

# The Influence of Age, Background and Religion of International Students on Environmental Sustainability in New Zealand

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*Some international tertiary students studying at UUNZ Institute of Business aspire to become New Zealand citizens. Some of them could be the leaders of tomorrow and it is important for a tertiary institution to determine what their perceptions, attitudes and behaviours are towards environmental sustainability. Some similarities and differences of opinion were identified and discussed between the different age groups, background and religions. It was found that the demographic factors affects an individual's thinking patterns to some extent, and the different religions have similar perceptions regarding protection of natural resources, limited resources and pollution caused by various sources. The research is based on the assumption that positive attitudes lead to positive behaviours and aims to establish what people's attitudes towards environmental sustainability are. The results show the development of a positive trend in terms of thinking and the behaviour towards environment conservation. Recommendations for tertiary institutions form the last section before the conclusions.*

## 1. Introduction

In 2002, more than 80,000 international (foreign) students studied in New Zealand. The education sector is the fourth largest export earner for New Zealand (Ministry of Education New Zealand 2011). The country earned about \$1.7 billion with nearly 86% of all foreign fee paying students from Asia and Confucian Heritage Culture (CFC). Projections prepared by the British Council, Universities UK, and IDP Australia, assumed 6% annual growth to 2020 in international tertiary enrolments, in the main English speaking destination countries of the USA, the United Kingdom, Australia, Canada and New Zealand (Brida, Osti, & Faccioli 2011). Du Plessis, Chen and Toh (2012) describe sustainable development as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. The word sustainability has become the buzzword in recent years and is often used interchangeably with concepts such as environmentalism or being 'green'.

Therefore, sustainability is about the relationship between people and our planet; referring to the fact that we are inextricably part of this planet, and that our societies and economies depend upon healthy biological and physical systems. Du Plessis et al (2012) are of the opinion that sustainability refers to the quality of a state or process that allows it to be maintained indefinitely. At present, there are indications that the way we are living is not sustainable.

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International education has the potential for economic growth in New Zealand but it could be to the benefit of the country if this growth is also successfully enhancing sustainability. Projections for international student enrolments to 2025 for the public tertiary education institutions (universities and polytechnics) are 7% from 2013 to 2025 and for annual student growth in 34 schools are 2% to 2025, and 5% for private English language schools (The Economic Impact 2008; Ministry of Education New Zealand 2011). This information validates the study that was done among international tertiary students in 2011 at UUNZ Institute of Business, Auckland. Are the international students prepared to accept the fact that New Zealand has a clean green image? The question could well be asked whether the international students will stay in New Zealand after they have completed their studies and what value will they add towards the clean green image of New Zealand.

The first sustainability study was executed at Unitec New Zealand in March 2007 and repeated in 2010. With permission from the researchers the questionnaire was adopted and revised to its current form to suit UUNZ Institute of Business in Auckland, New Zealand. Although this is the first study of this nature at UUNZ, it is regarded as a longitudinal study. The objective is therefore identifying trends in international student approaches to sustainability issues. The study has revealed recognition by the respondents of the positive and long term impacts of the sustainable development. It was also determined that the demographic factors affect an individual's thinking patterns to a great extent, and the social and cultural impacts are found to be positive. If the international students become New Zealanders they need to take it on them to save the natural resources to prevent irreversibly damage and depletion (University of Canterbury n. d.).

In the next section (section 2) a literature review is followed by the problem statement, (section 3) aim of the study (section 4) and the methodology section (section 5). A discussion follows on the comparative analysis (section 6) of the data collected and correlations identified. The authors' recommendations (section 7) and a summary are before the conclusion (section 8) that is the last section of this paper.

## 2. Literature Review

Global warming is a term which also comes under the umbrella of environmental sustainability or as it is also known as climate change. This is defined as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere" (UNFCCC 1992 as cited in Elliot 2011 p3). He argued that environmental sustainability is an essential prerequisite for social and economic development. In this sense, environmental sustainability represents a set of constraints on the use of renewable and non-renewable resources in the production of goods and services and on pollution and waste assimilation in their consumption.

