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The Economics of Greening the
South African National Arts Festival

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THE ECONOMICS OF GREENING THE SOUTH AFRICAN NATIONAL ARTS FESTIVAL

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Abstract

The paper analyzes the broad history underpinning the concept of sustainable development and its context within the events industry and specifically with regards to the South African National Arts Festival. A pilot contingent valuation study conducted at the 2010 National Arts Festival determined that the average visitor was willing to pay an extra ZAR 2.30 (approximately US\$ 0.30) per ticket for a recycling programme to be established to process the waste generated by the event. While the paper concluded that the theoretical basis of the study was sound, a larger sample size would have been preferred so as to enhance the model's predictive power.

Keywords: contingent valuation, environmental externalities, event greening, South African National Arts Festival, sustainable development, willingness to pay.

1. INTRODUCTION

While the United Nations Climate Change Conference (Copenhagen, 2009) generated little consensus between nations on policy goals, what did emerge was a global recognition that the survival of the human species pivots on our ability to account for our impact on the Earth's natural resources (Trevors and Saier, 2010). Since Copenhagen, public sentiment regarding environmental issues has been galvanized in a manner not seen since the sinking of the *Exxon Valdez* (March 24, 1989) following the destruction of British Petroleum's *Deepwater Horizon* rig. Using Hardin's (1968) famous metaphor, it would seem that the villagers are growing restless in the knowledge that their pasture is finite and that effective management is required to sustain it for future generations. Meanwhile, resolutions like that of the Stockholm Accord and the Third King Commission Report indicate that businesses are beginning to comprehend the value of widening the scope of their planning to include principles of "triple-bottom line" management (Falconi *et al.*, 2010; The Institute of Directors Southern Africa, 2009).

In the age of social media, "green taxes", CO² offsets, integrated reporting and the "triple bottom line" it is no wonder that the concept of "sustainable development" has become so popular. However the term "sustainable development" implies the ability to continue along current, exponential growth paths while maintaining environmental quality. In the long run, however, the extraction of resources from the Earth's finite

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biosphere is not sustainable (Gowdy and McDaniel, 1995; O'Hara, 2009; Pelletier, 2010; Davidson, 2005).

Events have gradually become bigger as a result of a globalizing world, making their organization, facilitation and financing an expanding industry. This expansion has been framed with the recognition of the increasing impact tourism patterns are having on the environment (Laing and Frost, 2010: 261). As such, the "greening" of mega-events is a trend likely to grow with the increase in responsible global citizenship in the new century (Getz, 1997: 36; Katzel, 2007: 60).

This paper focuses on the environmental sustainability of the National Arts Festival (NAF) (Grahamstown, South Africa) within the mega-events industry. By defining the term "greening" and contextualizing the resulting trend within mega-event industry, this paper sets out to analyze the consumer willingness to pay for a "greener" NAF using a contingent valuation survey. Furthermore, it analyzes case studies which "greened" similar events and identifies common success factors.

2. ECONOMIC GROWTH AND SUSTAINABILITY

The interest in sustainability and "going green" can be traced back to the first international gathering regarding issues of global environmental management, namely the 1949 United Nations Scientific Conference on the Conservation and Utilization of Resources (Davidson, 2005).

The contextual meaning of the word "sustainability" has evolved over the past decades and its usage should be analyzed so as to attain a better understanding of the word's relationship with the term "going green" (Davidson, 2005). Pelletier (2010: 222) notes that prior to the 1972 United Nations Conference on the Human Environment, there had been little involvement of anyone outside the scientific field with regards to the issue of environmental degradation. However the emerging interests of the global South saw environmental issues being best addressed through economic development, resulting in a shift from scientific management to economic development (Irwin, 2001; Davidson, 2005: 4). The term "sustainable development" won popular support after its use in the Brundtland Report (1987). Its role as a "buzz word" in the environmental policy-making arena was cemented when it was adopted in Agenda 21 and the Rio Declaration (UNDESA, 1992; McManus, 1996; also see Davidson, 2005: 3). The rise of the neo-liberal ideology under the governance of Reagan and Thatcher saw the dominant discourse in the North as growth orientated and opposed to calls for limits to be placed on economic expansion (Davidson, 2005: 4). According to Davidson (2005: 11) neo-liberal ideology has underpinned the definition of "sustainable development". Consequently this led to a shift in focus from environmental concerns towards economic priorities (Irwin, 2001).

As Davidson (2005: 10) argues:

"The response to the absence of market prices for the ecological system resulted in the further (neo-liberal) application of internalisation of external costs, privatisation and monetisation of communal resources, quality control and management, a further liberalisation of markets and international trade, a competitive self-regulation of business, and government intervention".

In Pelletier's (2010: 220) opinion, it is the current manner in which global industrialism is structured and the implicit world-view of neoclassical assumptions which need to be

altered for environmental sustainability to become viable. Pelletier (2010: 220) describes these neoclassical assumptions as an “instrumental conception of non-human nature, rampant materialism, technological optimism and an expansionary economics premised on the axiomatic necessity of unconstrained growth”.

