
Consumerism and Sustainable Development: An Australian-South Korean Comparative Study¹

Patrick Mullins

(Reader in Sociology, The University of Queensland, Australia)

Dai-Yeun Jeong

(Department of Sociology, Cheju National University, South Korea)

John S. Western

(Department of Sociology, The University of Queensland, Australia)

Ian Lowe

(Department of Environmental Science, Griffith University, Australia)

Rod Simpson

(Department of Environmental science, Griffith University, Australia)

Abstract: This paper addresses a socio-cultural contradiction, one that is of monumental proportion, being global in scale and allegedly threatening the survival of the natural and social worlds. It emanates from two cultural imperatives - consumerism and environmentalism - and their consequent behaviours - consumption and environmental behaviour. Consumerism is a cultural imperative that demands we appropriate as many goods and services as possible and that we should do this essentially for fun and enjoyment. In contradistinction, environmentalism is the cultural imperative that demands we act in an environmentally sustainable way and, most particularly, do this by cutting back on consumption and against a backdrop of a impending

Key words: Consumerism, Environmentalism, Consumption, Environmental Behaviour, Sustainable Development

1. This work was supported by Korea Research Foundation (KRF) and Australian Research Council (ARC) Grant under a Memorandum of Understanding between the Australian and South Korean governments. The authors wish to acknowledge the financial assistance from KRF and ARC, and thank Shin-Ock Chang for her research assistance.

Korean Social Science Journal, XXXI No. 1(2004): 1-38.

apocalypse, one emanating from today's 'risk society'. Consumerism is by far, the most pervasive of the two cultural goals.

Of the two behavioural outcomes, consumption refers to the appropriation of goods and services, particularly for fun and enjoyment, and it is a process that has developed into a wild and obsessive consumption; A 'hyperconsumption'. Environmental behaviour, in contrast, refers to actions taken to protect the natural environment and thus achieve a sustainable environmental development. Of the two forms of social action, consumption is the more pervasive, thus making it impossible to achieve sustainable development.

The paper presents a comparative analysis, between Australia and South Korea (hereafter called Korea), of consumerism and consumption, and environmentalism and environmental behaviour. It found a number of basic similarities between the two urban regions under study, South East Queensland and the island province of Cheju. There were similarities in terms of environmentalism, anti-environmentalism, consumption, and environmental behaviour. Overall, the biggest difference was with consumerism.

I. Introduction

In enveloping all peoples in all parts of the world, consumerism and environmentalism are two of the more striking components of contemporary culture. Consumerism is the cultural imperative that demands we appropriate as many goods and services as possible and that we should do this for fun and enjoyment rather than simply necessity (Miles, 1998; Sklair, 1991). Environmentalism is the cultural imperative that demands we act in an environmentally sensitive way and do this by eschewing excessive consumption, for only in this way can we halt environmental degradation and achieve ecological sustainability (Milton, 1996). Here, then, is a cultural contradiction, for it is impossible to equally satisfy both imperatives. The 'hyperconsumption' (Ritzer, 1999) demanded of consumerism threatens the environment, while the behaviour invoked by environmentalism reduces people's ability to consume.

The behavioural manifestations of consumerism and environmentalism - 'hyperconsumption' and acting in an environmentally sensitive way - therefore lead to a social contradiction. Consumption refers to the appropriation by individuals and households of goods and services, while environmental behaviour encompasses actions leading to the protection of the natural environment, the ultimate goal being to achieve 'sustainable development'. Since consumption is the more pervasive of the two behaviours (Sklair, 1991), ecologically sustainable development appears impossible.

In practice, then, risk society is more likely a product of the negative effects of an ever-increasing hyperconsumption than intermittent technological disasters. The day to day destruction of the environment by hyperconsumption, an activity driven by consumerism, has a more pervasive and pernicious impact. Thus, by understanding consumerism and consumption and environmentalism and environmental behaviour, we are in a better position to judge the

nature of global and national risk, and therefore the possibilities of achieving a socially and ecologically sustainable development. Yet, we are empirically ignorant about the way these four come together, and thus their significance for sustainable development, including their impact on sustainable development policies (Lafferty and Meadowcroft, 2001; Spaargaren and Van Vliet, 2000).

With such implications, this paper empirically examines the nature of these cultural contradictions, their contradictory behavioural manifestations, and the implications these contradictory pairs have for sustainable development. An attempt is made to identify those people who are most committed to environmentalism and consumerism, those most involved in consumption and environmental behaviour, and what the link between these values and behaviours tell us about the possibility of achieving a sustainable development. More specifically, the paper addresses the following five related questions.

Firstly, are those who hold consumerism a more different group of people from those who are most committed to environmentalism, as logic would suggest, or are they essentially the same people because consumerism and environmentalism are universal values?

Secondly, are those most committed to consumerism the major consumers?

Thirdly, are those most committed to environmentalism also those most likely to act in an environmentally sustainable way?

Fourthly, are those who act in an environmentally sensitive way a different group of people from major consumers?

Fifthly, are consumerism and environmentalism global values, and hyperconsumption and environmental behaviour global forms of behaviour?

Finally, what does this information drawn from the above five questions tell us about the possibilities of achieving ecologically sustainable development?

Australian data was used to answer the five key questions. In particular, Australian data was used in conjunction with Korean data to tackle the fourth and fifth questions. The main reason for the

conjunction of the two countries is to draw a higher level of generalisation on the fourth and fifth questions through a comparison between Australia and Korea as a developed and a developing country. Both sets of data were collected using the same research methods.

II. Consumerism and Environmentalism, Consumption and Environmental Behaviour

Although consumerism, consumption, environmentalism and environmental behaviour have been defined and discussed at varying levels of conceptual and theoretical sophistication, we know little empirically about the four together. There is certainly increasing quantitative survey-based - research on environmentalism and environmental behaviour, but there is surprisingly little on consumerism and consumption, and there is nothing empirically on the relationship among the four together (e.g. see Low et al, 2000).

Consumerism, environmentalism, consumption and environmental behaviour are located conceptually and theoretically within postindustrialism and postmodernism; concepts employed to highlight the globally-oriented socio-cultural system that emerged over the last quarter century. Postmodernity identifies the cultural shift of this period (Hannigan, 1995; Lash, 1990; Lyon, 1999) while postindustrialism pinpoints a new socio-economic system (Amin, 1994; Harvey, 1989). Environmentalism and consumerism, then, are two key, though contradictory, components of postmodern culture. Environmental behaviour and hyperconsumption are the contemporary contradictory behavioural manifestations of these imperatives.

Environmentalism has been theorised and conceptualised in three main ways. They are the theory of risk society, postmaterialist value, and New Environmental Paradigm (NEP). Firstly, as a component in the theory of 'risk society', an argument pinpointing the way fundamental changes in values, attitudes, and beliefs have occurred

around the world following perceived negative impacts on the environment of science and technology (Beck, 1992; Giddens, 1991; Lash et al, 1996). Technological disasters such as nuclear accidents, identify a society at risk, with people's growing fears about these risks leading to a questioning of the European Enlightenment's promise that science and technology will continue to bring widespread benefits.