Johnson (2009) explains that sustainability is to utilize the natural resources wisely and to meet the necessities of our lives, considering the need for the resources for the future generations to survive. Sustainable development was originally addressed by the Brundtland Commission (1987 p.24 as cited in Elliot 2011), and was then defined as a development that meets the needs of the present without compromising the ability of

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future generations to meet their own needs. Starik and Rands (1995 as cited in Elliot 2011) put the emphasis of this statement on maximising the natural resources. On the other hand they proposed ecological sustainability as an alternative that could provide the ability of one or more entities, either individually or collectively, to exist and flourish for lengthy timeframes, in such a manner that the existence and flourishing of other entities is permitted at related levels and in related systems.

The decline of ecology on a global level puts the emphasis on the importance of a clean environment and protection of the natural assets. It suggests that the ever increasing population and the free trade policies result in exploitation of resources and increase effluence stresses (Keys, Thomsen, & Smith 2010). What has changed though, are the focus areas, and the increased complexity of the employees as well as the business environment. With a renewed focus on the importance of sustainable organisations, audacious decision making and effective communication, businesses should be on the right track.

The recent global economic downturn, the uncertainty of the financial future, the war on terrorism, the war for talent, the progress in e-business and e-media and others all add to the tough times that people are experiencing in the every-day environment. Employers have the opportunity to engage employees and get them committed to the organisation so that they can add value in business recovery and sustainability after the recession. Organisations, employers and managers have the opportunity to allow employee input into decisions, share information, and to treat employees with respect that will definitely enhance commitment to sustainability. These organisations strengthen shared perceptions of congruence between employee and organisational values, integrate employees into the life of the organisation, and increase employees' identification with the organisation. This approach is definitely applicable to international students staying in New Zealand and becoming part of the diverse workforce (Meyer & Herscovitch 2001 as cited in Wright & Kehoe 2008).

People in a community get influenced by other people's actions, so when one person or a small group of people change their ways to eco-friendly, others tend to learn by their examples and start following. Research that focuses on the societal consumption perspective is an area least explored in the literature. The social groups and networks that people relate to, could influence their decisions and approach towards environmental problems. People who are sociable and friendly have positive interactions with others and make positive contributions to their neighbourhood making it more affable and organised. Positive community relationships have a major role to play when dealing with the environmental crises.

The onus is not just on organisations or employers but also the global community and a good example is the Kyoto protocol. It was established at international level and adopted in 1997 to control the emission of greenhouse gases, has received sufficient support to become a force. Similar to the European Union (EU) it also has an Emission Trading Scheme (Cirman, Domadenik, Koman & Redek 2009). It is one of the efforts across the world to make people aware and to get them involved in saving our resources for future generations. Its main objective is to control the greenhouse gasses emission in the atmosphere, by limiting the amount of gasses emitted by each country (Roth 2004).

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Lockyer, Du Plessis and Maritz (2007) explain the background to global warming (climate change) and how the Framework Convention on Climate Change (FCCC) was negotiated and adopted by most nations at the 1992 Rio de Janeiro Earth Summit. Under this convention, nations agreed to implement ways to limit greenhouse gases emissions before they reach dangerous levels. Industrialised nations also expressed an intention to stabilise their emissions at 1990 levels by the year 2000. The second FCCC that was held in 1996 at Geneva indicated that few countries would meet this emission reduction target and the less developing nations were exempt from emission reductions despite them accounting for a large and increasing proportion of greenhouse emissions.

The Kyoto Protocol established three market based mechanisms for achieving emission reductions: the first is international emissions trading which allows countries to trade greenhouse gases emissions if lower than their target, to other countries; the second mechanism is the Joint Implementation Projects which allows any country to be credited for emissions reductions achieved by investing in projects located in other countries and the third mechanism is the Clean Development Mechanism that allows a country to be credited for emissions reduction achieved by investing in projects located in developing countries under specific conditions (Lockyer, Du Plessis and Maritz 2007). Countries committed to the Kyoto Protocol are required to reduce their greenhouse gases emissions by 5% below their country specific 1990 level over the period 2008 to 2012 with penalty clauses for non-compliance. By 2011, 191 countries including Russia (signed on 1999), The People's Republic of China (signed on 1998), and India (no record that they signed on but accepted the ratification in 2002) had signed or accepted the Kyoto Protocol. In total the 191 countries are all members of the United Nations Framework Convention on Climate Change (UNFCCC) aimed at combating global warming (Wikipedia 2012).

