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Developing a Sustainable Campus through Community Engagement: An Empirical Study

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Abstract Sustainability is increasingly a basic tenet within the organisational philosophy of many universities. While those universities that have a sustainability strategy have largely focused on operational improvements, the engagement of staff and students is equally important for creating a sustainable campus. This paper develops a 6-P community engagement framework for promoting eco-centric practices within university campuses. The objective of the study is to apply the framework to a university community in order to establish the validity of this framework. To this end, interviews with staff and students at Bond University were undertaken. The interviews reveal that the 6-P framework is highly applicable to the Bond university community. Interviewees suggest that all 6-P factors (psychological, physical, personal, public perception, price and policies) are relevant and have a positive influence towards an eco-centric behaviour. The framework is useful as a template for other universities in developing a community engagement strategy to fit into the vision of a sustainable campus.

Keywords University, Community Engagement, Sustainable Campus

1. Introduction

There has been a growing interest in sustainable development across government departments, business groups and the community sector reflecting a major shift in thinking about the importance of sustainability in our day-to-day lives. In line with this trend, many universities around the world have taken initiatives to make their campus communities more sustainable. Velazquez[1 p155] defines a sustainable university campus as “a higher education institution ... that addresses, involves and promotes ... the minimisation of environmental, economics, societal and health negative effects in the use of their resources[in] its main functions of teaching, research, outreach and partnership, and stewardship ... to[help] society make the transition to sustainable lifestyles.”

Many university leaders have expressed their commitment to sustainability for their university campuses by signing the Talloires Declaration developed by the Association of University Leaders for a Sustainable Future (ULSF). The Talloires Declaration represents a voluntary environmental agreement that institutions of higher learning will be world leaders in developing, creating, supporting and maintaining sustainability by incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities. To date, this declaration

has been signed by over 440 university presidents and chancellors in over 50 countries.[2] In Australia, 20 universities have signed the Talloires Declaration.

However, many universities have traditionally been improving their sustainability through operational measures. The Sustainable Campus Group is a membership organisation representing a number of tertiary education institutions in Australia. Its annual report revealed that its member institutions had primarily focused on operational improvement for sustainability. Meanwhile, there was comparatively lower attention to engagement with staff and students through behavioural change programs.[3] The community of universities also plays an important role to effect lasting changes towards greater sustainable practices. Sarkissian et al. note in their book, *Kitchen Table Sustainability*, that “communities are the heart and hands” of all sustainability movement, regardless of its context. In this regard, mobilising and motivating staff and students to take practical steps towards sustainability is also an important aspect of creating green campuses.[4 p6]

Engaging members within university communities may prove challenging because it is a diverse community comprising different age and interest groups. Academic staff and university staff can share different attitudes toward the incorporation of sustainability within their university, with administrative staff showing higher willingness to change their habits than academic staff.[5] The student community, on the other hand, comprises undergraduate and postgraduate students who vastly vary demographically and culturally. As a microcosmic society, it is an excellent test bed for the development of a community engagement

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framework.

To this end, the purpose of this paper is to present and test a framework for engaging staff and students in developing a sustainable university campus. Interviews with staff and students at Bond University are conducted to investigate the extent to which the factors identified in the framework affect their decisions relating sustainability within the university campus. The paper first describes the framework and the factors encapsulated within the framework. The research methodology is then described. Following this, the paper cross-maps the interview findings to the factors identified in the framework in order to evaluate its applicability to university staff and students.

2. 6-P Framework for Sustainable Campus Community Engagement

The topic of attitude and behavioural change is a complex subject which has been widely researched in many disciplines, including psychology, sociology, environmental studies and planning. The knowledge in this topic, however, has been accumulating in silos. This paper draws together the findings from these disciplines to develop 6-P framework as a tool for encouraging eco-centric behaviour among community members.