Secondly, this European argument parallels an empirically-based North American theory: Inglehart's work on materialist and postmaterialist values (Abramson and Inglehart, 1995). Like risk society theorists, Inglehart and his colleagues maintain that a fundamental cultural shift has occurred in the more developed world over the last part of the twentieth century. People are now less concerned with material issues, like housing and food, because these are now readily satisfied. Instead, they focus on quality of life issues, like environmental sustainability. Inglehart uses the term 'materialist values' to refer to the former and 'postmaterialist values' to refer to the latter, with the shift from the former to the latter beginning around 1950, but gaining momentum from the 1970s. This socio-cultural transformation occurred after material needs were more easily satisfied in the more developed world during the 1945-73 economic boom, and because an increasing array of goods and services became readily available over the increasingly prosperous, but rapidly changing and more uncertain, post 1973 era.

Postmaterialist values are generation specific, being far more likely to be held by those who grew up during the boom years of 1945-73, and the materially rich, but unstable, post 1973 era. In contrast, older generations (those born before 1940), who had grown up in times of material hardship (particularly the Depression), are more likely to hold materialist values. By implication, then, young adults will be those who are most committed to both consumerism and environmentalism. Yet, doubts have been raised about the efficacy of this claim, with Gow (1990), for example, questioning the empirical validity of the generation-materialist/postmaterialist values thesis, in particular, for Australia.

Thirdly, the NEP, which is also an empirically-based North American theory, covers the environmental component of Inglehart's postmaterialist values thesis. Formulated in the 1970s by Dunlap and Van Liere (1978; 1984) (see also Dunlap et al, 2000), it contrasts with the Dominant Social Paradigm (DSP), the belief that humans have the right to freely exploit nature. In the West, environmentalism is most strongly held by young adults, women, the politically active, urban residents, the 'new middle class', professionals, the more educated, those with higher incomes. In contrast, older people, the less educated, the welfare dependent, and churchgoers - specifically religious fundamentalists are least supportive of this cultural imperative, while working class males are more likely to hold anti-environmentalist views (Buttel, 1978; Cotgrove and Duff, 1980; Eckersley, 1989; Kanji and Nevitte, 1997; Papadakis, 1993; Scott and Willits, 1994; Skogen, 1999; Tranter, 1999). Findings similar to, but also different from these, have been recorded for Korea: young adults, but also the religious, are more likely to hold strong environmental values (Kim, 1999).

Those espousing environmentalism are not necessarily those who act in an environmentally sensitive way (Scott and Willits, 1994). Young adults and women, for example, may hold environmentalism most strongly, but older people, a generation defined by materialist values, have been shown to be more predisposed to environmental behaviour (Woodrum and Wolkomir, 1997). Their actions seem to have less to do with a value commitment and more to do with the need to be frugal, a stance emanating from both their materialist values, and because their low income encourages thrift.

Consumerism is also a postmaterialist value, with its theorisation and conceptualisation emanating from two main sources: the sociology of development and cultural sociology. The former is most clearly enunciated by Sklair (1991), who places consumerism centrally within the development of the global system, and who maintains that consumerism is the core component of contemporary culture, enveloping all peoples in all parts of the world.

The culture-ideology of consumerism proclaims, literally, that the meaning of life is to be found in the things that we possess. To consume, therefore, is to be fully alive, and to remain fully alive we must continuously consume (Sklair, 1991: 41).

Within global capitalism, the transnational corporation is the vehicle driving this economic system, the transnational capitalist class is the driver of the vehicle, and the culture-ideology of consumerism is the fuel powering the vehicle (Sklair, 1991).

Cultural sociology's interest in consumerism is captured in theories of postmodernity (e.g. see Bauman, 1998; Bennett et al, 1999; Bocoock, 1993; Featherstone, 1991; Hannigan, 1995; Harvey, 1989; Lash, 1990; Lyon, 1999; Miles, 1998), although consumerism is also linked to a wider body of scholars, including political economy (e.g. Fine and Leopold, 1993), anthropology (e.g. Howes, 1996; Miller, 1995), and mainstream sociology (Ritzer, 1999). As with the sociology of development, cultural sociology locates consumerism and consumption centrally within the global system (Featherstone, 1991; Lyon, 1999; Miles, 1998), but emphasises the symbolic power of consumption: the accumulation of an increasing array of goods and services defines people socially and culturally, with a recognition that consumption is more significant for its sign-value or symbolic qualities than for its use-value (Miles, 1998: 23).

While there is a small, but growing, body of empirical work on consumption (e.g. Warde, 1997; Bennett et al, 1999; Savage et al, 1992), with Bennett et al (2000) providing the most detailed information for Australia, we know little empirically about consumerism. There is, for example, no consumerism scale equivalent to the NEP, with most of what is written on this value being conceptual and theoretical. For this reason we have had to construct a consumerism scale.

In sum, empirical research suggests that major consumers and those most committed to environmentalism are part of the same broad aggregate of people: essentially the young new middle class, a class

that is expanding rapidly with postindustrialisation and globalisation. By implication, those most committed to consumerism, and some of those involved in environmental behaviour, should also be part of this group. If this is the case, then a clear socio-cultural contradiction exists within this broad middle class grouping, meaning that the possibilities of achieving sustainable development are seriously constrained by the growing influence of this rapidly expanding social class.

III. Data and Methodology

The data used to test the questions posed were collected in 1999 in the South East Queensland urban region (SEQ) and in Cheju, Korea, as part of an international collaborative research project. Employing the same research method, the project focused on whether consumerism and consumption posed barriers to achieving an environmentally sustainable development within the two regions.

SEQ has a population of 2.3 million people, with Brisbane (1.6 million) forming its metropolitan core, and the tourist cities of the Gold Coast (0.42 million) and the Sunshine Coast (0.17 million) comprising the other major centres. The region also contains a number of smaller urban areas, a large rural-urban fringe, farming districts, and natural environments.

Although there are key cultural and developmental differences between Australia and Korea, SEQ and Cheju share a number of similarities. Both have pristine natural environments. SEQ has a unique river, maritime system, and a rainforest hinterland, while Cheju, with a population of 500,000 people, is valued for its maritime environment, the purity of its air and water, and an extinct volcano that physically dominates this island province. Cheju and SEQ are also major tourist destinations for the two countries.

Korea developed rapidly over the last four decades, with its recent membership of the OECD indicating its changing international standing. Therefore, the comparative analysis given below provides an

opportunity to understand the place held by two key global values (consumerism and environmentalism) and two key forms of contemporary behaviour (consumption and environmental behaviour) in the two countries with different development histories. This understanding, in turn, will help identify the possibilities of achieving a globally focused sustainable development.

The data was collected by means of a survey with a sample of 1337 SEQ households and 500 Cheju households. All samples in SEQ and Cheju were 18 years old and over. For Cheju, the samples were fixed at 500 on the basis of a sampling error of $\pm 5.0\%$ at a significant level of 99%. In SEQ, the samples were collected by means of a computer assisted telephone interview (CATI) method using Random Digit Dialling; while in Cheju, they were collected by means of face to face interviews. The comparative analysis undertaken focuses solely on the women of the two regions, since - with the exception of 15 men - the Cheju sample only comprises of women. This, then, necessitated a comparative of analysis of women. The total samples were 485 and 738 in Cheju and SEQ, respectively.

The reasons why only women were interviewed in Cheju were as follows. This survey includes household-based consumption and an intention to change consumption. Unlike Australia, Korea has a remarkable role differentiation in the way of a housewife being responsible for household affairs, and husband being responsible for the affairs outside the home. Under such a culture, the interview with women can collect more precise data.