The climate has become unpredictable with the UK and USA experiencing the coldest winter in a hundred years during their last winter season (2011), and this has drastic effects on people across the world. Population growth increased industrialisation and improper utilisation of resources have negatively impacted the ecosystem which resulted in a disrupted natural cycle of global resources and have destabilised environmental sustainability (Orimoogunje, Adegboyega, Banjo & Funmilayo 2011). The global environment is changing rapidly and more dramatically than ever expected. Peattie and Collins (2009) are of the opinion that sustainable consumption is expected to minimise the environmental damage, through socially equitable consumption patterns as it allows every individual to consume only what their fair share of natural resources is. Industrialised nations and their consumers use more than 80% of the limited natural resources that have led to consumption inequality amongst nations across the globe and support a sustainable consumption (Du Plessis et al 2012).

Education for sustainable development has become the focus of environmental education. Tertiary institutions, organisations and communities are looking up to strong leaders to take charge during these rapid environmental changes to ease out the negative impact it could have on businesses (Nel et al 2012) therefore the leaders of tomorrow (international students), perceive sustainability differently, as confirmed in Table 1 below. Tertiary institutions could assist in the effort to control the increasing atmospheric temperatures by creating awareness and outlining policies regarding the issue at a global level in their programmes they present to students.

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The main objective in this research study is to summarise the key points of environmental sustainability and get feedback from respondents on their views on environmental sustainability. Some of these key points are driven from the literature. Due to limitations to the length of the paper it is not possible to use more and wider literature and to discuss all the questions in the analysis section. As an indication of how we drive these questionnaires we have summarised the key points. Clean green image, saving natural resources global warming, sustainability, and energy-efficient appliances.

### **3. Problem Statement**

The curricula of a tertiary institution could include sustainable development programmes with the objective of changing individual attitudes and approaches towards sustainability and conservation of natural resources. International tertiary students who get permanent residency or citizenship could be some of the future leaders of New Zealand. It is important for a tertiary institution to determine what their perceptions, attitudes and behaviours are towards sustainability.

### **4. Aim of the Study**

The focus of this paper is on a comparative analysis of international tertiary students surveyed in 2011 to understand students' approaches and current trends towards sustainability. This paper discusses any similarities and differences of opinion identified, between the different age groups, nationalities and religions of the respondents. Which factors affect their 'green' behaviour, and how perceptions are formed, with specific consideration to their background or country of origin. The value add to this study comes from the comparisons resulting from the 2011 data to identify trends in student approaches to sustainability issues.

### **5. Methodology**

#### **5.1 Research Design**

The target population were international tertiary students of UUNZ Institute of Business, Auckland, New Zealand. The 115 questionnaires distributed, resulted in 92 usable questionnaires returned and therefore an 80 percent response rate. Sibbel (2009) postulates that higher education institutions can be used to make students aware of sustainability.

A questionnaire was distributed to undergraduate and post graduate students studying business at the institute. The choice of business students is deliberate because the researchers believed they will get a cohort of people with similar age, background and religion. In future some of these students may perhaps become senior managers who could have a deciding standpoint on these issues.

The revelation of the identity of respondents was not required and the respect for confidentiality and preservation of anonymity is present throughout the questionnaire. There is no harm to cultural or social insensitivity or deception in the questionnaire or

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study. There was no conflict of interest and the intellectual and cultural property ownership was respected.

### 5.2 Questionnaire Design

The authors have improved on previous studies by focussing the questionnaire on the core problem that is their perceptions and attitudes towards sustainability. A questionnaire was designed with 52 questions (using a Likert scale from 1 very strongly disagree to 7 very strongly agree ) regarding some important characteristics about the views of people towards environments, culture, self-feelings towards life regarding money and health, human and their interaction with natural resources. Including in this amount were six questions asked about some personal information of the participants in the survey.

### 5.3 Data Collection

The sample size was determined by the international tertiary students present in the Tertiary Institute on a specific day. Questionnaires were distributed in the classes through the lecturers. Students completed the surveys anonymously and returned it to a box in their respective classes without the lecturer being present. Participation of all business students in the study was voluntary and through informed consent. Questionnaires are locked in the primary researcher's cabinet for a period of five (5) years.

## 6. Analysis

The data was entered in Excel and then transferred into SPSS to get some descriptive statistics and also to apply some statistical tests. Results are analysed using the SPSS package. The researchers did some analyses based on the research questionnaire.