Ayres (2008: 285) further contends that the term “sustainable development” has come to mean the near opposite of its original meaning. In some circles the term has been taken to mean “continuous development” which, as Ayres (2008: 285) argues, is not sustainable because the survival of the human species requires the reduction of anthropogenic pressures placed on the environment. Pelletier (2010: 221) concurs that the contemporary meaning assigned to sustainable development “constitutes an uneasy (if rarely challenged) marriage of the promotion of environmental integrity and ... unconstrained economic growth”.

With a finite biophysical base, the long-run ideal of unconstrained growth is a fiction of the collective human imagination (Pelletier, 2010: 225). Therefore the solution, according to Pelletier (2010: 226), will not stem from industry led “sustainable development” but rather in the re-organisation of human activities that “transcend the pathological premise of a growth-fixated industrial society”.

The influential demographic theorist Thomas Malthus (1798) predicted that exponential growth of human populations (and their resulting incomes) would eventually outstrip the supply of natural resources which were either absolute in limit or increasing in a linear fashion. Malthus (1798) proposed three solutions namely, the rapid expansion of science and technology to meet the concern; the discovery of substitutes for the natural resources and the reduction of family sizes. The neoclassical theory holds that the human species will be able to evade the “Malthusian trap” through the signals sent by increasing prices of scarce commodities (Perkins *et al.*, 2006: 794; Brodribb, 1997: 49). For example, the rising cost of crude oil would be a signal for entrepreneurs to enter the market place and seek alternative energy sources or to conserve the crude oil on hand. However, the neoclassical school presupposes that markets are efficient which is, arguably, where the theory falls short (Perkins *et al.*, 2006: 794).

Furthermore, the price signal conveyed to economic agents may not be transmitting the most sustainable message. For example, the entrepreneur seeking new energy substitutes for crude oil may be responding to the market’s demand for energy and not society’s demand for “cleaner” (renewable) energy. Pelletier (2010: 228) summed up the imperative to open the discourse on our desire to develop, writing that:

“To advocate an ecological political economy founded on scale-based environmental governance is therefore by no means a utopian vision, nor is it even an unrealistic vision. Rather it is a pragmatic vision of the evolutionary path that industrial society must necessarily follow - not towards a certain future, but in order to secure the possibility of choosing amongst worlds that might be.”

In a world where no government aims for zero (or negative) growth in the hopes of constraining human activities so as to align their productive capacity with that of the biospheric environment, this epistemological mindset is difficult to transcend (Pelletier, 2010: 226). The problem seems to scale up exponentially when one considers the lack of global consensus on which environmental policies are appropriate in a rapidly expanding and globalized community (Trevors and Saier, 2010).

However as Johnson (1971: 3) wrote:

“Orthodoxy is, of course, always vulnerable to radical challenge: the essence of an orthodoxy of any kind is to reduce the subtle and sophisticated thoughts of great men [people] to a set of simple principles and straightforward slogans that more mediocre brains can think they understand well enough to live by - but for that very reason orthodoxy is most vulnerable to challenge when its principles and slogans are demonstrably in conflict with the facts of everyday experience.”

3. DEFINING AND CONTEXTUALIZING THE SHIFT TO “GO GREEN”

3.1. *Defining “going green”*

The term “going green” or “greening” has become a popular way to refer to the notion of incorporating an element of environmental awareness into whatever is described in conjunction with the term. “Going green” entails the incorporation of an awareness of the environmental damage being caused by one’s activities and putting in place strategies to abate the damage caused by these.

In the events-management industry, an event is termed “green” when it has been successfully designed, organized, managed and staged in accordance with sustainability principles (Katzel, 2007: 28). Laing and Frost (2010: 262) define sustainability widely so as to include economic and socio-cultural sustainability when using the word “green” with reference to events (also see Tassiopoulos and Johnson, 2009). Ayres (2008) and Pelletier (2010) point out that organizations (and events) realigning themselves with the principle of “greening” should remember that developing sustainably cannot infer the continuous and uninhibited growth which is projected by some proponents of “sustainable development” (Okech, 2009: 236).

3.2. *Greening events: real world application*

Katzel (2007: 28) argues that the skills-set required of the modern day events manager includes the ability to make economically, environmentally and socially responsible decisions which take long-term sustainability into account (also see Hart, 1997: 1; Elkington, 1998: 1; Smith-Christensen, 2009: 25; Musgrave and Raj, 2009: 2). In this regard, Dwyer *et al.* (2000: 176) map the positive and negative interactions between these three spheres within the context of event organizing and management (Musgrave and Raj, 2009: 5).

However, sustainability management usually forms an auxiliary task for an event manager which can result in a diluted “green plan” and limited successes when the resulting initiatives are implemented. Furthermore, the event industry’s tendency to operate on relatively short-term planning cycles can lead to an event manager disregarding the long-term impacts that cumulative events may have on the surrounding environment (Katzel, 2007: 28; Lamberti *et al.*, 2009: 121).

Jones *et al.* (2006) highlight that there are indeed barriers which hinder the adoption of sustainability principles within events (Musgrave and Raj, 2009: 2). The reality of implementing “greening” initiatives is that they involve the development of new organisational habits, which is easier said than done (Griffin, 2009: 43; Raj and Musgrave, 2009: 56). Every event is unique resulting in a myriad of approaches which can be taken to develop new organisational habits. However, the approaches taken by three events of a

similar genus to that of the National Arts Festival present some insight as to how a theoretical term like “sustainability management” can be put into practice in the event management industry. The subsequent sections review the “greening plans” of the following three events, and identify common success factors: *Bluesfest* (Byron Bay, Australia), *Rocking the Daisies* (Darling, South Africa) and the *Village Green Fair* (Grahamstown, South Africa).

