engage in pro-environmental activities. Pro-environmental strategies that are difficult and expensive to implement may not yield the desired pro-environmental actions.

1.2. The case study: the faculty of education at Rhodes University

Rhodes University is situated in Grahamstown (S33° 18′ 57.72″ and E26° 31′ 24.67″) in the Eastern Cape Province of South Africa (Rhodes University, 2014). The student population at Rhodes University is around 7000 with about 2000 academic and technical staff members (Rhodes University, 2014). The Faculty of Education is one of the six faculties at Rhodes University, with a total of 40 academic and administrative staff members (Rhodes University, 2014).

Soon after signing the Talloires Declaration in 1998, Rhodes University developed its own environmental policy, aimed at achieving the 10 goals set out in the Declaration. The policy lists (a) conducting a campus wide environmental audit, (b) reducing campus waste, (c) maximising campus energy efficiency and (d) providing opportunities for students to study campus and local environmental issues among its aims (Rhodes University, 2013). The policy considers that the active participation of both academic and support staff and students is critical if the aims are to be achieved.

Consistent with Rhodes University's efforts to move towards a sustainable future, the Faculty of Education initiated a project called EcoSonke in 2001 to promote pro-environmental behaviour. Through the project, the Faculty focused on various