For this paper we used six closely related items or where the one could have an influence on the next question, as in the six questions below. Short and easy to understand questions were asked to the respondents and they had to indicate their preferred answer from 1 to 7 where 1 is strongly disagree and 7 is strongly agree. The six questions from the questionnaire (statements) are:

Q 14 - We should have respect for traditions, cultures and ways of life of other nations

Q 15 - I would like to know more about other cultures and customs

Q 17 - I do what I can to conserve natural resources

Q 31 - I am concerned about the amount of clean drinking water available in the world

Q 37 - Destroying nature in one region can cause problems globally

Q 39 - I do not save energy because people will think that I am poor

It is interesting, in Table 1, below, that in the age group under 20 years, 80 percent strongly agree that they respect traditions, cultures and ways of life of other people, but only two thirds (60%) of the same group want to know more about other cultures and customs and they care about what other people think (that they might be poor) that is the reason why they save energy (13%). On the other hand more than two thirds (66%) agree that they care about clean drinking water in the world. Two thirds are concerned about destroying nature in one region would have an effect globally (66%).

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Another important factor is that half of the Russian respondents strongly agree that they have to respect other cultures and customs (50%) and that they are concerned about destroying nature in one region that might have an effect globally (78%). It can be deduced that this high awareness of destroying the nature by other nations could be because Russia has signed the Kyoto Protocol in 2004 already and most Russians are aware of it. In their responses the Indian students (62%) agree that they respect other cultures and customs and only 15% care about people thinking they are poor because they save energy. Similar results were noted for Chinese respondents (see Table 1 below). There were no Muslim participants in this study.

**Table 1: Comparison of age and background**

	Respect traditions, cultures and ways of life	Know more about other cultures and customs	I do what I can to conserve natural resources	Clean drinking water available in the world	Destroying nature in one region can cause problems globally	I don't save energy because people will think I am poor
Question #	Q14	Q15	Q17	Q31	Q37	Q39
Under 20	80%	60%	53%	66%	66%	13%
20-39	76%	73%	66%	66%	54%	10%
Indian	80%	62%	68%	80%	71%	15%
Chinese	47%	42%	70%	74%	76%	12%
Russian	50%	29%	60%	76%	78%	16%
Other	50%	32%	12%	46%	28%	14%

**Table 2: Comparison of age, background and religion**

	Respect traditions, cultures and ways of life	Know more about other cultures and customs	I do what I can to conserve natural resources	Clean drinking water available in the world	Destroying nature in one region can cause problems globally	I don't save energy because people will think I am poor
	Q14	Q15	Q17	Q31	Q37	Q39
Under 20	80%	60%	53%	66%	66%	13%
20-39	76%	73%	66%	66%	66%	10%
Buddhist	100%	55%	77%	77%	66%	11%
Christian	76%	76%	52%	70%	58%	0%
Hindu	90%	90%	70%	70%	70%	30%
Muslim	0	0	0	0	0	0
Non-religious	100%	67%	75%	50%	51%	4%
Chinese	47%	42%	70%	74%	76%	12%
Indian	80%	62%	68%	80%	71%	15%
Russian	50%	29%	60%	76%	78%	16%
Other	50%	32%	12%	46%	28%	14%

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In the age group 20-39 years old (Table 2 above) a large percentage (76%) strongly agrees that they respect traditions and other cultures but it is interesting to note that also 100% who respect traditions etc are Buddhists and 76% are Christians. In contrast to this only 10% in the same age group (20-39) don't save energy because people will think they are poor (Q39) of which 11% Buddhists and 0% are Christians with 16% from Russia, 15% Indians and 12 % Chinese. A lower percentage under 20's than 20-39 years old respondents want to know more about other cultures and customs of whom 76% are Christians, 90% Hindus and 55% Buddhists. In the same category (Q15) there are 62% Indians, 42% Chinese and 29 Russians. Another interesting fact is that the 20-39 age group (Q17) is more convinced to do what they can to reserve natural resources for the future and of the same category the non-religious group is the highest with 75%. It can be deduced that it does not matter what age group or origin and even religion international students belong to, they know that they are responsible for saving natural resource and that it is their responsibility to know more about other cultures and norms in New Zealand. Q37 is confirming this assumption as all the percentages are high in these categories.

