Final Report:

To What Degree Does Attendance of the ESS Lectures Relate to Levels of Civic

DALHOUSIE UNIVERSITY
Inspiring Minds

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SUST/ENVS: 3502: The Campus as a Living Laboratory
Date: April 17th, 2015

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Executive Summary:

Dalhousie University employs the environment, sustainability and society (ESS) lecture series to engage students, staff and the broader community with academia on a variety of ESS topics. Although it is understood that these lectures play an important role in fostering community engagement among local populations, it has been determined that there is not sufficient information related to attendance and the impacts of ESS lectures on attendees. With the use of a non-probabilistic questionnaire to provide information from respondents, a process was derived that allowed the analysis of lecture attendance, levels of social capital, and application of ESS lecture content within attendees' communities as measures of Dalhousie's success at contributing to community engagement. Due to limitations associated with the study, results could not be generalized, however, the conclusions certainly indicate that future research of this nature should be conducted.

Research was performed on March 26 through the application of a questionnaire at the ESS lecture series, presented in Ondaatje Hall, Marion McCain Arts & Social Sciences Building, 6135 University Avenue, Halifax. All attendees of the lecture on this date were subject to the questionnaire, 88% of which returned their forms. This meant that there was a response rate of 88% received.

80% of respondents were undergraduate students, 1.6% were Dalhousie graduate students, 9% were community members, 3.9% were Dalhousie faculty members, 0.78% were Dalhousie staff members, and 3.15% were affiliated with another university. It was discovered that 80% of respondents agreed, either fully or somewhat, that they felt engaged with their community. When asked if respondents trusted their fellow community members, 91% of respondents indicated that they did trust their fellow community members to some extent. Thirdly, when asked if respondents felt responsible for their fellow community members, 74% of respondents shared that they felt responsible, at least somewhat, for their fellow community members. These findings provided important data evidencing that at an existential level, most respondents felt engaged with their communities.

Upon finer analysis, the research confirmed that 38% of respondents were involved in a social activity once weekly, and 38% of respondents were involved in volunteer work at least once daily, weekly, monthly or annually. Of those involved most often in volunteer work, community members exhibited the highest level of engagement, which was the primary premise demonstrating one of the key findings of this study, that the highest level of social capital among ESS lecture attendees who

responded to the questionnaires existed among community members. Determinations regarding the level of engagement among Dalhousie grad students, Dalhousie faculty members, Dalhousie staff members, students, faculty, or staff from another university, and other (self-reported) subpopulations were not conclusive, as these groups did not have statistically representative samples within the population. Overall, the clearest trend observable throughout the research, aside from the high level of engagement among community members, is that the majority of respondents replied 'somewhat agree' to questions intended to measure social capital.

Ultimately, the research team recommends that the work and findings of this report be subject to additional research to further gather useful research that can display conclusive results. Additionally, the ability to employ a probabilistic sampling technique within the methodology of this study will ensure that results may be generalized to the weekly lecture population. If these additional steps were taken to expand upon this study, the results could be useful for administrators, decision-makers and the College of Sustainability in improving and promoting the ESS lecture series.

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1. Introduction:

The Dalhousie College of Sustainability's mandate states that: "the College acts as a focal point for Dalhousie's scholars and students and members of the broader community, creating opportunities for synergies in learning, teaching, scholarship and community engagement" (College of Sustainability, Dalhousie University, n.d.a). Community engagement is fundamental to Dalhousie's pursuit of sustainability and recognized as "one of the College's four interlocking conceptual pillars" (College of Sustainability, Dalhousie University, n.d.b). The exchange of education and ideas between the Dalhousie community and the broader community of other academic institutions, government or non-governmental agencies, activists, and citizens is one of paramount importance (College of Sustainability, Dalhousie University, n.d.c). One of the channels through which Dalhousie facilitates this exchange of ideas between the academic community, and the public is the Environment, Sustainability, and Society (ESS) Lecture Series. The lectures that are presented weekly during each respective academic term touch on a variety of topics related to environmental, economic, and social sustainability and are open to the public free of charge (College of Sustainability, Dalhousie University, 2015).

Despite the importance the College of Sustainability places on community engagement, and the role of the ESS lectures in creating a space that is open to both the university community and the public, there is insufficient information related to attendance and the impacts of the ESS lecture series on attendees. Our research team assessed the overall level of social capital reported by lecture attendees and the effects of attendance on community engagement by using a non-probabilistic questionnaire administered to every lecture attendee at one ESS lecture on March 26th of 2015. This technique was selected because there was insufficient attendance to complete a multi-cluster sample based on a segmentation of the auditorium at full capacity. Despite our non-probabilistic sample, our results are meaningful as we had 88% response rate. Our processes for the administration of this questionnaire are fully explained in the Methodology section.