Principal component analysis, drawing upon 80 questionnaire items, was used with varimax rotation and an eigenvalue of 1.000 in order to identify consumerism, environmentalism, and anti-environmentalism, with the same scales being constructed from the SEQ and the Cheju data respectively (See Appendices 1, 2, and 3). Alpha maximisation was undertaken when the final scales of consumerism, environmentalism, and anti-environmentalism were constructed.

These 80 items drew upon the NEP and the DSP, with items for

the consumerism scale being specially constructed because of the absence of a scale. Two measures of consumption were created; one on goods consumption and the other on leisure consumption (See Appendix 4). Three measures of environmental behaviour were also created - on transport use, energy use, and preparedness to change behaviour (See Appendix 5).

Analysis of variance, correlation, and/or multiple regression analyses were employed to identify those who were most (or least) committed to consumerism, environmentalism, and anti-environmentalism, those who were major (or minor) consumers, and those most involved in environmental behaviour. Drawing upon the findings from past research, the independent variables used in these analyses were age (generation), stratification, religiosity, civic engagement (political activity), and community ties.

Age was categorised into four groups; 18-29, 30-39, 40-49, 50 and over. Stratification was operationalised using occupation, education, and household income, and then was classified into four categories resulting from a cluster analysis - lower, middle, upper-middle, and upper.

This paper used religiosity rather than religion, for the following two reasons. Firstly, Australia and Korea are different in terms of variety and system of religion. Secondly and most notably, in relation to environmentalism, it is arguable whether religion is a significant factor determining different attitude and behaviour towards the environment (e.g. Chang, 2003). Religiosity as a composite variable was operationalised on the basis of the level of religious belief and attendance at religious services, and then was classified into four categories - no belief, low level, average level, and high level belief. The level of religious belief was measured by the extent to which the samples believe the existence of God using a six-point scale ranging from 'really exists' to 'not at all'. The attendance at religious services was measured by the frequency of attendance using a ten-point scale ranging from 'everyday' to 'no attendance'. The categorisation of religiosity was based on a mean score and standard deviation of the

total scores derived from the two scales - a six-point scale, and a ten-scale point.

Civic engagement was derived from questions about whether in the last five years respondents had: written to a newspaper; contacted a member of parliament; signed a petition; joined a specific campaign or organisation concerning environmental and/or social issues; and/or attended a public meeting on a local issue. The involvement was measured by a 'yes-no' scale on each of the six activities, giving a weight of 2 to 'yes', and 1 to 'no'. Then, civic engagement was categorised into two groups - passive and active engagement - on the basis of the mean score of the total weights.

As explained earlier, loss of community which refers to the decline of ties between neighbours and the loss of a wider set of interpersonal associations is; a consequence of the chaos caused by the rise of postmodernity. This paper measured loss of community as the extent to which community ties in everyday life are strong or weak. For measuring this, the samples were asked to think about people, except those living in the same household, and were asked the frequency with which they meet, ranging from 'daily' to 'less often than every couple of months'. The frequencies of human contact were averaged in total, with the frequency of 'average and/or over' defined as strong community ties, and that of 'less than average' as weak community ties.

It should be mentioned here that there is no theoretical and/or empirical criteria on the categorisation of civic engagement, religiosity, and community ties in terms of their level. Therefore, this paper employed a statistical grouping on the basis of mean score in total, therefore, they are in a relative position on the variables among the total samples.

Education, occupation, income, and social class are important independent variables in sociological analysis. However, this paper excluded them from the independent variables; because education, occupation and income generates a multi-collinearity with stratification which is a composite variables composed by the three, and because even though the conceptual reality of stratification and

social class is different, the two variables are very close to the demographic and socio-economic profiles of the people in terms of social rank.

IV. Findings

The questions posed at the outset of this paper are answered in four parts. The contradictory nature of the two cultural imperatives is first examined, and these are considered alongside anti-environmentalism. Secondly, major consumers and those most likely to act in an environmentally sensitive way are then discussed, and this analysis being undertaken with particular reference to whether, in practice, these behaviours involve the same people and thus whether they are socially contradictory. Thirdly, we attempted to see whether consumerism, environmentalism, and anti-environmentalism are global values, and environmental behaviour and 'hyperconsumption' global forms of behaviours. Finally, we discussed the implications that these findings have for the achievement of ecologically sustainable development.

1. Consumerism, Environmentalism, and Anti-Environmentalism

As mentioned earlier, the first stage of analysis was done to identify those who strongly adhere to consumerism, environmentalism, and anti-environmentalism. Consumerism, environmentalism, and anti-environmentalism were constructed by different number of question items (See Appendices 1, 2, and 3).

Consumerism is composed of 5 and 4 question items for Australia and Korea, respectively; Environmentalism is composed of 11 question items in the two countries; Anti-environmentalism is composed of 9 and 7 question items for Australia and Korea, respectively. All question items were measured by a five-point scale. Then, the total scores of

consumerism are ranged from 5 to 25 for Australia, and from 4 to 20 for Korea. For environmentalism, the total scores are ranged from 11 to 55 for the two countries. For anti-environmentalism, the total scores are ranged from 9 to 45 for Australia, and from 7 to 35 for Korea.

Their mean scores were estimated by the five predictor variables, and then for convenient comparison, the mean scores were adjusted based on a 100 at maximum. The results are as Table 1-1.

Table 1-1. Mean Scores for Consumerism, Environmentalism, and Anti-Environmentalism (Base=100)

| Predictor Variables | Consumerism | | Environmentalism | | Anti-Environmentalism | |
|---------------------|-------------|-----------|------------------|-----------|-----------------------|-----------|
| | Korea | Australia | Korea | Australia | Korea | Australia |
| Age | | | | | | |
| 18-29 | 43.2 | 54.8 | 77.5 | 79.3 | 59.3 | 53.2 |
| 30-39 | 39.4 | 47.5 | 78.5 | 80.5 | 60.1 | 52.0 |
| 40-49 | 38.0 | 45.2 | 80.9 | 80.8 | 60.0 | 53.2 |
| 50+ | 37.5 | 43.9 | 81.2 | 81.6 | 61.2 | 56.9 |
| | P=0.058 | P=0.000 | P=0.078 | P=0.099 | P=0.885 | P=0.000 |
| Stratification | | | | | | |
| Lower | 36.7 | 42.4 | 78.0 | 82.0 | 62.1 | 57.7 |
| Middle | 38.9 | 47.0 | 79.1 | 81.1 | 59.7 | 55.2 |
| Upper-middle | 40.0 | 47.2 | 80.5 | 81.8 | 59.3 | 52.8 |
| Upper | 47.7 | 49.2 | 81.7 | 79.7 | 58.8 | 51.2 |
| | P=0.004 | P=0.009 | P=0.329 | P=0.266 | P=0.396 | P=0.000 |
| Religiosity | | | | | | |
| No believe | 40.1 | 47.0 | 78.6 | 81.2 | 60.1 | 53.0 |
| Low | 35.8 | 47.6 | 77.7 | 82.1 | 58.1 | 53.6 |
| Average | 40.8 | 47.9 | 78.0 | 79.6 | 62.1 | 54.3 |
| High | 37.9 | 46.1 | 83.1 | 79.7 | 59.8 | 56.5 |
| | P=0.167 | P=0.647 | P=0.009 | P=0.103 | P=0.329 | P=0.001 |
| Civic Engagement | | | | | | |
| Passive | 39.3 | 48.3 | 77.1 | 79.5 | 61.3 | 51.5 |
| Active | 38.7 | 46.0 | 81.4 | 81.9 | 59.1 | 52.4 |
| | P=0.651 | P=0.015 | P=0.001 | P=0.002 | P=0.108 | P=0.190 |
| Community Ties | | | | | | |
| Weak | 35.1 | 45.6 | 78.5 | 79.8 | 63.2 | 54.7 |
| Strong | 39.3 | 48.4 | 78.3 | 80.1 | 59.2 | 54.4 |
| | P=0.086 | P=0.001 | P=0.934 | P=0.634 | P=0.125 | P=0.680 |

The following are found to be significant from Table 1-1. Overall, for the two countries, consumerism is not high, but environmentalism is quite high, and anti-environmentalism is moderate. Comparing both countries, consumerism is relatively higher in Australia, while anti-environmentalism is higher in Korea. However, environmentalism is not different between the two countries.