In Figure 1, below, it is evident that the Buddhist group have no problems in respecting other cultures and traditions and most probably the way Kiwis are protecting their clean green image is very acceptable to them and they will support this. Christians are almost at 80% with Hindus above 80% and the researchers don't foresee a problem with them either. Maybe the non-religious students don't feel that strong about other cultures and traditions especially religious traditions.

**Figure 1: Q14 - We should have respect for traditions, cultures and ways of life of other nations**

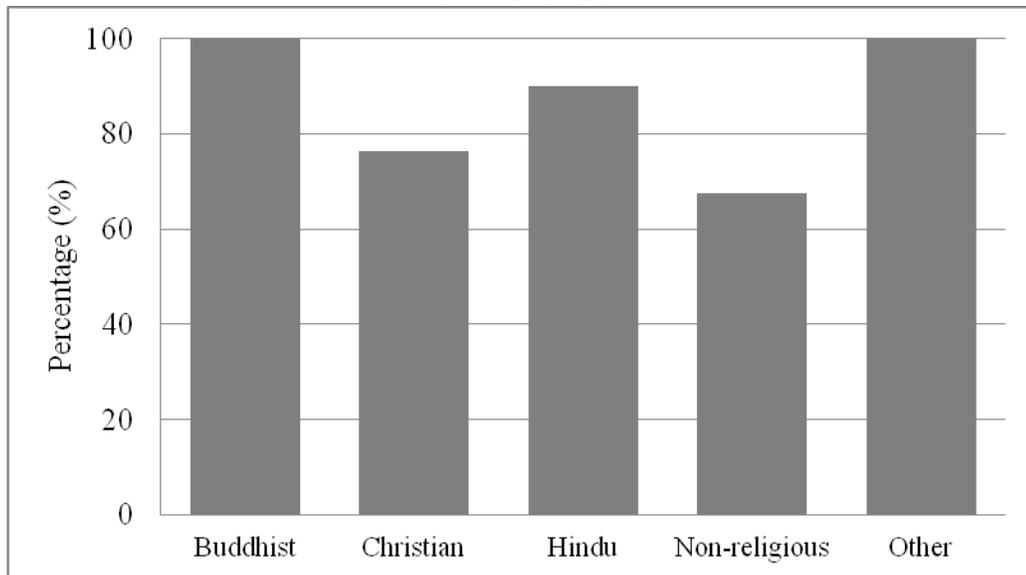
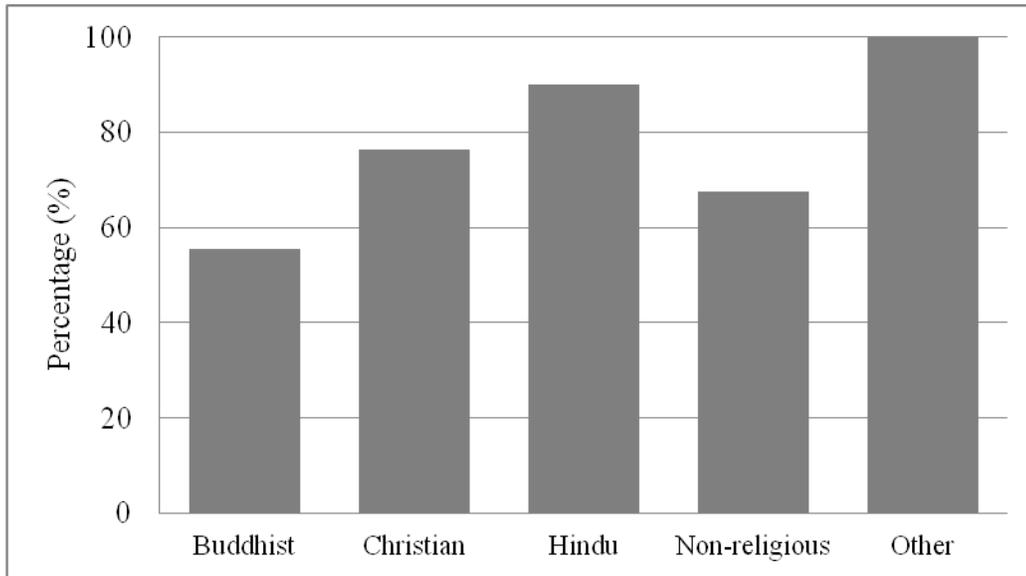


Figure 2, below, depicts that Hindus and "other" religious groups are more interested in learning more about other cultures and customs. Again the Christian group is almost at 80% and very consistent with their responses. What is interesting in this category is that Buddhists are not even on 60% to know more about cultures and customs in contrast to the previous question (Q14) where 100% responded that they respect other cultures.