The annual East Coast Blues Festival began in 1990 and quickly became better known as the “Byron Bay Bluesfest” (Bluesfest, 2010a). The internationally acclaimed event is one of the most highly awarded Australian festivals, which sees 80 000 attendances over five days of performances by featured artists from every continent in the world (Bluesfest, 2010a; 2010b).

Rocking the Daisies was initiated in 2006 as an eco-friendly music event to be held annually at the Cloof Wine Estate located outside Darling (Western Cape, South Africa). At the 2009 edition of *Rocking the Daisies* a total of 10 256 people attended the three day event which featured predominantly South African musicians and performers (Steadfast Greening, 2009).

The *Village Green Fair* was started in 1989 as a project of the Grahamstown Foundation as a craft market offering for visitors to the annual NAF. Its expansion has seen the establishment of a tented market which houses approximately 300 stalls selling a collection of the crafts produced within Southern Africa (The Grahamstown Foundation, 2010).

3.3. Recognizing and acting on the “greening” trend

Evident throughout the three case studies is the recognition of the “greening” trend and the necessity for the events to implement processes to ensure the long-term sustainability of the event and its stakeholders (Musgrave and Raj, 2009: 9). In the case of the *Bluesfest*, the recognition of the trend saw the adaptation and evolution of the event in order to become more sustainable. On the other hand, *Complete Events* saw the trend as an opportunity to establish an entirely new event to cater for the growing niche market of consumers demanding “greener” lifestyle choices. The result was the establishment of *Rocking the Daisies* in 2005 and the recent creation of its “sister event”, *Rocking the Gardens* (Johannesburg, South Africa).

Whether the incorporation of “greening” initiatives was the result of event organisers adapting their product to ensure long-term sustainability or the creation of an entirely new product in response to consumer demand, the process was driven by event managers’ recognition of the trend and the resulting action which they took (Okech, 2009: 236).

3.4. Committing to a sustainability strategy

Central to the implementation of “greening” initiatives within the selected events was the establishment of a document which outlined the organisation’s sustainability strategies (Musgrave and Raj, 2009: 6). Musgrave and Raj (2009: 6) compile a list of core aspects which can be considered when drafting a sustainability policy. This document, in the case of *Bluesfest*, was named a “commitment to sustainability” which pledged the event’s dedication to principles of environmental, social and governance sustainability (Bluesfest,

2010c). *Bluesfest's* commitment contains six strategic goals which are supported by key aspects and actions (Bluesfest, 2010c). *Rocking the Daisies* set ten “green goals” which it publically committed itself to so as to deliver a premier music festival in an environmentally and socially responsible manner (Complete Events, 2010a). These ten points are the cornerstone of their product as it outlines the aspects of the event which visitors can expect to be “green” when they purchase their tickets. The *Bluesfest* and *Rocking the Daisies* commitments are made on public forums thus making the organisers accountable for the quality and quantity of the “green” initiatives incorporated into their events. However, the *Bluesfest's* commitment explicitly acknowledges that the document is not static, allowing for changes which may become necessary through experiential learning or the availability of new knowledge and technology (Bluesfest, 2010c).

Over and above a commitment's accountability function, the document frames the organisation's “green” vision (Musgrave and Raj, 2009: 6). This visionary function should not be taken for granted as changing organisational habits requires a clear articulation of the behaviours which are to be encouraged in replace of the outgoing ones (Okech, 2009: 237). For example, the comprehensive waste management strategy for the *Transnet Foundation's Village Green Fair (Greening the Green)* sets out clear reasons as to why the intervention is needed and the spirit in which the “greening” will be undertaken so as to rally support for the initiative from the wide network of stakeholders affected (McGarry, 2010). Lamberti *et al.* (2009: 127) propose that event managers wishing to assess their event's sustainability strategies make use of the Sustainable Events Dashboard as a management tool.

3.5. Contextual collaboration in implementing greening solutions

The waste management strategy for *Greening the Green* acknowledges that events are usually transient gatherings which require “greening solutions” specific to their context and which engage with the relevant stakeholders (McGarry, 2010; Okech, 2009: 236). By incorporating stakeholders into “greening” processes a collaborative approach is forged between organisers, government, civil society and businesses already involved in sustainability initiatives in the area, so as to find creative solutions for the event's environmental impact. For instance, the waste management strategy of *Greening the Green* acknowledges the developing country context in which the event is held and the need to create “greening” initiatives which jointly address the prevailing social issues, such as the livelihoods of the community of informal waste-pickers in the area (McGarry, 2010).

Collaborations and partnerships are key strategies in achieving “greening” objectives in that they allow for local knowledge to come to the fore and specialist skills to be utilized. Furthermore, collaborations aid the “greening process” by offering objective feedback from external partners, providing increased capacity to problem solve and a level of accountability for the implementation of specific projects. Virtual networks and forums are available for event managers to share ideas, solutions and thoughts on “event greening” on local, national and international platforms (A Greener Festival, 2010).