Various behavioural modification models have been developed in the literature: for example, the norm-activation model[6]; the reasoned action paradigm[7]; the awareness - information - decision - action model[8]; and the value/belief - attitude - immediate sequence - behaviour school[9]. These models share a common conceptual foundation that environmentally sensitive behaviour begins when an individual has an understanding of environmental issues, particularly the environmental consequences of their actions. However, studies have revealed that such awareness alone is insufficient to modify an individual's behaviour.[10]

Motivation is a positive force which pushes an individual towards certain behaviour whereas barriers are negative forces which can withhold one from engaging in a specific practice. Barriers can be structural (external to the individual) or non-structural (internal to the individual).[10] Nurturing eco-centric behaviour can become complex when barriers are structural or when a combination of both structural and non-structural barriers exists.

Many green products and services have failed due to their overemphasis on improving environmental quality at the expense of achieving customer satisfaction (a situation also known as the 'green marketing myopia').[11] This point highlights that effecting behavioural modification requires knowledge coupled with a consumer-need approach. Successful green products share at least five desirable benefits for the consumer, including: 1) health and safety; 2) performance; 3) efficiency and cost effectiveness; 4) symbolism and status; and 5) convenience.[11]

Promotion of some eco-centric practices (such as walking and cycling as an alternative to driving) also requires

adequate availability of facilities.[12] For example, to successfully promote walking, there need to be sufficient pavements, road crossings and/or public spaces whereas provision of bicycle paths, relatively wide kerb lanes and end of trip facilities is necessary to encourage cycling. Additionally, intangible motivators in the forms of leadership, funding and timing are also fundamental to fostering behavioural changes.[13-14] Synthesising these finding above, the 6-P framework for community engagement identifies the factors (both intrinsic and extrinsic) which can encourage or deter sustainable practices within a community. These factors are:

1. Psychological (awareness of environmental issues, sustainability, and environmental consequences of actions)
2. Physical (availability of green facilities, which can include sustainable building features and facilities for facilitating green practices such as recycling bins)
3. Personal (personal benefits for choosing green, such as convenience, time-saving and health improvement)
4. Public perception (social norm and peer pressure within the community)
5. Price (relative cost of choosing green products or services in comparison to similar non-green products) and
6. Policies (senior management support and policies for sustainability within the community)

As barriers and motivators can be community specific[15], the 6-P framework is intentionally kept generic and does not provide any causal links among the six factors identified. The framework is holistic in the sense that it encapsulates different dimensions surrounding an individual's likelihood to engage in a green practice. Given that most universities focus on operational strategies in building a sustainable campus, this framework addresses the need to complement the current approach with a community engagement strategy to promoting sustainability among the campus community. The 6-P framework can potentially be applied different community settings to promote eco-centric behaviours among their community members.

3. Methodology

To test the applicability of the 6-P framework, this research applies it to a university community. The research is focused on university communities for the following reasons:

1. As generators of new knowledge, universities can be expected to be innovative in their approach to sustainability and provide lessons from which other communities can learn, and
2. The demographic variety within the university community is high, which provides an effective test bed the framework to determine its applicability to different demographic groups.

For this purpose, in-depth interviews were conducted with 24 staff and students at Bond University. Although a greater number of participants could be reached through a survey,

the research used face-to-face interviews as the primary data collection method because critical insights from interviews were deemed valuable for shedding light on the efficiency/inefficiency of the framework.

This would allow the opportunity to refine and enhance the content validity of the framework if necessary. Future studies can then benefit from a more robust framework that can be further tested using the survey technique. The breakdown of the interviewees is as follows: seven undergraduate students; five postgraduate students; five academic staff; six administrative staff; and one senior management staff. The interviewees were selected randomly from across the different faculties and departments at Bond to ensure fair representation. The interviews were conducted between March and May 2013. Interviewees were asked six questions, which are listed in Table 1.