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The question could well be asked how they could respect other cultures if not all of them want to know more about other cultures.

**Figure 2: Q15 - I would like to know more about other cultures and customs**



The figure below (Figure 3) depicts how different religions responded to question 17. It is alarming to see that non-religious respondents have a higher responsibility to conserve natural resource for the future than Christians. Buddhists are once again in the lead with almost 80%

**Figure 3: Q17 - I do what I can to conserve natural resources**

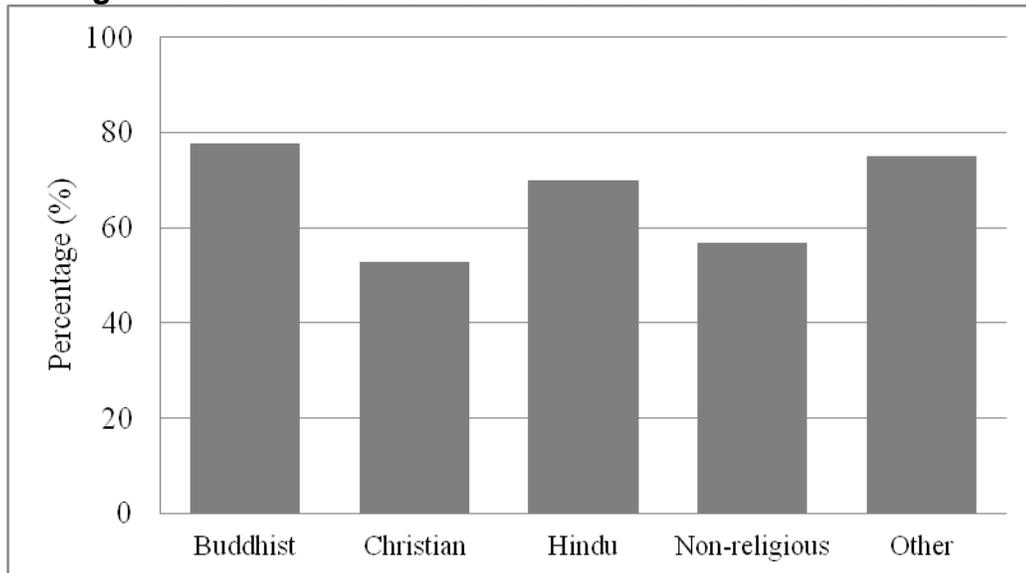
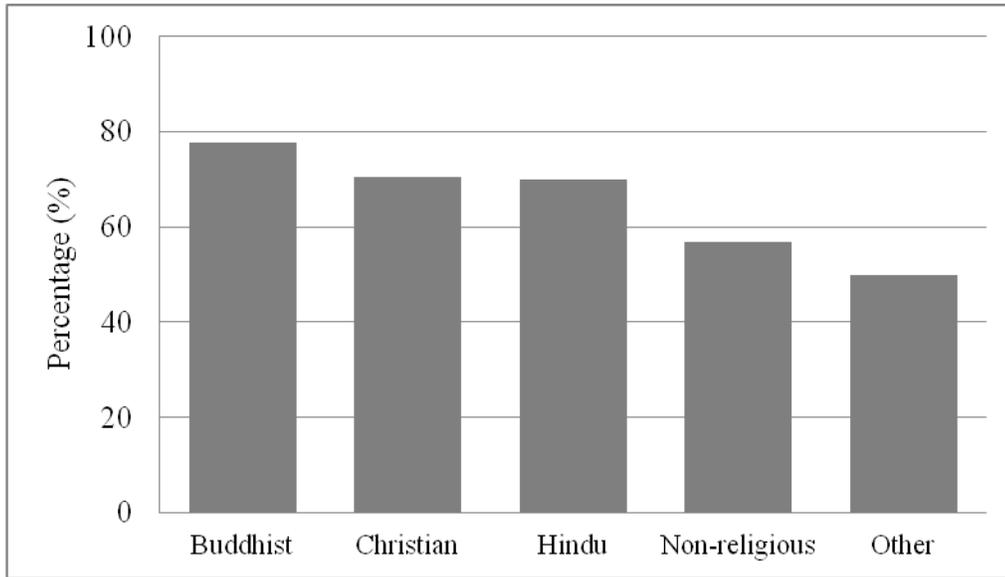
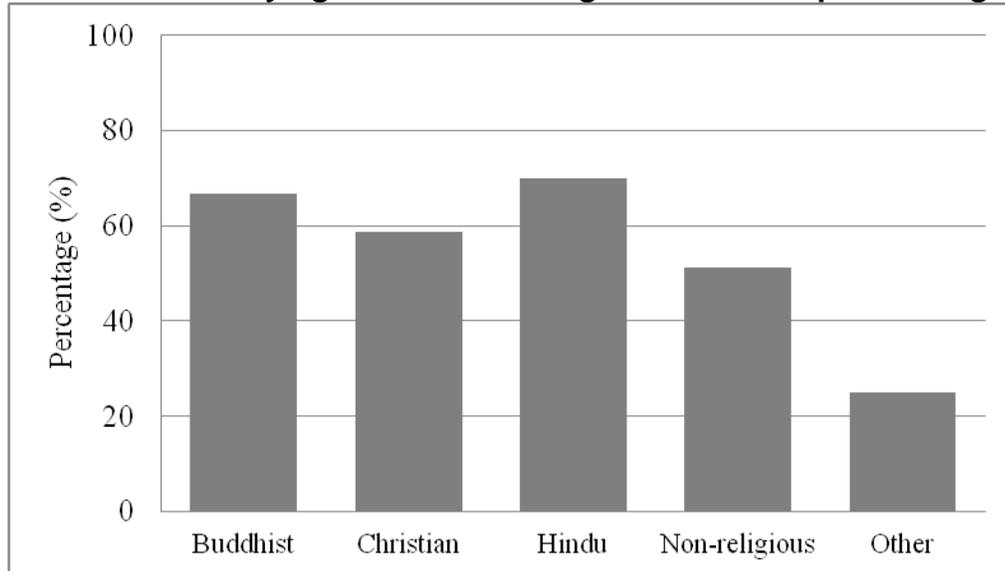