We were specifically interested in analyzing lecture attendance, levels of social capital, and application of ESS lecture content within attendees' communities as measures of Dalhousie's success at contributing to community engagement. As demonstrated in the literature review that follows there is a correlation between high levels of social capital and improved sustainability at the community level. Our team conducted research that gauged and determined the degree to which lecture attendees reported levels of social capital, community engagement, impact of ESS lectures in determining their likelihood to engage in their communities, and application of content derived from ESS lectures within their communities. For the purpose of this research we defined community engagement as: "acting upon a heightened sense of responsibility to one's communities [which] includes [participation in] a wide range of activities, including developing civic sensitivity, participation in building civil society, and benefiting the common good" (Jacoby, 2009) and measured this using standard social capital indicators (level of engagement, level of trust, level of responsibility) in conjunction with reported levels of motivation to participate in community engagement as a result of ESS lecture attendance and application of lecture content within their communities.

2. Backgrounds and Rationale:

2.1. Social Capital as Related to Sustainability

Social capital is a term associated with multiple definitions and has been applied to various fields of research including community health, civic engagement, politics, and the environment. Baum and Ziersch (2003) argue that there are two primary schools of thought related to social capital, the first coming from Robert Putnam and the second from Bourdieu. In brief, Putnam (1995) defined social capital

primarily as a community level resource defined by the features of networks, organizations, norms, and social trust within a community. Putnam viewed social capital as both an ecological feature and public interest that facilitates cooperation for mutual benefit (Baum & Ziersch, 2003).

Bourdieu (1986) conversely argued social capital is a measure of the resources that accrue to individuals as a result of their involvement in a social network, and ultimately a form of economic capital. Broader definitions of social capital stretch to include "the social and political environment that enables norms to develop and shape social structure" (Lehtonen, 2004, p. 199). For the purpose of this literature review, social capital is defined as collective benefits of social networks that can promote a community to operate harmoniously and effectively, the ability of a democracy to function as an evocation of action for the collective good pertaining to issues of environmental management, sustainability, and building resiliency (Krasny, Kalbacker, Russ & Stedman, 2015). Despite these variances in definition, the literature recognizes several defining types of social capital.

The overarching types of social capital are known as bridging and bonding. Bonding social capital refers to social capital between individuals or groups with shared demographic characteristics (Baum & Ziersch, 2003). Bonding social capital has been criticized for being exclusionary (Baum & Ziersch, 2003). Otherwise, bridging (or linking) social capital refers to the ties that connect different communities and individuals. Linking social capital can span hierarchies of power, and the literature suggests linking social capital has the ability to reduce inequality by strengthening feelings of compassion and shared responsibility (Baum & Ziersch, 2003). Despite these academically accepted definitions of the terminology, there is a recognized empirical difficulty in measuring or distinguishing between types of social capital (Baum & Ziersch, 2003).

Efforts to measure social capital have been predominantly quantitative with "a particular focus on secondary analysis of individual level survey datasets […] exploring per capita membership in voluntary groups and levels of inter-personal trust" (Baum & Ziersch, 2003, p. 343). The variables of trust and civic participation are used to analyze the mobilization of resources available to individuals as a result of their access to social capital (Fleura, 2012). This approach relies upon the Bordieu definition of social capital as a predominantly individual resource. Tools for measuring social capital in scientific literature often focus on network analysis and access to resources; however, this is insufficient for analyzing the mobilization of social capital to create change as it only recognizes partial determinants of social capital (Fleura, 2012). Understanding the ability of a community to mobilize its social capital is of increasing relevance as social policy and community organizations engage in community building as a tool for populations to "manage and foster community change" (Chaskin, Goerge, Skyles, & Guiltinan, 2006, p. 490). This emphasis on community building as a tool to identify, support, and develop local resources to address and prioritize community needs, demonstrates the potential for social capital to contribute to increased sustainability (Chaskin et al., 2006).

Boyle (2010) argues that any attempt to achieve sustainable development must recognize the co-existence of individual actors within a community. He further emphasizes that the neoclassical view of human beings as self-interested individual economic actors, in which individual actions are separated from community influence, is both unsustainable and impossible. The emphasis on economic capital excludes the emerging literature of social capital, and fails to acknowledge the possibility of individuals acting within an economy for the common good (Boyle, 2010). The integration of the social and economic pillars of sustainability strengthens what Lehtonen (2004) refers to as the social dimension of sustainability, which is commonly recognized as the weakest of three pillars of sustainability: economic, social, and environmental. Lehtonen (2004) further reinforces the interconnectedness of the three pillars of sustainability by arguing that social capital can be used to gauge the environmental-social interface and

improve overall sustainability. These improvements occur as a result of understanding the interactions between the social environmental and natural environment (Lehtonen, 2004).

Lehtonen (2004) emphasizes the existence of a gap in the literature to correlate social capital to values that positively impact sustainability, arguing that while social capital may be used to analyze social sustainability it has not developed practical applications, thus it is best suited for analytical work or marketing social issues. This view is contradicted by Kusakabe's mixed-methods research of social capital networks that determined social capital "plays an essential role in expediting the process of goal sharing and resource flow […] thereby making collective action possible" (2012, p. 1043). Kusakabe's research concluded that bonding social capital builds solidarity for sustainability movements, bridging social capital extends the social network and transfer of information, and identifies bracing as a third type of social capital which enables communities to create joint strategies. Kusakabe (2012) admits that the results from this research study are not categorically conclusive, but suggests that efforts to strengthen social capital increase the success of sustainable development policy implementation.