When the significant level of difference is fixed at 0.100, the following is found to be significant. The younger the age, the higher the consumerism for the two countries. The higher the stratification, the higher the consumerism for the two countries. The more passive the civic engagement, the higher the consumerism was for Australia, while civic engagement is not a significant variable bringing about the difference in consumerism. The weaker the community ties, the higher the consumerism for the two countries.

The older the age, the higher the environmentalism is for the two countries. The general trend in Korea is that the higher the religiosity, the higher the environmentalism. However, religiosity is not a significant variable determining the difference in environmentalism in Australia. For the two countries, the more active the civic engagement, the higher the environmentalism.

No predictor variables determine the difference in anti-environmentalism for Korea, while all predictor variables except civic engagement and community ties determine the difference in anti-environmentalism for Australia. The general trends for Australia are found as follows: The older the age, the higher the anti-environmentalism; The lower the stratification, the higher the anti-environmentalism; The higher the religiosity, the anti-environmentalism.

In sum, the women who tend to hold strong consumerism, environmentalism, and anti-environmentalism are summarised as Table 1-2.

Table 1-2. Summary of Those Who Hold Strong Consumerism, Environmentalism, and Anti-Environmentalism

| Countries | Consumerism | Environmentalism | Anti-Environmentalism |
|-----------|---|--|---|
| Korea | <ul style="list-style-type: none"> o Under 29 years old o Upper stratification o Those who have strong community ties | <ul style="list-style-type: none"> o 40 years old and over o Those whose religiosity is high o Active civic activists | |
| Australia | <ul style="list-style-type: none"> o Under 29 years old o Upper stratification o Passive civic activists o Those who have strong community ties | <ul style="list-style-type: none"> o 40 years old and over o Active civic activists | <ul style="list-style-type: none"> o 50 years old and over o Lower and middle stratification o Those whose religiosity is high |

2. Consumption and Environmental Behaviour

Consumerism, environmentalism, and anti-environmentalism are values towards consumption and environment, but not behaviours of which people behave. The second stage of analysis was done to identify their consumption and environmental behaviours in everyday life. As shown in Appendices 4 and 5, consumption behaviour was constructed by two dimensions - goods and leisure consumption, and environmental behaviour by three dimensions - transport use, energy use, and preparedness to change behaviour. They were constructed by the different number of question items (For details, see Appendices 4 and 5), using different range of scale for each question item.

The response to the scale of each question item was added by each dimension. Then, the total scores of goods consumption are ranged from 11 to 63 for Korea and Australia, those of leisure consumption from 14 to 65 for Korea and from 16 to 75 for Australia, those of transport use from 4 to 22 for Korea and from 4 to 25 for Australia, those of energy use from 8 to 26 for Korea and from 8 to 33 for Australia, and those of preparedness to change behaviour from 15 to 77 for Korea and from 10-56 for Australia.

Their mean scores were estimated by the five predictor variables,

and then for convenient comparison, the mean scores were adjusted based on a 100 at maximum. The mean scores of consumption behaviour are as Tables 2-1.

Table 2-1. Mean Scores for Consumption Behaviour (Base=100)

| Predictor Variables | Consumption Behaviour | | | |
|---------------------|-----------------------|-----------|---------|-----------|
| | Goods | | Leisure | |
| | Korea | Australia | Korea | Australia |
| Age | | | | |
| 18-29 | 37.8 | 57.0 | 26.6 | 45.7 |
| 30-39 | 38.5 | 56.3 | 26.8 | 42.4 |
| 40-49 | 35.6 | 55.5 | 24.4 | 40.2 |
| 50+ | 33.0 | 49.1 | 21.1 | 36.8 |
| | P=0.000 | P=0.000 | P=0.000 | P=0.000 |
| Stratification | | | | |
| Lower | 31.9 | 44.2 | 21.3 | 32.9 |
| Middle | 35.1 | 51.6 | 24.9 | 38.3 |
| Upper-middle | 39.8 | 56.6 | 26.3 | 42.3 |
| Upper | 47.3 | 59.1 | 33.3 | 45.7 |
| | P=0.000 | P=0.000 | P=0.000 | P=0.000 |
| Religiosity | | | | |
| No believe | 35.4 | 54.7 | 23.9 | 40.8 |
| Low | 34.5 | 52.8 | 23.1 | 39.9 |
| Average | 36.6 | 54.5 | 25.3 | 42.2 |
| High | 37.7 | 52.8 | 25.9 | 39.7 |
| | P=0.027 | P=0.109 | P=0.039 | P=0.141 |
| Civic Engagement | | | | |
| Passive | 34.9 | 53.0 | 23.3 | 38.2 |
| Active | 37.4 | 54.6 | 26.1 | 42.9 |
| | P=0.000 | P=0.023 | P=0.000 | P=0.000 |
| Community Ties | | | | |
| Weak | 34.7 | 53.3 | 24.2 | 39.4 |
| Strong | 36.4 | 53.8 | 24.7 | 40.6 |
| | P=0.177 | P=0.561 | P=0.622 | P=0.121 |
| Total | 36.1 | 53.8 | 24.6 | 40.6 |

The following are found to be significant from Table 2-1. For Korea, goods and leisure consumption is low, showing a score of 36.1 and 24.6 respectively out of 100 at maximum. Meanwhile, for Australia the two dimensions of consumption are moderate, showing a score of 53.8 and 40.6 respectively. For the two countries, goods consumption is much higher than leisure consumption. Comparing the two countries, goods and leisure consumption are higher in Australia than in Korea.

When the significant level of difference is fixed at 0.100, the following are found to be significant. The younger the age, the more they consume goods and leisure for both countries. The higher the stratification, the more they consume goods and leisure for the two countries. Religiosity is not a significant variable determining the difference in goods and leisure consumption for Australia, but for Korea, the higher the religiosity, the more they consume goods and leisure. Interestingly, for both countries, the more active the civic engagement, the more they consume goods and leisure. Community ties is not a significant variable determining the difference in goods and leisure consumption for the two countries.

In sum, the main consumers are summarised as Table 2-2.

Table 2-2. Summary of Main Goods and Leisure Consumers

| Countries | Goods Consumption | Leisure Consumption |
|-----------|--|--|
| Korea | <ul style="list-style-type: none"> o Under 39 years old o Upper-middle and Upper stratification o Those whose religiosity is average and higher o Active civic activists | <ul style="list-style-type: none"> o Under 39 years old o Upper-middle and Upper stratification o Those whose religiosity is average and higher o Active civic activists |
| Australia | <ul style="list-style-type: none"> o Under 49 years old o Upper-middle and Upper stratification o Active civic activists | <ul style="list-style-type: none"> o Under 39 years old o Upper-middle and Upper stratification o Active civic activists |

The mean scores of consumption behaviour are as Tables 2-3.