Whilst engaging with stakeholders is crucial, all three case studies have seen the involvement of environmental consultants in the planning and implementation of their “greening” initiatives. *Rocking the Daisies* extended the role of environmental consultants to conduct a “green audit” following the 2009 event in order to offer up a quasi-

independent perspective on the successes and failures of their “greening” initiatives (Steadfast Greening, 2009). However it should be noted that implementing simple “green” initiatives can be done without the services of a professional consultant and limited resources should not be a constraining factor in launching a sustainability policy within an organisation.

3.6. The use of incentives to channel consumers’ choices

One of the major difficulties of “greening” initiatives is to make consumers aware of the disconnection between the Earth’s environmental resources and the lack of prices for these in the market place (Spaargaren and Mol, 2008: 350). One approach to narrow this gap is to offer consumers incentives to channel them towards more environmentally responsible choices. In the context of the *Bluesfest*, Von der Heidt and Firmin’s (2009) study found that ticket holders were willing to pay more for the benefit gained from knowing that their attendance at an event was not negatively impacting upon the environment (also see Richardson, 2009: 109).

BluesFest offers their visitors the option of accounting for their transport emissions to the event by selling a “green ticket” to their audiences to facilitate a carbon offset programme. *Rocking the Daisies* has opted to incorporate the entire costs of their “greening” initiatives into their ticket price while offering incentives in the form of discounts to those who wish to cycle or walk to the event (Complete Events, 2010b). The strategic plan of *Greening the Green* is to implement reduced rents for food vendors who are willing to switch to biodegradable packaging material (McGarry, 2010). However, the theme of incentives is connected to that of collaboration – for an incentive programme to be successful the stakeholders must be drawn into consultation in order for it to be implemented effectively (McGarry, 2010).

3.7. The importance of transparency and ethics in regard to greening initiatives

The importance of transparency and “green ethics” is most prominent in the organisation of *Rocking the Daisies*, with “being green” at the core of differentiating their product in the market place. The publishing of their “greening audit” by a third party is crucial if they are to maintain their brand image and customer base. In this regard, event managers are increasingly looking towards certification and brands to signal their sustainability to event-users (Smith-Christensen, 2009: 26).

The issue of “green washing” is explicitly noted in the waste management strategy of *Greening the Green* as a factor which can detract from the success of any event’s “greening” initiatives (McGarry, 2010). “Green washing” refers to the practice of paying lip service to “greening” principles and delivering shallow initiatives which are not effective in countering an event’s environmental impact (Griffin, 2009: 45). The Third King Report and Code of Governance for South Africa highlighted the need for greater emphasis to be placed on ethics and transparency in reporting an organisation’s sustainability practices (The Institute of Directors Southern Africa, 2009). In order to maintain stakeholders’ support for “greening” initiatives organisations must have their full confidence that their contributions will not be misappropriated and will be directed towards “greening” purposes (Musgrave and Raj, 2009: 10). As Musgrave and Raj (2009: 10) note: “token gestures only add mistrust to what many believe is an ideological principle”.

4. THE ECONOMICS OF GREENING THE NATIONAL ARTS FESTIVAL

4.1. Contextualizing “going green” at the National Arts Festival

The National Arts Festival (NAF), held annually in Grahamstown (Eastern Cape, South Africa), is modeled on the Edinburgh Festival (Scotland, United Kingdom). The NAF offers visitors a variety of genres to pick from such as comedy, theatre, physical theatre, music, music theatre, jazz, dance, art exhibitions, film, walking tours and lectures performed by local and international artists. The NAF line-up has a ‘Main’ and ‘Fringe’ programme. The ‘Main’ programme consists of heavily sponsored, invited productions (with tickets costing, on average, ZAR 35 / US\$ 4.5) and the ‘Fringe’ programme which has no selection criteria, little or no sponsorship and is open to any production company (‘Fringe’ tickets cost, on average, ZAR 50 / US\$ 6.5) (Lankester, 2010). When the NAF started in 1974 there were approximately 60 performances which were held over a week (Snowball and Willis, 2006a: 43). Over the 15 day 2010 National Arts Festival, 185 776 attendances were recorded at a total of 2 691 performances (418 ‘Fringe’ productions staging 2 181 performances; 228 ‘Main’ productions staging 510 performances) (Lankester, 2010). In 2003 the economic impact of the NAF on the Grahamstown economy was estimated to be approximately ZAR 33 million (approximately US\$ 4.5 million) (Snowball and Antrobus, 2003).

The growth of the NAF since its inception in 1974 tracks the tendency of events to gradually become bigger as a result of globalization. The “greening” trend is a relatively recent addition to the industry. Katzel’s (2007) paper traces the trend’s history and offers readers unfamiliar with the concept of “event greening” a list of eleven mega-events which have incorporated environmental sustainability into their planning and implementation. With environmental concerns aside, there is still debate amongst researchers regarding whether or not it pays for a business to “go green” (Levy, 1995; Hess, Kaouris and Williams, 1999; Hamschmidt and Dyllick, 2006). However a number of studies have linked the trend to a stream of possibly unforeseen benefits for businesses such as cost-saving by pre-empting government implementation of environmental policies or improved differentiation strategies (Sharfman and Fernando, 2008; Ambec and Lanoie, 2008; Bonini and Oppenheim, 2008).