Social capital can be strengthened by community engagement, as it facilitates "interaction between people and processes they engage in for a positive public outcome" (Malik & Wagle, 2002, p 2). Community engagement, " [which] refers to the connection between governments, citizens, and communities on a range of policy, program and services issues" (Queensland Government, 2011, para 1), develops representation, accountability, and gives voice to community members in both formal and informal settings (Malik & Wagle, 2002). Greater community engagement has been shown to "minimize negative externalities for social capital such as ethnic heterogeneity" (Andrews, 2009). Ethnic heterogeneity (diversity) negatively impacts social sustainability if there is insufficient linking social capital (Andrews, 2009). Community engagement can enhance relationships between community members, minimize bias, and maximize trust. This process of community engagement strengthens social capital, and mitigates threats to social sustainability (Andrews, 2009).

2.2. The Role of Sustainable Education in Creating Social Capital

Recent literature has shown a clear connection between environmental education (EE) and social capital. The terms environmental education, sustainability education, and education for sustainable development are used interchangeably in the literature. Environmental education is defined as "enabling citizens around the globe to deal with the complexities, controversies and inequities arising from issues relevant to the environment, natural heritage, culture, society and economy" (Arjen, 2012, p. 12). The type of social capital that occurs as a result of EE creates a positive feedback cycle, whereby promoting community engagement and education in turn leads to greater opportunities for generating social capital and increasing understanding of environmental systems and issues (Krasny, et al., 2015). Krasny, et al. (2015) lists eight types of EE that promote social capital: intergenerational learning, place-based learning, environmental action, school-community partnerships for sustainability, social learning, social-ecological systems resilience, community-based natural resource management, and action competence.

EE designed to evoke social capital is unique in that it alters the traditional focus of changing individual behaviours to conditions that enable the individual to place their behaviours and actions within a larger system (Krasny & Tidball, 2011). This change in focus creates conditions that enable a community to take action and become engaged with their community (Krasny, et al. 2015). In a study conducted in five kindergarten to grade twelve schools (K-12) in the northeastern United States, the implementation of an EE program demonstrated a statistically significant increase in the level of social capital and resilience of social networks (Leahy & Thorton, 2012). This particular EE program involved a variety of stakeholders including students, government employees, environmental organizations, local businesses, colleges, and community volunteers (Leahy & Thorton, 2012). The ESS Lecture Series

reflects a similar complexity of stakeholders, with 'panel members' at one lecture belonging to a non-profit organization, government department, and First Nations community (personal communication, 2015). The ESS Lecture Series, therefore, illustrates collaboration that can "allow people to evolve from a narrow purely self-serving viewpoint to a more altruistic view point" (Leahy & Thorton, 2012, p. 170).

EE also fosters social-ecological systems resilience. Social-ecological systems resilience is made up of four aspects: diversity, self-organization, learning through experience, ecosystem services, and social capital (Krasny & Tidball, 2011). These four aspects are fostered by civic ecology education, which investigates interactions and feedback systems of individuals, community members, and environmental outcomes (Krasny & Tidball, 2011). Successful learning in civic ecology education is evidenced by "successful participation and increasing possibilities for action in a social-ecological system" (Krasny & Tidball, 2011, p. 5). Teaching civic ecology has been linked to increase social capital (along with the other aspects) that make up a resilient social-ecological system.

Each form of EE builds upon each other to create an abundance of social capital that is beneficial to participants in the long-term. The long-term benefits of EE are exemplified by a study done in Switzerland that aimed to capture the impact of national sustainability outreach over 20 years (Frischknecht, Hansmann & Mieg, 2012). This study conducted qualitative interviews in 20 Swiss Institutes to determine their level of social capital, as influenced by sustainability education implemented in Switzerland in the 1990s. The researchers discovered five transmission paths of EE into social systems that increased levels of social capital (Frischknecht et al., 2012). To see a more in-depth explanation of the impact of these transmission paths see Table 1. The long-term benefits of EE, as displayed in Switzerland, indicate that EE is key in creating social capital for a community (Frischknecht et al., 2012).

Transmission Path of Sustainability Education	**Impact**
Internalization	Companies Internalized environmental regulations and tasks
Networks	Growing network of sustainability education students: -Redirection of political agenda -Demand for environmental consulting and services -Increased capacity to further expand networks
Standardization	Standardization of environmental practice and guidance
Professionalism	Sustainability education fostered the field of Professional environmental services
Qualification Profile	Graduated from sustainability education program considered highly qualified

Table 1: The impact of five transmission paths of sustainability education on the social capital of 20 Swiss Institutes (adapted from Frischknecht et al., 2012).