Figure 4: Q31 - I am concerned about the amount of clean drinking water available in the world



In Figure 4, above, the non-religious respondents are not so interested in the amount of clean drinking water and it is deduced that they are from a first world country where clean drinking water is not a problem at all. The “other” respondents are on about 45% and they are also not concerned about it. It is evident from this figure that Buddhists that are from a country such as India are experiencing a problem with clean drinking water and they are from a developing country. They are highly concerned with almost 80%.

Figure 5: Q37 - Destroying nature in one region can cause problems globally



Q37 (above) is addressing the “destroying nature in one region can cause problems globally” in the figure and the non-religious group of respondents are just over 40% who are concerned about this matter. Christians are on just about 60% with Hindus at the top of the log with about 65%. The question could well be asked if the Hindus are coming

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from a region in India where they experience destroying of natural sources and the nature causing them to worry about the rest of the world?

**Figure 6: Q39 - I do not save energy because people will think that I am poor**

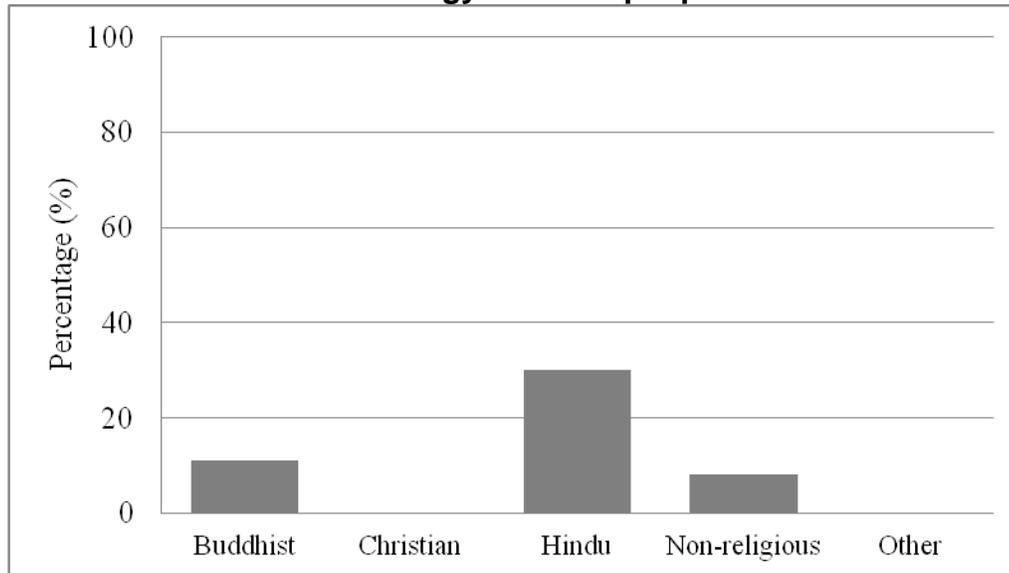


Figure 6, above, has very interesting results as it demonstrates that Christians are not in the least concerned that people will think they are poor. It could be deduced that they are more aware of their saving of energy which will result in saving money and they see it as normal, where in a country such as India the Hindus and Buddhists are not so used or familiar with saving energy because it could be a status symbol if they have electricity and it shows their wellness.

It can therefore be deduced that in 2011 people from different nationalities and ages, whom are in New Zealand to study only, were linking their attitude to save energy and their concern about clean drinking water to enhance their influence on the future environment and the clean green image of New Zealand (Emanuel & Adams 2011).

There were no Muslim respondents in this research project. Saving the environment for the future is regarded important for all religious groups including the non-religious with the exception of the Buddhists whose percentage is significantly lower for certain categories and higher for others where Christians are then lower. Their choices that people could exert on others for example the government or colleagues to influence them to save resources for the future are the strongest for the Christian and Hindu respondents. The Buddhist and non-religious respondents follow closely.

### 6.1 Trends in International Tertiary Students' Behaviour

The current international students studying in New Zealand could be some of the leaders in the future and they will certainly need to lead from the front also on the sustainability of resources. Ryan, Tilbury, Corcoran, Abe and Nomura (2010) refer to higher education students becoming the managers and leaders of the future; therefore it is vital to "educate" them on sustainability, more so for international students. As the environment