However, there is an imperative for the events industry to change their perceptions regarding sustainability and recognize the increasing impact tourism patterns are having on the environment (Laing and Frost, 2010: 261; Gössling *et al.*, 2002; Musgrave and Raj, 2009: 6). Laing and Frost (2010: 261) note the growing consciousness that socially and environmentally responsible activities should “become the *modus operandi* of business in the 21st century” as an imperative for the shift towards “greening” events. Von der Heidt and Firmin (2009: 1) view the shift in the event industry as being driven by consumers’ demand for “greener” choices and consumers being prepared to pay a premium for an environmentally sustainable event. Laing and Frost (2010: 262) highlight that consumer demand for sustainable events is likely to expand, creating the incentive for event managers to “go green” or face the possibility of forgoing future patronage (Richardson, 2009: 110).

Apart from consumer demand for the shift, there are supply side incentives for the industry. For instance, in some countries there are regulatory penalties connected with the failure to meet environmental standards when staging events (Laing and Frost, 2010: 262). Furthermore, performers are becoming more environmentally conscious, an example being the 2008 refusal of Radiohead to play at the Glastonbury Festival due to poor public transport links for visitors to the venue (Laing and Frost, 2010: 263).

4.2. The costs and benefits of the National Arts Festival

According to Crompton *et al.* (2001) some of the cost drivers of mega-events include food and beverages; night clubs, lounges, and bars; retail shopping; accommodation expenses, private vehicle expenses and commercial transportation. However, as Katzel (2007: 1) highlights, event hosting is a double-edged sword with the host reaping the economic benefits whilst incurring the associated social and environmental costs. Environmental degradation in the wake of an event may cause a variety of costs which have an impact on society as a whole rather than on private individuals. Dávid (2009: 66) provides a detailed review of the types of environmental externalities which are caused by events. In the case of the NAF, Snowball and Antrobus (2002) point towards pressure being placed on existing infrastructure, traffic flow problems, overcrowding, increased security requirements and friction between local and visiting store holders as social costs which are not adequately accounted for (also see Smith-Christensen, 2009: 26).

4.3. Valuing non-market environmental goods/services

In the neo-liberal theoretical framework, the shift towards “going green” is a response to the market failure created when prices deviate from scarcity values and individual firms (inadvertently or intentionally) make decisions which are entirely based on their private profit maximizing function at the expense of society (Perkins *et al.*, 2006: 758). Batabyal *et al.* (2003: 337) note that the economic response to alleviating environmental degradation is centered upon incorporating the broadly defined costs and benefits (i.e. private and social) of environmental goods/services into monetary values so as to allow these prices to act as scarcity signals within the existing market system. Ayres (2008: 281) highlights the history behind this economic approach of absorbing “externalities” (costs and benefits which are not explicitly captured in the market value of a good or service). Hanneman (1994: 19) concurs that without the quantification of environmental damage in monetary terms, the principles of economics would be undercut, leaving economic interventions on sustainability ineffectual.

Generally, environmental goods are difficult to measure because they are non-excludable and seemingly non-rivalrous in consumption (Fisher *et al.* 2009: 647). However, the non-rivalrous characteristic of an environmental good or service could fall away given the collective effects of individuals’ consumption patterns. The most widely used method of estimating the non-market values of environmental attributes or amenities is utilizing a contingent valuation (CV) study to estimate respondents’ willingness-to-pay for the particular environment attribute or amenity (Frykblom, 1997). Using carefully designed questionnaires (most effectively administered via face to face interviews), the method involves directly asking consumers what the maximum amount they would be willing to pay for a good or service that is not currently sold in the market

(Snowball, 2008: 230; Carson *et al.*, 2003: 258). However, the CV method is not without its critics and care has to be taken to minimise bias when constructing a CV survey (Kahneman and Knetsch, 1992: 57; Desvousges *et al.*, 1993: 91; Diamond and Hausman, 1993: 62). However, according to the National Oceanic and Atmospheric Administration Panel report on CV analysis, the method can: “produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive-use values” (NOAA, 1991: 44). Carson *et al.* (2001: 173) performed an in-depth study into the literature regarding the controversies addressed by Diamond and Hausman (1993) and found that “claims that empirical CV findings are theoretically inconsistent are not generally supported by the literature” (also see Bohm, 1979; Carson and Mitchell, 1993; Botelho and Pinto, 2002; Murphy *et al.*, 2005; Snowball, 2008).

5. METHOD

A pilot CV study was conducted at the 2010 NAF to determine the mean willingness to pay (WTP) of Festival visitors for a hypothetical recycling programme. The CV study consisted of 132 face-to-face interviews conducted between the 20th of June and the 4th of July 2010. The CV survey collected cross-sectional data (both qualitative and quantitative). The interviewers and research supervisor were briefed and trained in the month leading up to the data collection with regards to the format, process and protocol of conducting the interviews at the NAF. The interviews were conducted on a quota based on past demographic studies of the visitors to the NAF to ensure that a representative sample of the NAF population was captured (Snowball and Antrobus, 2001; Antrobus and Snowball, 2004; Snowball and Willis, 2006b). The CV survey consisted of four sections: Section one aimed to determine the respondent's use values and general attitude towards the environment, using Von der Heidt and Firmin's (2009) “green performance assessment (GPA)” (GPA measures the consumer's collectivist value, “green” buying behaviour, their “green” orientation, conception of the severity of environmental problems and their reaction to the inconvenience of “going green”). In Section two the respondent was informed of a hypothetical recycling program. The contingent situation put to the respondent was the following:

“The staging of the National Arts Festival has an environmental impact on Grahamstown with more waste from Festival-goers putting strain on the rubbish collection and dumping. This, along with other negative environmental impacts, has led the organisers to think about introducing a recycling programme at the Festival. The programme will provide special bins for different recyclable materials in different places around Grahamstown and the hiring of a team of workers to collect and neatly bundle the material. This would cost around R 200 000 (US\$ 26 866, € 20 553, £ 17 969) per year. One way of getting this additional money is to put a flat rate surcharge on every ticket sold to attend a Festival performance.”

The interviewer enquired whether respondents would be willing to support such a programme and, if so, what was the maximum amount they would be willing to pay to fund the programme per ticket sold to attend a NAF performance. The WTP scenario and questions were carefully designed to limit hypothetical bias by describing an item with which visitors were familiar and making use of a realistic payment vehicle (Carson and Mitchell, 1993). Furthermore, the word “greening” was removed from the questionnaire so as not to introduce a possible trend bias.

Section three asked questions to determine how and why the visitors calculated their WTP amount for the hypothetical programme and other questions designed to test the consistency of the respondent's answers to those given in Sections one and Section two. Section four collected the respondent's demographic information. Respondents were given the opportunity to review their answers and WTP amount upon completion of the survey. The hypothesised determinants of WTP are listed in Table 1.

Table 1: Hypothesised determinants of WTP for the contingent recycling programme at the 2010 NAF

Variable	Definition	<i>A priori</i> expectation
Environmental concern (GPA)	Measured using Von der Heidt and Firmin's (2009) "green performance assessment" where an index measurement was calculated as discussed in text below	Positive
Ownership values	Measured by the number of NAFs previously attended	Positive
Origin	1 if non-local; 0 if local	Negative
Use values (Use)	The number of ticketed shows a respondent attended	Positive
Age	Recorded in 10 categories ranging from 1 (Younger than 20) to 10 (Older than 60)	Positive
Sex	1 for male respondents; 0 for female respondents	No relationship expected
Education (Edu)	0 if none; 1 if primary; 2 if secondary; 3 if apprenticeship; 4 if one tertiary qualification had been obtained and 5 if more than more tertiary qualification had been obtained	Positive
Race	1 for White visitors; 0 for Black, Coloured, Indian and Asian visitors	No relationship expected
Household income (HhIncome)	1 if less than R 30 000; 2 if R 30 001 – R 35 000; 3 if R 35 001 – R 40 000; 4 if R 40 001 – R 45 000; 5 if R 45 001 – R 50 000; 6 if R 50 001 – R 55 000; 7 if R 55 001 – R 60 000; 8 if R 60 001 – R 65 000; 9 if R 65 001 – R 70 000 and 10 if Greater than R 70 000	Positive

To calculate a visitor's "green performance assessment" (environmental concern) an index was created using the respondent's average response to a group of questions asked in relation to each of the five variables used in the study by Von der Heidt and Firmin (2009). For example, to determine the respondent's "collectivist value" the following question was asked:

<p>2. On a scale of 1 – 10 (with 1 being "not important at all" and 10 being "very important"), how important are programs which protect water resources in the area where you live so you can have clean and safe water to drink?</p>											
1	2	3	4	5	6	7	8	9	10	0	Don't know
Not important at all									Very Important		

Four questions followed this one regarding the remaining GPA variables, with respondents giving a value from 1 to 10 on the same scale. The respondent's GPA index was calculated by finding their mean answer to all five variables.

A regression analysis was run to estimate the (population) mean of the dependent variable, in this case WTP, given the known values of the independent variables listed in Table 1. *A priori* a positive relationship was predicted to exist between WTP and the respondent's "green performance assessment" (*ceteris paribus*, an individual with a greater concern for the environment would place a higher value on a contingent recycling programme than someone with little concern for environmental issues), age (*ceteris paribus*, the older an individual is, the higher the bequest value placed on the environment for future generations resulting in higher WTP values), household income (*ceteris paribus*, the greater the amount of disposable income would result in an individual placing a higher WTP amount on the hypothetical programme - household income was captured instead of individual income as it is submitted to be a better marker of disposable income),

education (*ceteris paribus*, an increased awareness of issues affecting society as a whole and thus increase the WTP amount of that particular individual), ownership (*ceteris paribus*, the greater the number of NAFs an individual had previously attended, the greater the sense of responsibility they would attach to the event's generation of waste, resulting in higher WTP values for the programme) and use values (*ceteris paribus*, the more an individual uses a resource the more they would be WTP to preserve it).

Furthermore, *a priori* a negative relationship was expected between non-local visitors and WTP in comparison to local Festival visitors (*ceteris paribus*, local visitors would place a higher value on the hypothetical programme because they have to endure the majority of the external costs associated with hosting the NAF).