2.3. Environmental Awareness as Related to Sustainability

It is only in recent decades that scientists have realized the level of our current environmental degradation. Although much of these scientific findings are now known as facts, the general public is not well informed to the cause and effect relationships humans have with our environment. The concept of environmental awareness arose quickly in the "the 1970s, when almost everyone became concerned about pollution, natural areas, population growth, food and energy consumption and biotic diversity" (Marale,

2012 p. 869). Abdullah Karatas writes "environmental awareness is informed comprehension and pronounced responsibility for environmental problems on the part of citizens and those responsible in administration and industry" (2013, para. 1). Environmental awareness, broadly stated, means to understand the vulnerability of our environment and the importance of its protection. It is vital to the sustainability of humans and the environment that all citizens are conscious of the negative impacts related to consumption habits.

2.4. Environmental Education on Campus

The aim of environmental education is to integrate values, activities, and principles related to sustainable development in the form of education (Arjen, 2012). Environmental education is essential for the implementation and achievement of long-term campus sustainability. Post-secondary education institutions develop skills and knowledge amongst their students, staff, and greater community. Therefore, campus sustainability is a vital tool for raising environmental awareness and building social capital.

Previous research has shown a positive correlation between sustainable education and post-secondary education. Research conducted at University of Wyoming engaged college students with sustainability issues through course material and found it had increased campus sustainability and sustainability in the greater community (Caires et al. 2010). Caires et al.'s research discovered that over "the past 10 years, most of the major changes towards becoming more sustainable is because of the students efforts" (Caires et al. 2010). The benefits of this program at University of Wyoming indicate that implementing sustainable education has improved the sustainably on campus and can enhance social capital.

2.5. The Role of The University in Promoting Community Engagement

Ernest Boyer (1990) has called for higher education institutions "to serve a higher purpose" and to "embrace its civic mandate" (Hartley, Saltmarsh, Clayton, 2010). In that regard, higher education institutions tend not to satisfy either of these things, but their mandates must extend beyond academia and research – Universities must demonstrate a more substantial role within their communities. Sustainability has initiated its integration into colleges' and universities' "missions and planning, curricula, research, student life, operations, and purchasing", but on the periphery lays community partnerships (Rowe, 2007). The satisfaction of a sustainable agenda, on behalf of higher education institutions, cannot ignore the function community engagement maintains within the concepts of sustainability, and furthermore the role that community engagement plays in accumulating and exercising social capital. Dale and Newman (2010) argue that social capital is not a necessary or sufficient condition for the development of community initiatives (Dale & Newman, 2010). There must be significant leadership to transform social capital into meaningful community engagement.

Newman and Dale maintain that "agency is the key indicator of a group's ability to respond and identify cohesive solutions to sustainable development challenges" they further assert that "if social capital is to be put to use, there must be agency" (2005). Post-secondary institutions are ideal providers of agency. Colleges and universities have the ability to foster social action that enables citizens to acquire rights, and to reinforce mutual responsibility between the institution itself and the community that hosts it (Newman & Dale, 2005). Notably, these institutions can provide communities with a diverse set of resources critical for the transformation of social capital into community engagement. Colleges and universities provide access to reliable information, diverse intellectual capital, and wisdom (Newman & Dale, 2005). Furthermore, these institutions have the ability to monitor and research the effects of community development. Newman and Dale argue that "agency is enhanced when people feel they can

influence the process, that their voices are being heard, and that they can make a difference" – universities and colleges provide a forum that supports these conditions (2005). Smith, who declares, emphasizes the importance of post-secondary institutions as incubators: "Universities today are the seed heads of intellectual growth in an age of rapid and monumental change" (1963). For the purpose of promoting sustainability on campus it is necessary that elements of community engagement and social capital are incorporated into the functions of post-secondary institutions.

3. Methods:

We chose to conduct our research during the ESS Lecture series, which runs Thursday nights from 7:00 p.m. to 9:00 p.m. in Ondaatje Hall, Marion McCain Arts & Social Sciences Building, 6135 University Avenue, Halifax. Research was originally scheduled to be completed on three separate Thursdays throughout March of 2015: 5th, 12th and 19th. However, due to cancellations caused by snow and additional internal factors, our study was conducted during a single lecture on the night of March 26th, 2015. The team engaged respondents through the distribution of questionnaires, with the intention that respondents would fill out these questionnaires accurately and honestly, and return them to the researchers following the completed lecture period. Surveys were collected and returned once completed. Furthermore, our team solicited a $49 grant, from the Dalhousie Student Union Sustainability Office (DSUSO) to fund our operations and subsequent prize draw.

3.1. Sample

The study population was comprised of all attendees of the ESS Lecture. Ondaatje Hall has a capacity of 535 people, so it was estimated that our sample size would be close to this number. However, the total attendance of the lecture surveyed was actually 171 individuals. Non-probabilistic, purposive sampling was used, as the entire population was sampled. We were unable to collect a sampling frame of all possible attendees. The initial plan was to use multi stage cluster sampling to obtain a probabilistic sample, however due to the cancellation of the previous lecture we wanted to gain as much information as possible. To obtain an accurate count of ESS Lecture attendees, we deployed a member of our team to count all the attendees within Ondaatje Hall during the survey frame. This method provided accurate data about the number of people inside the hall. With the data collected of how many attendees versus how many surveys were completed we developed our statistical analysis. If this research were to be completed again in the future, we would suggest a probabilistic sample using the multi stage cluster sampling over a longer time frame to allow for more representative data.