Table 1. Interview Questions

Question	6-P Factor
How important is knowledge of the environment (e.g., pollution, forest degradation and ozone layer depletion) in encouraging you to make more eco-centric choices?	Psychological
How important are availability of facilities and physical infrastructure (e.g., green building features, reliability of public transport, and recycling bins) in encouraging you to make more eco-centric choices?	Physical
How important are personal benefits (e.g., convenience, time-saving and health promotion) as a motivator in making more eco-centric choices?	Personal
How important is peer pressure or social norm in influencing your choice of more eco-centric practices?	Public Perception
How important is price of products or services when considering making a more eco-centric choice?	Price
How important is senior management support for sustainability within the university campus in encouraging you to make more eco-centric choices while you are on campus?	Policies

Each of the six questions relates to the individual 6-P factor. The questions are designed to lead to open-ended discussion about how each 6-P factor can encourage or discourage eco-centric behaviour of the interviewees, particularly when they are on the university campus. Additionally, each interviewee was asked to provide examples of their personal experience in their responses to each question. These examples were important as they could reinforce and support the interviewees' answers to each question. On average, the interviews lasted for half-an-hour each. Interviews were recorded and transcribed. Subsequently, for each question, common themes that emerged from the discussion were identified. These common themes were then identified as 'sub-factors' of each 6-P factor.

4. Overview of Sustainability at Bond

Bond University is a private Australian university established on the Gold Coast in 1989. With 3966 students and 1259 staff in June 2012, the university is set on a 50-hectare campus in Robina. The university has recognised the importance of sustainability and a Sustainability Committee was established in 2008 to develop sustainability policies. To date, a number of green initiatives have been implemented throughout the campus. The majority these programs, however, have focused largely on operational improvement (such as facility upgrades). Some community-driven initiatives have also been launched by staff and students at the university. The Mirvac School of Sustainable Development building was established in 2008 and is the first 6 green-star educational building in Australia.

5. Interview Findings

In general, the interviews found that across all respondent groups, there was consensus on the relevance of the 6P factors in encouraging eco-centric practices. Minor variation in terms of the degree of importance exists however, between different groups of respondents. Nevertheless, all staff and students agreed that all 6-P factors influence their decision to become more eco-centric. The interview results are discussed in detail below.

In the discussion of each 6-P factor, sub-factors of the 6-P factor are identified based on common themes uncovered in the interviews. Each sub-factor is described in terms of how it can nurture eco-centric behaviour among staff and students. A table with quotations from the interviews is provided in the Appendix to illustrate how each 6-P factor had encouraged the interviewees to be involved in more eco-centric practices.

5.1. Psychological Factor

All respondents agreed that the psychological factor is a major factor in encouraging any person to become eco-centric. Out of all 6-P factors, the psychological factor received the greatest support as a factor for encouraging sustainable practices among the interviewees. Four sub-factors within the psychological factor are: 1) sustainability education, 2) reminders, 3) information dissemination, and 4) sustainability website.

5.1.1. Sustainability Education

The respondents mentioned that people need to first be aware of sustainability issues in order to change their habit and take green actions. To create such awareness, sustainability education at the university should be more engaging. This can be achieved by illustrating to staff and students that sustainability is a day-to-day issue which can be addressed through simple actions in their daily life. Informing the community of the consequences of their common, unsustainable actions (such as not disposing of

their waste properly) can also encourage staff and students to change their behaviour.

Some interviewees have been formally educated in sustainability in their high schools and/or universities. These interviewees revealed that their education was a major catalyst for nurturing their eco-centric habit, which is now their default behaviour. Green events and awareness campaigns can also educate staff and students about sustainability and create greater green consciousness.

5.1.2. Information Dissemination

Regular dissemination of sustainability information is necessary for creating and sustaining the university community's interest in sustainability. Information that should be disseminated includes reminders of green actions and latest news on the university's green initiatives and events.

Many respondents stated that reminders of green actions are a very important factor for nurturing and sustaining eco-centric behaviour. For many staff and students, especially those whose eco-centric actions are not their default behaviour, such reminders are necessary in ensuring they are involved in green practices consistently.