The general model specification was:

$$\begin{aligned} \ln(\text{WTP}_i) = & \beta_1 + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + D_1 \text{Race}_i + D_2 \text{Sex}_i + \beta_4 \text{HhIncome}_i + \beta_5 \text{GPA}_i \\ & + \beta_6 \text{Ownership}_i + \beta_7 \text{Use}_i + D_3 \text{Origini} + u_i \end{aligned} \quad (1)$$

6. RESULTS

The sample consisted of 43% male and 57% female respondents of whom 63% were White and 37% were Black (including African, Coloured, Indian and Asian race groups). A significant proportion of the sample was younger than 40 years of age (70%) with the next biggest percentage being in the 31 – 40 age category (32%). The sample group was highly educated (53% having one tertiary level qualification and 24% having two or more tertiary level qualifications). On average, each attended 6 ticketed performances over their whole NAF stay. The sample's average GPA (green performance assessment) was 6.3/10 while the average response to the importance of implementing the proposed recycling programme was 7/10 (with 1 being “not important at all” and 10 being “very important”).

A positive response was recorded towards being prepared to pay more per ticket for a “greener” NAF, with 72% indicating they would be willing to pay an extra amount for the proposed programme. 77% of the respondents indicated that they would purchase the same number of tickets if they faced an increase of ZAR 1.50 (US\$ 0.20) per ticket. The amount of ZAR 1.50 was used as the proxy amount, per ticket, which would be needed to recoup the costs of implementing the hypothetical recycling programme.

A high proportion of respondent's (99.22%) stated that they intended to return to the NAF in 2011 indicating that they more than likely responded with the understanding that they may have to incur the WTP amount when purchasing NAF tickets in the future.

An OLS linear regression was performed on the sample data, however, the log-linear functional form was preferred for reporting purposes as the goodness-of-fit was better. A constant was added to the WTP amounts in order to include zero responses in the log-linear regression. The application of this technique has no affect on the coefficients as the log of a constant is zero (Snowball, 2008: 156). The overall model was statistically significant (F-statistic significant at the 1% level) and, for cross-sectional data with small sample sizes, the model fitted the data fairly well (*ceteris paribus*, 33.28% of the variation in the percentage change in the WTP could be explained by variations in the dependent

variables). 10 observations were excluded for either lack of completeness or internal inconsistencies in their specific responses.

The log-linear regression was calculated as:

$$\widehat{\text{Ln(WTP}_i\text{)}} = -0.933495 + 0.031383 \text{ Age}_i + 0.146066 \text{ Education}_i + 0.136128 \text{ Race}_i \\ + 0.018734 \text{ Sex}_i + 0.072945 \text{ HhIncome}_i + 0.161818 \text{ GPA}_i \\ - 0.042144 \text{ Ownership}_i - 0.006951 \text{ Use}_i + 0.029970 \text{ Origin}_i \quad (2)$$

A binary probit regression was used to determine which variables were significant in determining the probability of being willing to pay or not. The variables of age, education, a respondent's environmental concern (GPA) and the number of ticketed performances the respondent was attending were found to have a positive relationship on the probability of a respondent being willing to pay at the 1% level of significance.

Tests for multicollinearity were run on race / household income, education / race and age / household income, with results between 0.028813 and 0.296894, indicating that multicollinearity, while present, was within acceptable levels.

Results of the log-linear model (Table 2) show that, holding all other variables constant, if environmental concern was to increase by 1 index point then overall WTP would increase by 16.18% (significant at the 1% level). This is as expected, and acts as an important validity test, since one would predict that people who are more environmentally concerned would be WTP more for a recycling initiative. This finding indicates that the study was measuring existing preferences, making the WTP results more reliable.

Holding all other variables constant, if education was to increase by a category, then overall WTP would increase by 14.61% (significant at the 5% level). This is as expected *a priori* since higher levels of education are likely to indicate more knowledge of, and thus concern about, the environment. However, it should be noted that visitors to the NAF tend to be highly educated individuals so there would probably be higher WTP values elicited from NAF visitors than the general population.

If household income was to rise by a category then, *ceteris paribus*, overall WTP would increase by 7.3% (significant at the 5% level). This result was an *a priori* expectation in that the greater the amount of disposable income an individual has, holding all other variables constant, the greater the amount they would be willing and able to pay for the contingent recycling programme. In the context of the study this is a noteworthy result in that many NAF attendees are from higher income households. It is also an important reliability test, since it shows that the respondents were considering their budgets when making willingness to pay decisions, as one would in a real market scenario.

With all other variables held constant, if the number of previous NAFs attended by the respondent increased by 1 then the overall WTP would decrease by 4.21% (significant at the 10% level). This result was opposite to the *a priori* expectation. It was expected that as an individual who attends more NAFs should feel a greater sense of responsibility for the waste generated by the NAF. However, the negative result indicated that this was not the case. One suggested explanation is that regular NAF visitors are responding to limit the possibility of increased ticket prices in the future because of "greening" costs being incorporated.