3.2. Research Design

Our research method was comprised of a questionnaire (Appendix A) based upon a quantitative design. The questionnaire was constructed of 15 questions aimed to produce informative and precise results about the demographic distribution of attendees and the effects of the ESS Lectures on community engagement.

Closed-ended question design allowed our team to tailor the answers to ease in analysis as well as provide a clear and concise question for individuals. In building our questionnaire we decided to use one single-sided page to deter respondents from feeling overwhelmed. Furthermore, our team used recycled paper to reduce the environmental impacts of our study. To allow easy completion for participants of all ages, a large font was used to ensure readability.

In addition, the research team made one $25.00 gift certificates available that would be awarded through a random draw of surveys. Respondents who would like to be entered into this draw were given the opportunity to disclose their emails on the questionnaire. The winning respondents were notified through the email they provided. This reward incentivized respondents to participate in a meaningful manner.

3.3. Instrumentation

The administration of the questionnaire, our primary research/data collection instrument, was conducted as follows. The questionnaires were handed out to all lecture attendees in the Ondaatje Hall prior to the commencement of the lecture. An instructions section at the top of the form identified our team's affiliation with Dalhousie University and the College of Sustainability, which directed subjects to respond accurately and honestly to the questions provided, how to return the questionnaires to the researchers, and included a message thanking respondents for their participation. In addition, researchers situated themselves at exits at the top of the auditorium for the duration of the lecture, to ensure that the researchers intercepted any respondents who left the lecture prior to its conclusion. Upon the conclusion of the lecture, the researchers provided an area for the return of surveys at the two bottom exits of the auditorium, thus not excluding any possible respondents who chose to leave through these exits, while the other researcher remained at the top two front exits of the Ondaatje Hall to receive surveys.

3.4. Analysis of Data

Firstly, the collected data was recorded in Microsoft Excel tables to chart the responses and provide simple analysis. Statistical analysis was be applied to quantitative data such as regression analysis through Excel and IBM Statistical Package for the Social Science (SPSS). Our team analyzed emerging trends observed from medians associated with responses to ordinal level questions.

3.5. Limitations and Delimitations

3.5.1. Limitations

Limitations are factors influencing a study that the researcher cannot control. There are a variety of limitations our team considered in the conduct of our study, and we understand how these factors restricted our research design, analysis of data, and final conclusions. First, we have considered the nature of self-reporting (of respondents) (Dallas Baptist University, n.d.). It is understood that subjects may have responded in a manner that does not represent exact reality. Furthermore, the rigid time constraints of this study, as well as external factors, limited our ability to sample a larger representation of the population. Ultimately, it is understood that our findings cannot be extrapolated to generalize the larger population of ESS lecture attendees. Our team also identified the potential risk of apathetic response to our questionnaires, or the possibility that completed questionnaires may not be returned to the research team. A thorough examination of the auditorium following the conclusion of the lecture was conducted in an attempt to collect remaining questionnaires and to reclaim discarded or unused forms. Finally, we identified the risk that subjects may purposely provide misleading responses, misunderstand questions or instructions, or otherwise skew the final results.

3.5.2. Delimitations

Delimitations are choices made by the researcher within logistical factors of the study. Our team has defined delimitations to address time constraints as described in the limitations section. We employed a questionnaire comprised of predominantly closed-ended questions that allowed our team to collect and

analyze a substantial amount of meaningful data within a limited time frame. Our team chose to limit the sample frame to ESS lecture attendees at the lecture on March 26th, 2015.

4. Results:

Our research team collected data during one ESS lecture on March 26th, 2015. During this lecture 171 people were surveyed on the Dalhousie Studley Campus. Administration of the surveys yielded 124 participants in accordance with our sample size this presented us with nearly a 88% return rate. The guidelines we found for our sample size thus presented us with a 95% confidence interval and +/- 5% margin of error (Israel, 1992).

The affiliation of the participants surveyed (Figure 1) revealed that 80% were Dalhousie students, 9% community members, 3.9% were Dalhousie faculty members, 0.78% were Dalhousie staff members, 3.15% were from another university, and 1.6% were grad students.