By being informed of the university's green initiatives and events, according to the interviewees, staff and students can feel a sense of pride in the university. This in return can motivate them to help contribute to the university's green efforts by becoming more eco-centric themselves.

Tangible signage, posters and email communication were cited by interviewees as potential channels for distributing sustainability information. All information disseminated to every community should be visual and simple because staff and students often do not have sufficient time or interest to read and process lengthy information. Moreover, information should not be disseminated too frequently. As an example, email communication could occur fortnightly rather on a daily basis.

5.1.3. Sustainability Website

The respondents agreed that a sustainability website could play a vital role in disseminating information and creating greater awareness through sustainability education. The website should keep all community members up to date with the latest green events in which they can participate in. Additionally, the website could be an effective platform for providing reminders. Thus, a sustainability website, as a communication platform, can address all sub-factors of the psychological factor discussed above.

5.2. Physical Factor

The physical factor is associated with availability of facilities and physical infrastructure to encourage eco-centric practices within the campus. The interviewed staff and students agreed that the physical factor can be a very important motivator for them to become more eco-centric. Three sub-factors in the physical factor identified from the

interviews are: 1) green building design and equipment, 2) availability and user-friendliness of green facilities, and 3) reliability of public transport.

5.2.1. Green Building Design and Equipment

Green design features and equipment were cited by the respondents as a motivator for them to be eco-centric. These facilities can underscore the university's sustainability vision and objectives and, similarly to green initiatives the university is undertaking, can create a sense of pride among staff and students. The sense of pride can act as a major motivator for community members to change their behaviour. To ensure this outcome is attained, staff and students should be well-informed of these green facilities.

5.2.2. Availability and User-friendliness of Green Facilities

Availability and user-friendliness of green facilities, which can facilitate eco-centric practices among staff and students (such as recycling bins), is a major motivator for them to be involved in green practices. User-friendliness includes two components. The first element is the ease of locating and distinguishing green facilities. Green facilities should be located strategically in areas which is highly visible and commonly accessed by most staff and students (such as the library). Maps can also assist university communities in locating green facilities. Visual appearance was cited as a factor which allows the facilities to be easily distinguished from other similar facilities. For example, the colour of recycling bins should be in contrast to the colour of general waste bins.

The second element of green facilities' user-friendliness is the legibility of using them. Simple, visual instructions could improve such legibility. Availability and user-friendliness of green facilities is strongly associated with the personal factor of the 6-P framework as it can greatly increase convenience in becoming eco-centric.

5.2.3. Reliability of Public Transport

The respondents all agreed that reliability and efficiency of public transport service can encourage them to travel to and from the campus. Public transport services should be regular and on-time according to their schedule. Many respondents have been forced to drive or take taxis due to unreliability of public transport to and from the university campus.

5.3. Personal Factor

The personal factor is associated with personal benefits which can be attained from making sustainable choices. The respondents agreed that the personal factor can incentivise them to become greener. However, for respondents whose eco-centric behaviour is already their default practices, their perception of the personal factor varies from the other respondents.

For these staff and students, making green choices provides them with a psychological benefit as these choices

will make them feel satisfied from “doing the right thing.” Personal benefits in the forms of convenience and time - saving have a very limited role in steering these respondents into eco-centric behaviour. The discussion below is focused on the other respondents who are not as eco-centric as these respondents. Three sub-factors in the personal factor are: 1) rewards and recognition, 2) convenience, and 3) time-saving.

5.3.1. Rewards and Recognition

The respondents cited the importance of rewards and recognition for making green choices. These incentives should not only be short-term (for example, free meals at the university café), but also be long-term in order to secure long-term commitment from staff and students. Long-term rewards may include formal certificates of recognition for staff's or students' contribution to sustainability at Bond. This form of recognition may also state the total number of hours the community members have accumulated in their contribution.