Table 2: Factors influencing visitors' WTP for a hypothetical recycling programme at the 2010 NAF

Variable	Dependent Variable: WTP	Dependent Variable: Ln(WTP)
Constant	-3.874906	-0.933495
Age	0.092641	0.031383
Education	0.513612**	0.146066**
Race	0.317592	0.136128
Sex	0.240694	0.018734
Household Income	0.349234**	0.072945**
GPA Index	0.544881***	0.161818***
Ownership	-0.144056**	-0.042144*
Use Values	-0.087100	-0.006951
Origin	-0.140628	0.029970
Mean dependent var	2.303279	0.939806
Adjusted R-squared	0.261671	0.332810
Prob(F-statistic)	0.000001	0.000000
Durbin-Watson stat	0.602876	0.602307
Total obs included	122	122

*** Highly significant at the 1% level

** Significant at the 5% level

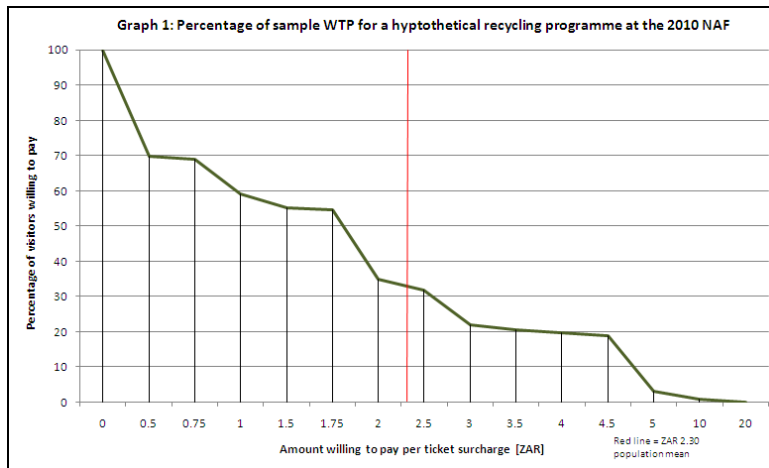
*Significant at the 10% level

Table calculated using *EVIEWS 6*

7. DISCUSSION

Graph 1 indicates the negative relationship between the percentage of the sample group willing to pay for the hypothetical recycling programme at the 2010 NAF; and the WTP amount. As the surcharge per ticket rises the percentage of individuals within the sample group willing to pay falls. This relationship reflects the existence of diminishing rates of marginal utility for the contingent recycling programme and conforms to economic theory (as the price of a good increases, the quantity demanded decreases) (Gowdy and Erickson 2005: 215). The estimated mean WTP for the population was ZAR 2.30 (approximately US\$ 0.30) per ticket as indicated by the vertical red line on the graph (with the median WTP for the sample being ZAR 2.00).

If the NAF were to use incentives to channel consumers' choices they could either: i). offer visitors a class of "green ticket" where ZAR 2.30 has been included and which the visitor can purchase on request; ii). place a surcharge on all NAF tickets of ZAR 2.30 to "green" all tickets or iii). a surcharge on all tickets of ZAR 2.30 with the consumer given the choice of "opting out" in favour of paying the standard ticket rate. If the NAF were to implement option ii)., the extra revenue generated to be directed towards "greening" initiatives would amount to ZAR 302 346.50 (approximately US\$ 41 187). However, this amount would need to be adjusted downwards to account for the price elasticity of NAF tickets. It is noteworthy that the unadjusted amount would comfortably exceed the proxy costs of implementing the hypothetical recycling programme described in the CV survey. However the administrative burden would need to be considered by the organisers and the most efficient option chosen in collaboration with the service provider who manages the ticketing system for the NAF. The collaborations, transparency and ethics involved in "event greening" would be critical in undertaking a successful "green" ticketing strategy.



8. CONCLUSION

There are various economic incentives for mega-events to “green” although the profitability of “greening” to organisations have not been substantially proven (Laing and Frost, 2010; Levy, 1995; Hess, Kaouris and Williams, 1999; Hamschmidt and Dyllick, 2006). The methods utilized by the environmental economists to value non-market environmental commodities are well suited to factoring in these incentives whilst incorporating the private and social costs which are incurred in staging mega-events.

Whilst applying these methods, it is important to include theorists such as Davidson (2005), Aryes (2008) and Pelletier (2010) in the “greening discourse” so as to highlight and oppose the misnomers in the mainstream, neoliberal vision of sustainable development. Organisations realigning themselves with the principle of “greening” should remember that developing sustainably cannot infer the continuous and uninhibited growth that is projected by some proponents of “sustainable development” (Aryes, 2008; Pelletier, 2010).

The findings of this pilot study provide significant insight into the consumer demand for a “greener” National Arts Festival by showing that the estimated population mean willingness to pay for a hypothetical recycling programme at the 2010 NAF was ZAR 2.30 (US\$ 0.30) per ticket. Visitors’ environmental concern (GPA), level of education, and household income were found to be statistically significant and positively related to a consumer’s willingness to pay for the proposed programme. The results correspond with the literature regarding the demand for “greener” events and are generally relevant, not only to the NAF, but for all events contemplating implementing “greening” strategies (Getz, 1997; Katzel, 2007; Von Der Heidt and Firmin, 2009; Laing and Frost, 2010).

The case studies highlighted the common approaches taken by events managers to “green” their events, namely: the recognition and action on the “greening” trend; an organisation’s commitment to a sustainability strategy; the use of contextual collaborations in implementing “greening” solutions; the use of incentives to channel consumers’ choices; and the importance of transparency and ethics involved in “greening” programmes. These five approaches will assist the organisers of the National Arts Festival in starting to “green” the event.

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