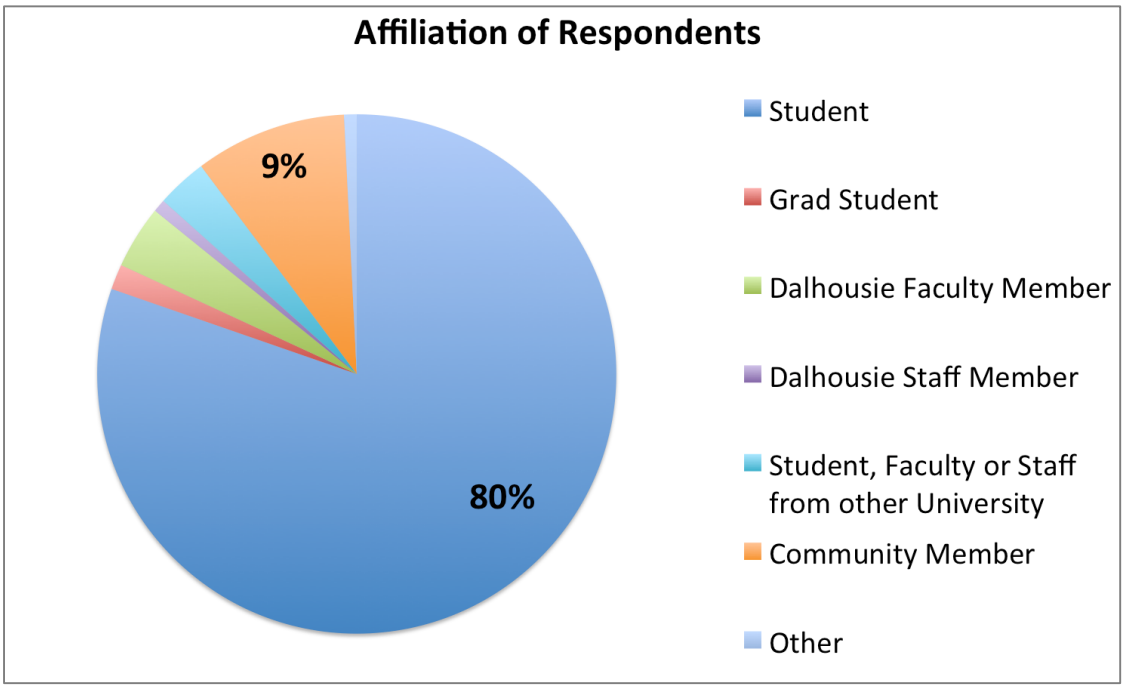


***Figure** 1 The relationship between the respondents of the ESS lecture and their affiliation to the ESS lecture. Data retrieved from Dalhousie University, Halifax*

The participants in the study were asked if they feel engaged with their community, to which 62% of the participants somewhat agreed, 18% agreed, 14% somewhat disagreed and 6% disagreed (Figure 2). The majority of the participants in the somewhat agreed category were 19% students and 8% community members.

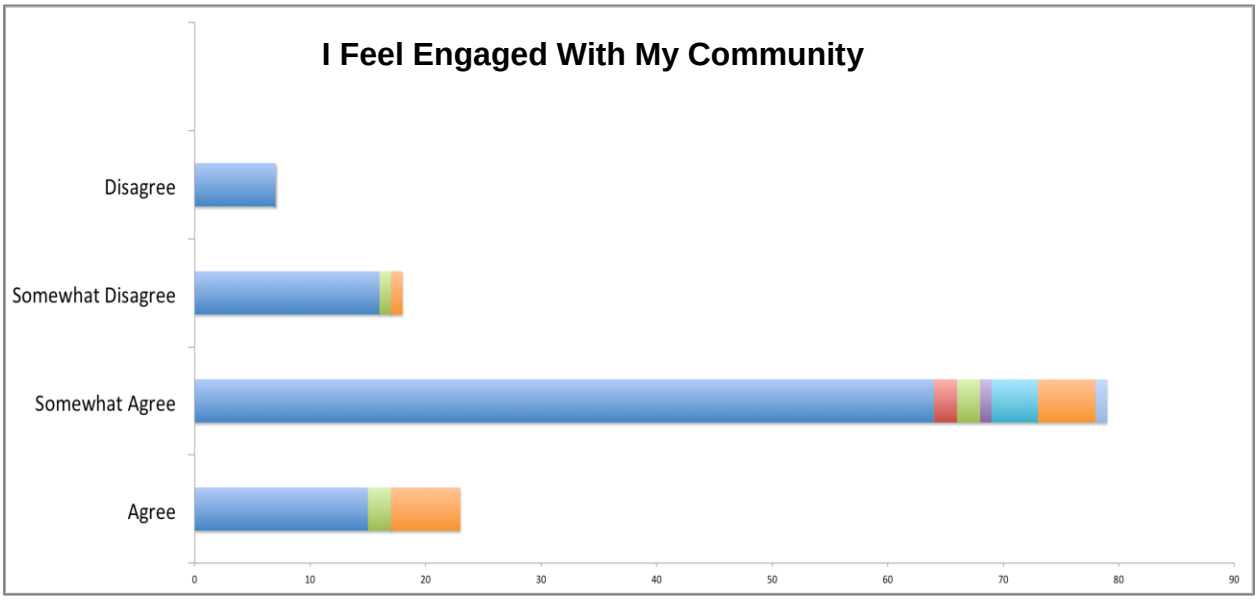


Figure 2 *The respondents of the ESS lecture and their level of social capital measured by community engagement. Data retrieved from Dalhousie University, Halifax, NS.*

Participants in the study were asked if they trust their fellow community members to which 30% agreed, 61% somewhat agreed, 9% somewhat disagreed and 0.8% disagreed (Figure 3). The majority of the participants in the somewhat agreed category were 87% students and 5% were community members.