5.3.2. Convenience

Convenience is a major motivator for the respondents when deciding to make green choices. As discussed previously, convenience of executing green practices could be achieved with adequate, user-friendly green facilities on campus. Furthermore, most respondents noted that there is a common fallacy among staff and students that becoming green is always inconvenient. However, many eco-centric actions, such as switching off computers and lights, are simple to carry out. To rectify this misconception, reminders should be regularly disseminated.

5.3.3. Time-saving

The respondents agreed that if becoming greener can save time, they will be motivated to be greener. Students often have more than one class each day they are on campus. In addition, the need for them to prepare for examinations and assignments on an ongoing basis throughout a semester often puts them under time constraints. On the other hand, staff often have high workload, which also puts them under constant time pressure. If the closest recycling bin is located ten minutes away, the respondents admitted that they will be discouraged from recycling, which will not save their time.

5.4. Public Perception Factor

The public perception factor encapsulates peer pressure or expectations, which define practices or actions which are socially acceptable or appropriate. The respondents agreed that public perception is a relevant factor for nurturing eco-centric behaviour among them. Green organisation culture and iconic green buildings were the key influences of green behaviour through the public perception factor.

5.4.1. Green Organisational Culture

Many of the interviewed staff commented on the importance of organisational culture in nurturing eco-centric

behaviour among existing and future staff and students. Green organisational culture can also create a conducive environment for community-led initiatives, in which these initiatives are well-received and encouraged among all community members. The respondents mentioned that social norms often influence their actions, nothing that “no one wants to be the black sheep.”

5.4.2. Iconic Green Building

The Mirvac School of Sustainable Development building is Australia's first 6-green star educational facility. It has won many local and international awards. Apart from environmental benefits, this facility is also an educational tool in driving home the message of sustainable development to students and visitors alike. It allows high school students and visitors to experience first-hand the sustainable features of the building and how it can advance the goal of sustainability. The public perception generated from these visits can create the pressure to ‘live up to expectations’ among its occupants. To this end, greater eco-centricity is achieved albeit through an indirect way. Many of the interviewed staff and students who utilise the building facility mentioned that their green behaviour has been motivated by the green building.

5.5. Price Factor

The price factor is associated with the relative cost of making eco-centric choices (e.g., example, buying recycled printing paper or standard printing paper). Currently, most green products are relatively more expensive than similar, non-green products. All respondents agreed that price plays an important role for all their purchase decisions. Many staff mentioned that public transport on the Gold Coast is very expensive, which has discouraged them from using the service. Two sub-factors in the price factor are: 1) varying tolerance of price difference, and 2) features and promotion of green products.

5.5.1. Varying Tolerance of Price

Varying tolerance of the relative price difference between green and non-green choices among different groups of respondents was observed. Respondents, whose behaviour is already eco-centric, showed the highest tolerance to the price factor. Many of these respondents, which comprise both staff and students already have been personally paying higher costs for green products both at home (such as green energy) and at the university (such as green stationery). These respondents are prepared to pay higher for green products or services as long as the price difference is still in an acceptable level for them.

Staff in general showed moderate tolerance to price differences between green and non-green choices, given their stable streams of income. Many staff, however, have long-term financial obligations (such as mortgage payments), which limit their available budget for spending on green products or services which are more expensive than non-green products. The level of price differences acceptable

to these staff is approximately 20 to 30 per cent. On the contrary, students showed the lowest tolerance to price differences as they mostly do not have steady income.

5.5.2. Features and Promotion of Green Products

In addition to price, many respondents noted that features of green products or services also affect their decisions. For the respondents to readily pay for higher prices of green products, the products' features should be relatively more appealing than features of non-green products. Attractive features may include better design, longer battery life, and long-term cost savings. These appealing features should be well promoted to staff and students in order to encourage them to purchase these green products.

Availability and promotion of green products or services is also important. Many of the respondents showed interest in buying green products, but did not know where they can find such products. To alleviate this issue, green products should be made available for purchase on campus, and staff and students should be well-informed of these products when they are introduced. Visibility of these green products in store is also an important consideration for the university. If the university bookstore provided recycled stationery in a strategic location (such as at the front of the store or the cashier), a respondent noted that he would be prepared to purchase the product despite its potentially higher price tag.