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has become more uncertain, engaged employees want more than to know about other cultures and customs. Those organisations that have been in sheer survival mode will have a tougher time in sustainability and reducing carbon monoxide emissions and therefore restoring / maintaining trust in their organisations that they are committed to saving resources for future generations and how they will comply with it in their strategic direction.

Considerable personal strength is required in the future to conserve our resources, and the notion that we now require audacious leaders to take advantage of opportunities does seem to become a reality. The positive trend towards sustainability is evident in this research project. The respondents are very concerned certain issues such as clean drinking water and knowledge about other cultures and traditions. Another positive trend is that the majority of respondents are aware and even concerned about the choices that they make now and its influence it will have on the future..

### **7. Recommendations**

Tertiary institutions should engage employees to develop curricula and to implement strategies in their institutions to develop future leaders' capabilities, to develop a greater sense for sustainability among international students and to add value through their institutions by developing the trend that these students are showing to be more positive towards sustainability. There needs to be a commitment from top management, governments and leaders to develop both human capital and social capital, and this will lead to greater synergy across the business, and more sustainable outcomes saving our resources for future generations.

### **8. Conclusions**

Education for sustainable development has become the focus of environmental education. The research revealed that religion does play a role in perceptions of international tertiary students in regards to choices that they make now for the future existence of our resources. Interesting factors came to the fore in this research project. It was found that we must protect our natural resources, all religions, and even the non-religious respondents agree that we are responsible for the future of our resources such as clean drinking water.

It is evident that all the respondents strongly associate the concept sustainability with their environment and it emphasises the need to link the sustainable development with the economic, social, and cultural factors for the students to understand the complications and the challenges about the topic.

Employers, organisations and managers have the opportunity to allow employee input into decisions, share information, and to treat employees with respect that will definitely enhance commitment to sustainability.

Furthermore, the respondents reported that they want to know more about other cultures and traditions. Trends in international student approaches to sustainability issues were

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identified as they are from three different countries. This research determined and exemplified the current trends and attitudes of international tertiary students within UUNZ Institute of Business, Auckland, New Zealand across all courses. The study puts together some recommendations that could be used to develop and formulate future strategies (in curricula) to encourage sustainable consumptions.

The study puts together some recommendations that could be used to develop and formulate future strategies, in curricula.

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