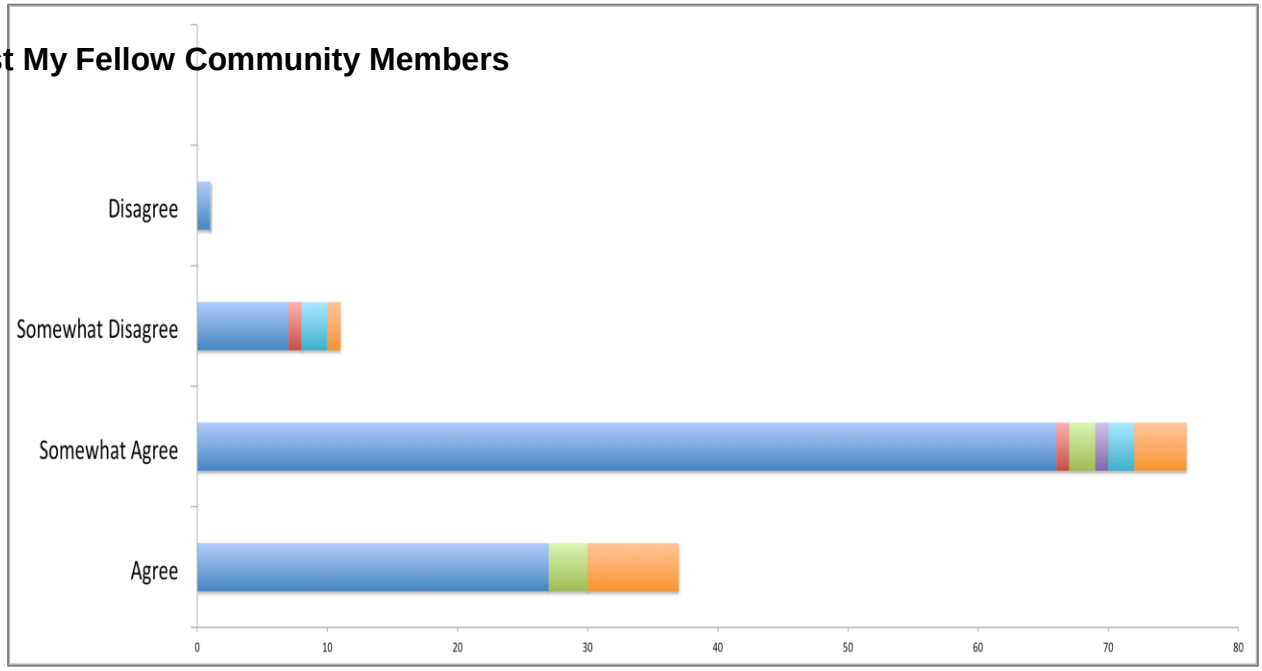


Figure 3 *The respondents of the ESS lecture and their level of social capital measured by trust in fellow community members. Data retrieved from Dalhousie University, Halifax, NS.*

Asking the participants if they feel responsible for their community members revealed 30% agreed, 44% somewhat agreed, 25% somewhat disagreed and 1.6% disagreed (Figure 4). The majority of the participants the somewhat agreed category were 76% students and 7% were community members.