5.6. Policies Factor

The policies factor encapsulates senior management support for encouraging eco-centric behaviour within the university community. Senior management may promote sustainability through strategic policies, and approval of funding and endorsement for green projects. Thus, senior management can represent a significant catalyst for sustainability on university campuses. The respondents agreed that the policies factor is a very relevant factor for nurturing green behaviour among them. Three major sub-factors in the policies factor are: 1) line of communication between management and community, 2) management leading by examples, 3) prompt management support for community-led initiatives, and 4) green organisational culture.

5.6.1. Line of Communication between Management and Community

An effective, constant line of communication between senior management and the university community was cited by many respondents as an important factor. Senior management should inform all staff and students of the university's sustainability vision and initiatives. By doing so,

staff and students can develop and maintain their interest in sustainability, which can encourage them to develop eco-centric behaviour.

5.6.2. Management Leading by Examples

Senior management should "lead by example" in sustainability in order to influence the university community. Demonstration green projects should be launched throughout the campus, and these projects should be highly visible to all staff and students. Information on these projects should also be communicated effectively to all community members through a number of communication platforms.

5.6.3. Prompt Management Support for Community-led Initiatives

Management-driven initiatives are imperative in creating sustainable campuses and nurturing eco-centric behaviour among staff and students. However, the respondents mentioned that community-led initiatives are also an important aspect of creating a sustainable campus. Many respondents noted that senior management should initially instigate or "kick-start" sustainability on campus by establishing a sustainability vision and launching green programs. This early phase of sustainability should keep the community informed of and involved in all initiatives in order to create and sustain interest of staff and students in sustainability. Management should then encourage and support community-driven initiatives and let community members take ownership of their green initiatives. There should be no penalty on staff if their green initiatives are not ultimately successful. Support for community-led initiatives can include both funding and human resources.

Figure 1 summarises the 6-P framework and its sub-factors in a diagrammatic format.

6. Conclusions

Sustainability is today no longer an optional 'extra' for major corporations. Likewise, universities are expected to be at the forefront of knowledge creation and development and this includes the area of sustainability. As a microcosm of society, it is an ideal test-bed for developing and validating theories and principles relating to sustainable development. This paper has presented a 6-P framework of community engagement for promoting sustainability in university campuses. Whilst strong efforts in sustainability have been found amongst Australian universities, these are focused primarily on operational improvement. However, engagement of university staff and students is also an important aspect of creating a sustainable campus.



Figure 1. 6-P framework for sustainable campus community engagement

The 6-P framework encapsulates a set of principles that can encourage eco-centric behaviour among members of a community. The framework comprises six factors, which are: psychological; physical; personal; public perception; price; and policies. The 6-P framework's applicability to university communities has been tested through interviews with staff and students at Bond University. The interviews aimed to determine whether each 6-P factor can encourage green behaviour among community members of the university, particularly when they are on campus. The interview findings illustrate that all 6-P factors, most importantly the psychological factor, can nurture eco-centric practices within the campus. Thus, the 6-P framework can potentially guide university leaders in their engagement with staff and students as part of their sustainability initiatives. By adequately addressing these factors in their community engagement strategies, universities can mobilise and motivate their staff and students to take practical steps towards more sustainable campuses.

The application of the 6-P framework is not limited to only university communities. However, as community members

in different community or organisational settings may have unique barriers and motivations surrounding their sustainable practices, future studies can test the 6-P framework's applicability in other communities. It is acknowledged that the small sample size used to validate the framework in this paper places limit on its generalisability. Future studies can develop scale items for each of the factor and test the framework on schools and corporations using larger sample size.

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Appendix

Table 2 below lists quotations of interviewees' responses to each question. These quotations represent samples picked from the interviews. The quotations illustrate that each 6-P

factor can directly encourage interviewees to become more eco-centric, particularly when they are on campus.