Table 2-3. Mean Scores for Environmental Behaviour (Base=100)

| Predictor Variables | Environmental Behaviour | | | | | |
|---------------------|-------------------------|-----------|------------|-----------|-----------------|-----------|
| | Transport Use | | Energy Use | | Preparedness to | |
| | Korea | Australia | Korea | Australia | Korea | Australia |
| Age | | | | | | |
| 18-29 | 47.8 | 43.6 | 51.8 | 56.9 | 77.8 | 64.2 |
| 30-39 | 46.0 | 41.6 | 51.0 | 52.9 | 79.8 | 65.4 |
| 40-49 | 45.6 | 41.4 | 49.6 | 51.0 | 79.8 | 69.8 |
| 50+ | 49.6 | 44.5 | 47.7 | 57.2 | 82.3 | 70.1 |
| | P=0.012 | P=0.000 | P=0.008 | P=0.000 | P=0.019 | P=0.000 |
| Stratification | | | | | | |
| Lower | 42.9 | 42.1 | 43.2 | 52.0 | 82.8 | 72.0 |
| Middle | 45.7 | 43.1 | 47.8 | 54.4 | 78.4 | 69.1 |
| Upper-middle | 47.3 | 43.4 | 50.9 | 55.5 | 81.5 | 67.7 |
| Upper | 48.7 | 48.3 | 52.1 | 61.3 | 68.9 | 65.0 |
| | P=0.008 | P=0.002 | P=0.000 | P=0.000 | P=0.000 | P=0.002 |
| Religiosity | | | | | | |
| No believe | 46.7 | 44.3 | 49.9 | 55.4 | 79.8 | 66.9 |
| Low | 47.6 | 43.2 | 54.1 | 55.0 | 80.0 | 69.2 |
| Average | 46.4 | 45.0 | 48.6 | 53.7 | 79.5 | 68.6 |
| High | 48.0 | 43.3 | 48.6 | 54.3 | 81.5 | 68.3 |
| | P=0.623 | P=0.526 | P=0.105 | P=0.585 | P=0.695 | P=0.366 |
| Civic Engagement | | | | | | |
| Passive | 46.8 | 42.5 | 49.9 | 54.7 | 79.2 | 67.0 |
| Active | 47.1 | 44.8 | 49.9 | 54.6 | 80.9 | 68.7 |
| | P=0.763 | P=0.009 | P=0.963 | P=0.947 | P=0.172 | P=0.072 |
| Community Ties | | | | | | |
| Weak | 47.5 | 42.2 | 52.6 | 53.7 | 83.1 | 66.5 |
| Strong | 46.8 | 43.7 | 49.0 | 55.0 | 77.7 | 69.1 |
| | P=0.703 | P=0.125 | P=0.021 | P=0.164 | P=0.033 | P=0.020 |
| Total | 47.0 | 43.9 | 49.9 | 54.8 | 80.1 | 68.1 |

The following are found to be significant from Table 2-3. For the two countries, transport and energy use are moderate, showing the mean score being ranged from 47.0 to 54.8 out of 100 at maximum.

However, preparedness to change behaviour is high for both countries, showing the mean score of 80.1 for Korea, and 68.1 for Australia. For both countries, energy use is relatively higher than transport use. Comparing both countries, transport and energy use are higher in Australia than in Korea. However, preparedness to change behaviour is much higher in Korea than in Australia.

When the significant level of difference is fixed at 0.100, the following are found to be significant. For both countries, those whose age is younger than 29 and older than 50 are the main transport and energy users, while the old of the age, the stronger the preparedness to change behaviour. As expected, for both countries, the higher the stratification, the higher the transport and energy use, while the lower the stratification, the weaker the preparedness to change behaviour. Religiosity is not a significant variable determining the difference in environmental behaviour for the two countries. Civic engagement determines the difference in transport use and preparedness to change

Table 2-4. Summary of Main Transport/Energy Users and Preparedness to Change Behaviour

| Countries | Transport Users | Energy Users | Preparedness to Change Behaviour |
|-----------|--|---|--|
| Korea | <ul style="list-style-type: none"> o Younger than 29 and older than 50 years old o Upper-middle and Upper stratification | <ul style="list-style-type: none"> o Younger than 39 years old o Upper-middle and Upper stratification o Those whose community ties are weak | <ul style="list-style-type: none"> o Older than 30 years old o Lower and Upper-middle stratification |
| Australia | <ul style="list-style-type: none"> o Younger than 29 and older than 50 years old o Upper stratification o Active civic engagement | <ul style="list-style-type: none"> o Younger than 29 and older than 50 years old o Upper-middle and Upper stratification | <ul style="list-style-type: none"> o Older than 40 years old o Lower and Middle stratification o Active civic engagementm |

behaviour for Australia in a way that the more active the civic engagement, the higher the transport use and the stronger the preparedness to change behaviour as well. Community ties is a significant variable determining the difference in energy use for Korea, and the difference in preparedness to change behaviour for the two countries. The trend is that; for Korea, the weaker the community ties, the more they consume energy; for both countries, the weaker the community ties, the stronger the preparedness to change behaviour; the stronger the community ties, the stronger the preparedness to change behaviour.

In sum, the main transport and energy users and preparedness to change behaviour are summarised as Table 2-4.

3. The Relationships among Values and Behaviours

Correlation coefficients were estimated in order to identify the relationships among the three cultural values and five behaviours, with an expectation to explore to what extent value and behaviour are consistent. The technique of seventh-order partial correlation was

Table 3-1. Partial Correlation Analysis of Values and Behaviours - Korea

| Variables | A | B | C | D | E | F | G | H |
|-----------|-------|--------|--------|--------|---------|--------|----------|----------|
| A | 1.000 | -0.041 | 0.115 | 0.133* | 0.197** | 0.113 | 0.073 | -0.260** |
| B | | 1.000 | -0.065 | 0.028 | 0.075 | 0.108 | -0.067 | 0.111 |
| C | | | 1.000 | -0.054 | -0.030 | 0.077 | -0.190** | 0.100 |
| D | | | | 1.000 | 0.355** | -0.086 | -0.324** | -0.122 |
| E | | | | | 1.000 | -0.045 | -0.076 | 0.009 |
| F | | | | | | 1.000 | 0.080 | 0.180* |
| G | | | | | | | 1.000 | 0.095 |
| H | | | | | | | | 1.000 |

Note1: A;Consumerism

B;Environmentalism

C;Anti-Environmentalism

D;GoodsConsumption

E;LeisureConsumption

F;TransportUse

G;EnergyUse

H;PreparednesstoChangeBehaviour

Note2: *;P<0.05, **;P<0.01

employed in order to identify their pure relationships by controlling the indirect impacts of other variables on the relationship between two variables.

The relationships among the three cultural values and five behaviours in the two countries are as Tables 3-1 and 3-2.