Table 2. Quotations of Interviewees' Response

<p style="text-align: center;">1) Psychological Factor</p> <p>How important is knowledge of the environment (e.g., pollution, forest degradation and ozone layer depletion) in encouraging you to make more eco-centric choices?</p> <ul style="list-style-type: none"> • “What does it mean to be more sustainable? We should be informed of how we can be more sustainable in our daily life.” • “Everyone should be aware of environmental issues[to take actions]. Reminders through signage are important. People may sometimes forget to take green actions or green practices may not be part of their habit.” • “You have to be aware of the[environmental] crises and problems before you accept and take ownership[of green initiatives] and change your behaviour.” • “Generally when you inform people of something, this can become a motivating factor for them[to change their behaviour]. For example, I have been a vegetarian for a long time after learning of the environmental impact generated from animal production.” • “Evidence of information is important, particularly for academic staff. Visual and statistical figures can be used[as evidence].” • “It is important to educate people on environmental issues. A lot of people are not aware of these issues and do not know how to get this information.” 	<p style="text-align: center;">4) Public Perception Factor</p> <p>How important is peer pressure or social norm in influencing your choice of more eco-centric practices?</p> <ul style="list-style-type: none"> • “Social norm[of recycling] will at first motivate me to recycle more, and then encourage such a practice to become normal behaviour for me and everyone else.” • “No one will[be involved in green practices] if it's out of the social norm.” • “My sister and I did not dispose of our waste properly when we were at my uncle's apartment. He later told us that if we did not recycle waste appropriately, we would be fined and bad-mouthed by other neighbours. I now recycle frequently because of this peer pressure back in my hometown.” • “My parents are and everyone else in my neighbourhood are very green. From this social norm, I became aware that reducing, reusing and recycling waste is the right thing to do.” • “In my country, recycling is a standard practice that every person is involved in. This social norm made me more conscious of recycling. This consciousness has been motivating me to recycle my waste.”
<p style="text-align: center;">2) Physical Factor</p> <p>How important are availability of facilities and physical infrastructure (e.g., green building features, reliability of public transport, and recycling bins) in encouraging you to make more eco-centric choices?</p> <ul style="list-style-type: none"> • “Green facilities[for facilitating green practices such as recycling bins] are absolutely imperative in encouraging people to take on sustainability initiatives.” • “My friend travels from Brisbane to the campus by public transport, which takes one and a half hours. This takes too long ... That is why people often drive their car[to travel from and to Brisbane].” • “If I hold a can now, I will recycle it if there is a recycling bin nearby. But if there is no recycling bin nearby, I will just throw it away in the nearest general waste bin I can find.” • “I am often in a rush when I am on campus. I do not have the time to walk to a recycling bin which is far away to recycle my drink cans.” • “If the buses were a lot more regular and consistent, then I personally will use the bus more often.” 	<p style="text-align: center;">5) Price Factor</p> <p>How important is price of products or services when considering making a more eco-centric choice?</p> <ul style="list-style-type: none"> • “Price is obviously an obstacle for many people[when purchasing green products].” • “Price is a big factor for me as a student when buying a green or non-green product. I do not have high spending power.” • “I am prepared to pay extra money for green products, but only at a certain price level which is not too high for me.” • “If it is much more expensive to be green, I find it easier to not be green. When you have a lot of expenses, you have to be careful[with your spending].” • “Families and people who are struggling on a mortgage might not be inclined to[buy green products which are more expensive than non-green products].”
<p style="text-align: center;">3) Personal Factor</p> <p>How important are personal benefits (e.g., convenience, time-saving and health promotion) as a motivator in making more eco-centric choices?</p> <ul style="list-style-type: none"> • “As a student, I would like to participate in[green] events in which students are rewarded and involved in activities.” • “Convenience is important[for encouraging everyone to become greener]. People often think recycling is inconvenient[due to lack of recycling bins].” • “People always need incentives to change their behaviour.” • “Personal benefits of becoming green are important. For example, active transport is one way people can keep healthy and fit[in addition to its environmental benefits] ... People should therefore be made more aware of such benefits of choosing green.” 	<p style="text-align: center;">6) Policies Factor</p> <p>How important is senior management support for sustainability within the university campus in encouraging you to make more eco-centric choices while you are on campus?</p> <ul style="list-style-type: none"> • “Student clubs should be involved in sustainability policies to help disseminate information to students and implement their own green initiatives.” • “Senior management can start a sustainability trend, which can then be translated down to staff and students. Sustainability should always start from the top level ... Bottom-up initiatives[should then follow] to ensure an all-rounded approach to sustainability.” • “Information dissemination of management's green policies can encourage me to become greener ... Key benefits and outcomes of these policies should be communicated to all staff and students.” • “If there was funding availability from senior management for green initiatives, I would be more motivated to explore possible initiatives for my office.” • “Every time one of us finds a bit of time to[come up with green initiatives for our office], we will start to do something, but[these initiatives] will go on a back shelf for a while because there are other priorities[in our jobs]. We will only be able to complete these initiatives if we have extra resources or staff who are completely responsible for green initiatives in the office.”