Table 3-2. Partial Correlation Analysis of Values and Behaviours - Australia

| Variables | A | B | C | D | E | F | G | H |
|-----------|-------|--------|----------|---------|----------|----------|----------|----------|
| A | 1.000 | -0.079 | 0.099 | 0.157** | 0.112* | 0.089 | -0.071 | -0.127** |
| B | | 1.000 | -0.275** | -0.021 | 0.070 | 0.033 | 0.037 | 0.231** |
| C | | | 1.000 | -0.084 | -0.124** | -0.085 | -0.021 | -0.017 |
| D | | | | 1.000 | 0.384** | -0.168** | -0.361** | -0.036 |
| E | | | | | 1.000 | 0.118** | 0.078 | -0.057 |
| F | | | | | | 1.000 | 0.281** | 0.118** |
| G | | | | | | | 1.000 | -0.012 |
| H | | | | | | | | 1.000 |

Note1: A;Consumerism
 B;Environmentalism
 C;Anti-Environmentalism
 D;GoodsConsumption

E;LeisureConsumption
 F;TransportUse
 G;EnergyUse
 H;PreparednesstoChangeBehaviour

Note2: *;P<0.05, **;P<0.01

Tables 3-1 and 3-2 show a slightly different pattern of relationship between values and behaviours, in particular, in terms of their significant correlation coefficients. Overall, however, the following are found to be significant for both of the two countries.

Firstly, in regard to the relationships between values, it would seem likely that those most committed to consumerism would be different from those most committed to environmentalism, and environmentalists would be clearly different from anti-environmentalists. Environmentalists and anti-environmentalists are certainly to be different people, but the division between those most strongly committed to consumerism, on the one hand, and those most committed environmentalism, on the other hand, is not so emphatic. There is certainly a negative correlation between these two values, but

it is not statistically significant, thus suggesting that these contradictory values consumerism and environmentalism - co - exist side by side to varying degrees with the same people. Anti-environmentalists are to be significantly committed to consumerism, even though the commitment is not high.

Secondly, in regard to the relationships between behaviours which can identify whether those involved in environmental behaviour are different from major consumers, as logic would suggest, or whether there is some overlap between transport and energy use. However, the preparedness to change behaviour is determined only by transport use in a positive way.

Thirdly, in regard to the relationships between values and behaviours, major consumers are different from those who act in an environmentally sensitive way, with only a small group being heavily involved in both types of activity. This sharp demarcation between major consumers and those involved in environmental behaviour seems to have been influenced by the large number of low-income households, who are, by necessity, involved in environmental behaviour. Their low income, then, is a clear deterrent to widespread consumption. Overall, then, there is a considerable degree of behavioural consistency with regard to consumption and environmental behaviour. Major consumers are essentially a different group of people from those most involved in environmental behaviour; An outcome that argues well for the achievement of a sustainable development.

4. The Factors Determining Consumerism, Environmentalism, and Anti-environmentalism

Multiple regression analysis was used for identifying those who are committed mostly to consumerism, environmentalism, and anti-environmentalism at a significant level of 0.05. The results are as Table 4.

Table 4. Factors Determining Consumerism, Environmentalism, and Anti-environmentalism

| Predictor Variables | Consumerism | | Environmentalism | | Anti-Environmentalism | |
|---------------------|-------------|-----------|------------------|-----------|-----------------------|-----------|
| | Korea | Australia | Korea | Australia | Korea | Australia |
| Age | -0.019 | -0.261** | 0.022 | -0.045 | -0.037 | 0.126* |
| Stratification | 0.157* | 0.032 | 0.098 | -0.047 | -0.076 | -0.022 |
| Religiosity | -0.012 | 0.057 | 0.090 | -0.111* | 0.131 | 0.066 |
| Civic Engagement | 0.007 | -0.095 | 0.082 | 0.127* | -0.100 | -0.121* |
| Community Ties | 0.139* | 0.117* | -0.007 | -0.019 | -0.114 | 0.005 |
| R ² | 0.042 | 0.109 | 0.032 | 0.009 | 0.040 | 0.037 |

Note : *, P<0.05, **, P<0.01

Tables 4 shows that consumerism is determined significantly by stratification and community ties in Korea, but by age and community ties in Australia. No variable determines significant environmentalism and anti-environmentalism in Korea; However, for Australia, environmentalism is determined significantly by religiosity and civic engagement, but anti-environmentalism is determined significantly by age and civic engagement.

For Korea, stratification and community ties determines consumerism in a positive way: The higher the stratification, the higher the consumerism; The stronger the community ties, the higher the consumerism. However, community ties is stronger in the determination of consumerism than stratification.

For Australia, the directions of the values being determined by predictor variables are: The younger the age, the higher the consumerism; The stronger the community ties, the higher the consumerism; The lower the religiosity, the higher the environmentalism; The more active the civic engagement, the higher the environmentalism; The older the age, the higher the anti-environmentalism; The more passive the civic engagement, the higher the anti-environmentalism. In terms of the strength of consumerism being determined by predictor variables, age is stronger than community ties. Civic engagement is stronger than religiosity for the

determination of environmentalism. Age is stronger than civic engagement for the determination of anti-environmentalism.

For Australia, turning to the predictor variables in terms of how many values they determine, only age and civic engagement determine more than one value. For example, age determines consumerism and anti-environmentalism, with the former being stronger. Civic engagement determines environmentalism and anti-environmentalism, with former being stronger.

The above findings from Korea and Australia would mean that consumerism, environmentalism, anti-environmentalism are more or less discernible in terms of people's social, economic, cultural, and demographic profiles, even though the discernibility is not remarkable. In particular, for the two countries, a strong community is thought to be antithetical to consumerism because the single minded individualism demanded of 'hyperconsumption' is said to deflect people's attention away from creating, maintaining, and valuing community (Bell, 1998). Instead, community is thought to thrive under conditions of environmentalism and environmental behaviour, with a commitment to communal ties being said to go hand in hand with a commitment to the environment (Bell, 1998). This would mean that community ties, which are based on an informal face-to-face social group among those whose social and economic profiles are similar, play a more important role in the formation of value of consumption than stratification which is a physically separate social group.

As is identified from R squares in Table 4, consumerism is explained relatively highest by the predictor variables for the two countries, and followed by anti-environmentalism and environmentalism. However, The explanatory powers are not high, ranging from 0.032 to 0.042 for Korea, and from 0.009 to 0.109 for Australia. From a statistical point of view, this is interpreted that consumerism, environmentalism and anti-environmentalism are determined by other independent and/or intervening variables except gender, social and economic variables that have been included in this

research.

5. The Factors Determining Consumption and Environmental Behaviour

Table 5-1. Factors Determining Consumption and Environmental Behaviour - Korea

| Predictor Variables | Goods Consumption | Leisure Consumption | Transport Use | Energy Use | Preparedness to Change Behaviour |
|-----------------------|-------------------|---------------------|---------------|------------|----------------------------------|
| Age | -0.148* | -0.114* | -0.153* | -0.242** | 0.011 |
| Stratification | 0.385** | 0.255** | 0.361** | 0.282** | -0.308** |
| Religiosity | 0.065 | 0.081 | 0.092 | -0.004 | 0.069 |
| Civic Engagement | 0.189* | 0.230** | -0.032 | 0.019 | 0.206* |
| Community Ties | 0.014 | 0.143 | -0.076 | -0.143* | -0.204 |
| Consumerism | 0.119* | 0.101 | 0.053 | 0.121 | -0.321** |
| Environmentalism | -0.173* | -0.047 | -0.128* | -0.134 | 0.015 |
| Anti-Environmentalism | 0.067 | 0.027 | 0.027 | 0.028 | -0.002 |
| R2 | 0.357 | 0.218 | 0.183 | 0.184 | 0.269 |

Note : *, P<0.05, **, P<0.01

Table 5-2. Factors Determining Consumption and Environmental Behaviour - Australia

| Predictor Variables | Goods Consumption | Leisure Consumption | Transport Use | Energy Use | Preparedness to Change Behaviour |
|-----------------------|-------------------|---------------------|---------------|------------|----------------------------------|
| Age | -0.164** | -0.261** | -0.241** | -0.106* | 0.028 |
| Stratification | 0.410** | 0.344** | 0.206** | 0.315** | -0.141* |
| Religiosity | 0.005 | -0.018 | 0.040 | -0.124* | 0.075 |
| Civic Engagement | 0.027 | 0.158** | 0.249** | 0.078 | 0.087 |
| Community Ties | 0.013 | -0.010 | 0.060 | -0.049 | 0.006 |
| Consumerism | 0.203** | 0.067 | 0.032 | 0.077 | -0.130* |
| Environmentalism | -0.070 | 0.041 | -0.088 | -0.016 | 0.168* |
| Anti-Environmentalism | 0.045 | 0.040 | 0.143* | 0.125* | -0.067 |
| R2 | 0.293 | 0.282 | 0.193 | 0.141 | 0.097 |

Note : *, P<0.05, **, P<0.01

Regression analysis was used for identifying the major consumers of goods, leisure, transport, energy, and preparedness to change behaviour at a significant level of 0.05, using age, stratification, religiosity, civic engagement, community ties, consumerism, environmentalism, and anti-environmentalism as predictor variables (See Tables 5-1 and 5-2).

Focusing on major predictor variables whose beta coefficients are relatively higher, the following are found to be significant from Tables 5-1 and 5-2. For Korea, goods consumption is determined strongest by stratification in a negative way, and followed by civic engagement and environmentalism, with the former being positive and the latter being negative. For Australia, goods consumption is also determined strongest by stratification in a positive way, and followed by consumerism and age, with the former being positive and the latter being negative.

In regard to leisure consumption, for Korea and Australia, stratification is the strongest determinant in a positive way, and followed by civic engagement in a positive way and age in a negative way for Korea, followed by age in a negative way and civic engagement in positive way for Australia.

For transport use, stratification is the strongest determinant in a positive way in Korea, and followed by age and environmentalism being a negative way. For Australia, civic engagement is the strongest determinant of transport use in a positive way, and followed stratification and age, with the former being positive and the latter being negative.

Energy use is determined strongest by stratification in a positive way for the two countries, and followed by age and community ties in a negative way for Korea, and followed by age and environmentalism, with the former being negative and the latter being positive for Australia.

Preparedness to change behaviour is determined strongest by consumerism in a positive way for Korea, and followed by stratification and civic engagement, with the former being negative and the latter

being positive. However, for Australia, preparedness to change behaviour is determined strongest by environmentalism in a positive way, and followed by stratification and consumerism in a negative way.

Turning to the predictor variables in terms of how many dependent variables they determine, age determines all dependent variables, except preparedness to change behaviour, in the two countries. Meanwhile, for the two countries, stratification determines all dependent variables. Religiosity is not a determinant of consumption and environmental behaviour in Korea, but is a determinant of energy use in Australia. Civic engagement determines goods consumption, leisure consumption, and preparedness to change behaviour in Korea, but determines leisure consumption and transport use in Australia. Community ties determines leisure consumption, energy use, and preparedness to change behaviour in Korea, but it determines no dependent variable in Australia. Consumerism determines goods consumption, energy use and preparedness to change behaviour in Korea, but determines goods consumption and preparedness to change behaviour in Australia. Environmentalism determines goods consumption, transport use, and energy use in Korea, but determines only preparedness to change behaviour in Australia. Anti-environmentalism does not determine any dependent variables in Korea, but determines transport and energy use in Australia.

In terms of R squares, the determinations of the consumption and environmental behaviour by the predictor variables are ranged from 0.183 to 0.357 in Korea, and from 0.097 to 0.293 in Australia. Overall, for the two countries, it is found to be a trend that consumption behaviours are explained more by the predictor variables than environmental behaviours. In particular, the explanatory power of preparedness to change behaviour is very low in the two countries.

In sum, then, the findings would mean that consumption and environmental behaviour are more or less discernible in terms of peoples social, economic, and demographic profiles, even though the

discernibility is not remarkable. For Korea and Australia, age and stratification are the main determinants of consumption and environmental behaviour, with a trend that the young adults and high stratification are the main consumers of goods, leisure, transport, and energy. However, the differences between Korea and Australia are: consumerism is a stronger determinant of consumption and environmental behaviour than environmentalism in Korea, while on the contrary, environmentalism is strong determinant than consumerism in Australia; Community ties, which is an informal social group based on a face-to-face interaction in everyday life among those whose social, cultural, and economic profiles are similar, plays an important role in the determination of consumption and environmental behaviour in Korea, but is not a significant determinant in Australia.

V. Conclusion: Implications for Sustainable Development

We note whether or not consumerism and environmentalism are global values, and whether or not consumption and environmental behaviour are global forms of behaviour. This question, as explained in the section of Data and Methodology, is tackled on the basis of women in SEQ and Cheju because the samples are all women. Therefore, even though Australia is a developed country and Korea is a developing one, it is true that the result drawn from the paper cannot be fully supported as global values and forms of behaviour. The reasons for this are: the two countries are not representatives of developed and developing countries; SEQ and Cheju are not representatives of Australia and Korea; moreover, the data are based on women only. However, the result drawn from SEQ and Cheju is good enough for capturing an overall trend on global values and forms of behaviour in that no earlier empirical and/or theoretical research has been done on this issue.

With such limitations, it is concluded that consumerism and

environmentalism are likely to be global values since the two countries have very similar mean scores, even though the profiles of those holding strong values are different. However, anti-environmentalism is a stronger in Australia.

Equally significantly, environmentalism is found to be a stronger value than consumerism in the two countries. This is surprising considering the claims made about consumerism being the more dominant of the two values, a claim seemingly based upon supposition rather than empirical research. That environmentalism is the stronger of the two values augurs well for efforts that focused on ecologically sustainable development.

Differences in consumption and in environmental behaviour between the two countries were found. Australians were the more significant consumers of goods, leisure, and energy, while Koreans were the more significant consumers of transport. These variations are likely to result from differing levels of affluence, with Australia's higher per capita wealth predisposing greater consumption, while Korea's lower per capita wealth predisposes a greater commitment because low income demands a frugal lifestyle - to environmental behaviour.

To conclude, we consider the implications these findings have for the achievement of ecologically sustainable development, with this judgement being based upon observations made on the level of consistency with regard to values and the level of consistency with regard to behaviour. The this paper partly confirm findings from past research, but they also provide new information, specifically on the relationship between consumerism and environmentalism and their associated behaviours. A clear link was apparent between consumerism and environmentalism and their related behaviours, thus confirming the relationship between culture and behaviour: environmentalism was a clear determinant of environmental behaviour, and consumerism was a clear determinant of consumption.

As mentioned in the section II, whereas earlier research had identified young adults, women, the politically active, and those more broadly defined as the 'new middle class' as those most committed to

environmentalism, the surprising result from this paper is an outcome that questions the significance of the materialist-postmaterialist values thesis for explaining environmentalism and environmental behaviour.