REFERENCES

- [1] L. Velazquez, Sustainable universities around the world: "A model for fostering sustainable university programs' effectiveness", Lowell, Massachusetts: University of Massachusetts Lowell, 2003.
- [2] ULSF. (2012) Talloires Declaration Institutional Signatory List.[Online]. Available: http://www.ulsf.org/programs_talloires_signatories.html
- [3] Sustainable Campus Group. (2011) Sustainable Campus Group summary report.[Online]. Available: http://www.monash.edu/research/sustainability-institute/assets/documents/scg_aust_tertiary_ed_sust_report_2011_summary_web.pdf
- [4] W. Sarkissian, N. Hofer, Y. Shore, S. Vajda, and C. Wilkinson, Kitchen table sustainability: Practical recipes for community engagement with sustainability, London: Earthscan, 2009.
- [5] M. Dyball, Sustainability in an Australian university: Staff perception, Sixth Asia Pacific Interdisciplinary Research in Accounting Conference: proceedings of the conference in Sydney, Australia, 2010, Sydney, Australia: University of Sydney, 2010.
- [6] Thorgersen, J., 1999, The ethical consumer, moral norms and packaging choice, *Journal of Consumer Policy*, 22(4), 439-460.
- [7] Kaiser, F. G., Wölfing, S., and Fuhrer, U., 1999, Environmental attitude and ecological behaviour, *Journal of Environmental Psychology*, 19(1), 1-19.
- [8] Barr, S., 2003, Strategies for sustainability: Citizens and responsible environmental behaviour, *Area*, 35(3), 227-240.
- [9] Follows, S. B., and Jobber, D., 2000, Environmentally responsible purchase behaviour: a test of a consumer model, *European Journal of Marketing*, 34(5/6), 723-746.
- [10] McKenzie-Mohr, D., 2000, Fostering sustainable behaviour through community-based social marketing, *American Scientist*, 55(5), 531-537.
- [11] Ottman, J. A., Stafford, E. R., and Hartman, C. L. (2006). Avoiding green marketing myopia, *Environment*, 48(5), 23-36.
- [12] Krizek, K. J., Poindexter, G., Barnes, G., and Mogush, P., 2007, Analysing the benefits and costs of bicycle facilities via online guidelines, *Planning Practice & Research*, 22(2), 197-213.
- [13] Conroy, M. M., and Beatley, T., 2007, Getting it done: An exploration of US sustainability efforts in practice, *Planning Practice & Research*, 22(1), 25-40.
- [14] Markey, S., Connelly, S., and Roseland, M., 2010, Back of the envelope: Pragmatic planning for sustainable rural community development, *Planning Practice & Research*, 25(1), 1-23.
- [15] Oskamp, S., 1995, Resource conservation and recycling: Behaviour and policy, *Journal of Social Issues*, 51(4), 157-177.