Consumerism has not previously been measured empirically, with the consumerism scale constructed here showing this cultural imperative to be most strongly held by the young, a finding coinciding with the postmaterialist values thesis. Those who have strong community ties were also surprisingly strongly committed to this value; a seemingly contradictory stance for a group so committed to environmentalism.

In the case of consumption, the biggest consumers throughout goods, leisure, transport, and energy were the young, upper-middle and upper stratification, as well as those most committed to consumerism. There were, however, differences between the major consumers of goods, leisure, transport, and energy. Finally, and generalising from the Australian and Korean data, consumerism and environmentalism appear to be global values, with environmentalism being the stronger of the two values.

These values and behaviours provide grounds for both optimism and pessimism in the achievement of ecologically sustainable development. At an optimistic level, the fact that environmentalism was found contrary to popular belief - to be the stronger of the two values augurs well for the achievement of this development. Secondly, there is a significant level of behavioural consistency for those most involved in environmental behaviour. However, on a pessimistic note, a significant group of those actively involved in environmental behaviour were on old adults and lower stratification, implying that, had they received higher incomes, they would be bigger consumers.

However, the explanatory powers of the predictor variables on the issues (environmentalism, consumerism, consumption behaviours, and environmental behaviour) are not high. It is also true that even though the relationships between the issues show a statistically significant trend, the strength of the relationships is not high. These would mean that the issues are significantly affected by other predictor

variables and/or intervening variables. Thus, further researches are necessary in order to identify empirically those variables, and to improve the level of empirical generalisation on the issues.

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Appendix

1. Consumerism

For SEQ, *consumerism* was derived from the following 5 items (Alpha=0.623): I like to try out new products that come on to the market; I like to upgrade most major appliances in my home (e.g. TV, stereo, computer) every two or three years; I often buy things that I don't really need; I spend money to have fun; I am addicted to

shopping.

For Cheju, *consumerism* was derived from the following 4 items (Alpha=0.625): I like to try out new products that come on to the market; I like to upgrade most major appliances in my home (e.g. TV, stereo, computer) every two or three years; I often buy things that I don't really need; I am addicted to shopping.

2. Environmentalism

For SEQ, *environmentalism* was identified from the following 11 items (Alpha=0.794): When humans interfere with nature it often produces disastrous consequences; we are approaching the limit to the number of people the earth can support; humans are severely abusing the environment; if things continue on their present course, we will soon experience a major ecological catastrophe; Australians are going to have to reduce their consumption of material goods over the next few years; most of us buy and consume far more than we need. It's wasteful; the 'buy-now-pay-later attitude' causes many of us to consume more than we need; the way we live consumes too many resources; the world's population is growing too fast; we focus too much on getting what we want now and not enough on the needs of future generations; if everybody in China, India and Latin America consumed as much as Australians do, it would destroy the environment.

For Cheju, *environmentalism* was identified from the following 11 items (Alpha= 0.777): the balance of nature is very delicate and easily upset; when humans interfere with nature it often produces disastrous consequences; humans are severely abusing the environment; if things continue on their present course, we will soon experience a major ecological catastrophe; many of the products that we buy are over packaged; most of us buy and consume far more than we need. It's wasteful; the 'buy-now-pay-later' attitude causes many of us to consume more than we need; the way we live consumes too many resources; the world's population is growing too fast; we focus too

much on getting what we want now and not enough on the needs of future generations; if everybody in China, India and Latin America consumed as much as Australians do, it would destroy the environment.

3. *Anti-environmentalism*

For SEQ, *anti-environmentalism* was derived from the following 9 items (Alpha=0.652): humans have the right to rule over nature; humans have the right to modify the environment to suit their needs; human ingenuity will ensure that we do not make the earth unliveable; the earth has plenty of natural resources if we just learn to develop them; the balance of nature is strong enough to cope with the impacts of modern industrial nations; the so-called ecological crisis facing humankind has been greatly exaggerated; humans will eventually learn about how nature works; material wealth is a part of what makes this a good country in which to live; the amount of energy I use does not affect the environment in any significant degree.

For Cheju, *anti-environmentalism* was derived from the following 7 items (Alpha=0.669): humans have the right to modify the environment to suit their needs; human ingenuity will ensure that we do not make the earth unliveable; the earth has plenty of natural resources if we just learn to develop them; the balance of nature is strong enough to cope with the impacts of modern industrial nations; despite our special abilities, humans are still subject to the laws of nature; the so-called ecological crisis facing humankind has been greatly exaggerated; humans will eventually learn about how nature works.

4. *Consumption Behaviour*

For SEQ, *goods consumption* was derived from the following 15 items: the number of mobile phones in the household; the frequency of eating take-away food for the evening meal; the frequency of going to

restaurants; whether, in the last three years had purchased a TV, video recorder, CD player, satellite or cable TV, a mobile phone, a motor vehicle, a computer, or a Sony Playstation/Nintendo/Sega Games Mach; the number of credit cards, the number of books; the number of CDs, the number of videos (Alpha=0.614).

For Cheju, these items were also used (Alpha=0.551).

For SEQ, *leisure* consumption was derived from the following 15 items: visited an art gallery; botanic gardens; public library; Brisbane's South Bank Parklands; museum; gone to live theatre; shopped for clothes; attended the opera; gone to a movie; hired a video; gone to a pub/hotel/club; gone to the beach; gone on holiday; visited a garden nursery; used the Internet at home (Alpha=0.657).

For Cheju, these items were also used, with the exception of 'visited South Bank Parklands', for obvious reasons (Alpha=0.782).

5. Environmental Behaviour

For SEQ, the measure of *transport use* was derived from the following 5 items (Alpha=0.503): I feel guilty using a car instead of public transport; the number of cars in the household in working order; whether respondents thought the possession of a car is a necessity or not; whether respondents thought the possession of more than one car is a necessity or not; frequency of use of public transport.

For Cheju, the measure of *transport* was derived from 3 items (Alpha=0.601): the number of cars in working order; whether respondents thought the possession of a car is a necessity or not; and whether respondents thought the possession of more than one car is a necessity or not.

For SEQ, *energy* use was derived from the following 9 items (Alpha=0.637): the amount paid on the last electricity bill; the use of air conditioning as the main type of cooling in the summer; whether the household had air conditioning; the number of refrigerators; the number of washing machine loads per week; whether the household owned a tumble clothes dryer; the ownership of a dishwasher; the

number of TVs; the ownership of a swimming pool.

For Cheju, *energy* use was derived from 7 items (Alpha=0.529): the amount paid on the last electricity bill; the use of air conditioning as the main type of cooling in the summer; whether the household had air conditioning; the number of refrigerators; the ownership of a dishwasher; the number of TVs; the ownership of a personal computer.

For SEQ, *preparedness to change behaviour* was derived from the following 10 items: the extent to which it was possible for the household to reduce the use of a car; reduce the purchase of luxuries; reduce electricity use; reduce energy for home heating/cooling; take holidays closer to home; reduce household waste; take shorter showers; take holidays closer to home; avoid the purchase of over-packaged products; avoid the use of air conditioners and/or heaters (Alpha=0.641).

For Cheju, *preparedness to change behaviour* was derived from these 10 plus the following five: prepared to repair household goods rather than buying new ones; insulate the home; use the washing machine more efficiently; use public transport more often; drive a smaller car (Alpha=0.849).