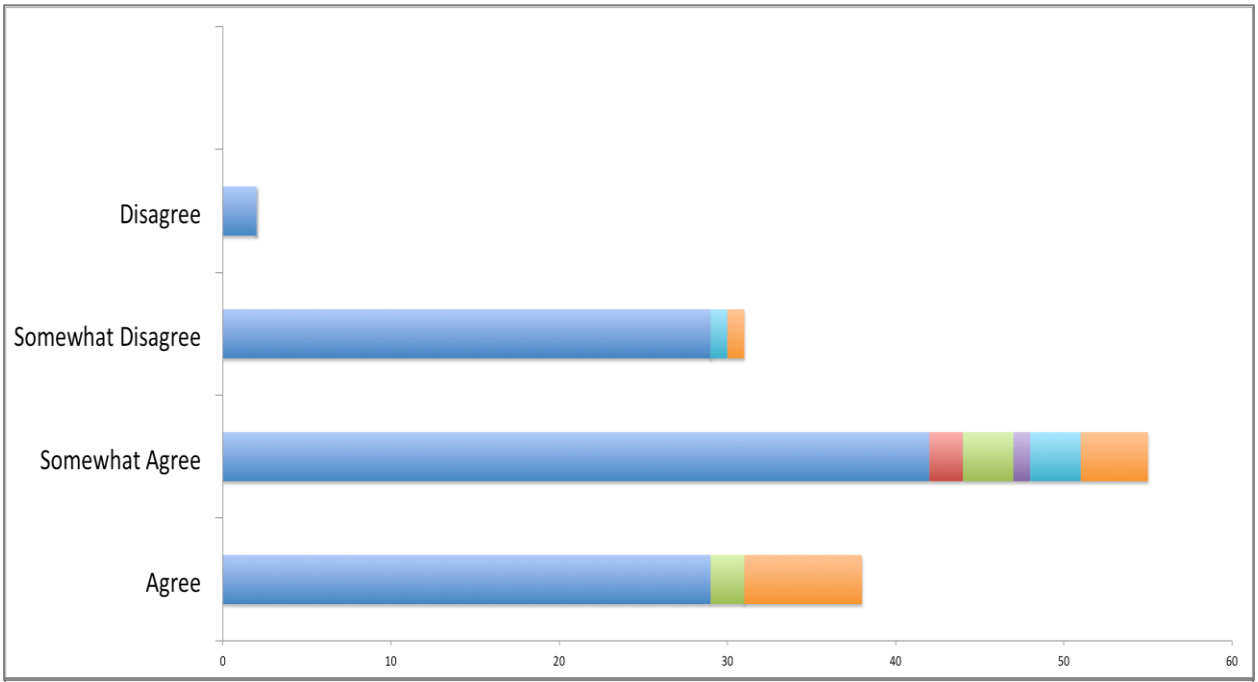


Figure 4 *The respondents of the ESS lecture and their level of social capital measured by responsibility to fellow community members. Data retrieved from Dalhousie University, Halifax, NS.*

Participation levels were assessed in social, environmental, and community based activities. The four categories that were used to measure the amount of participation in these activities were: at least once daily, at least once weekly, at least once monthly, at least once annually and Never (Figure 5). 38% of the participants participated at least once daily, weekly or monthly in any activity. 38% of the respondents also participated in volunteer at least once daily, weekly, monthly, or annually, which was the highest percentage of participants among the ten activities.

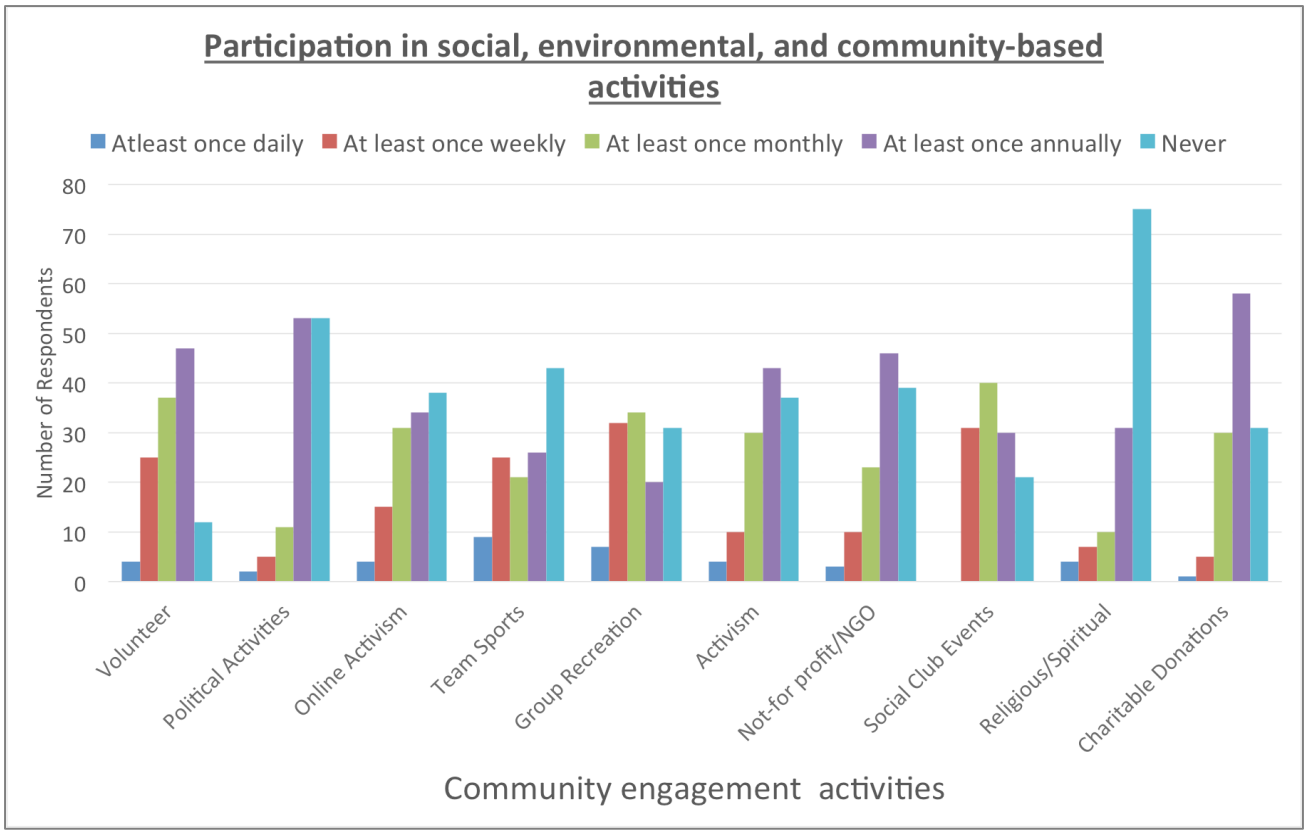


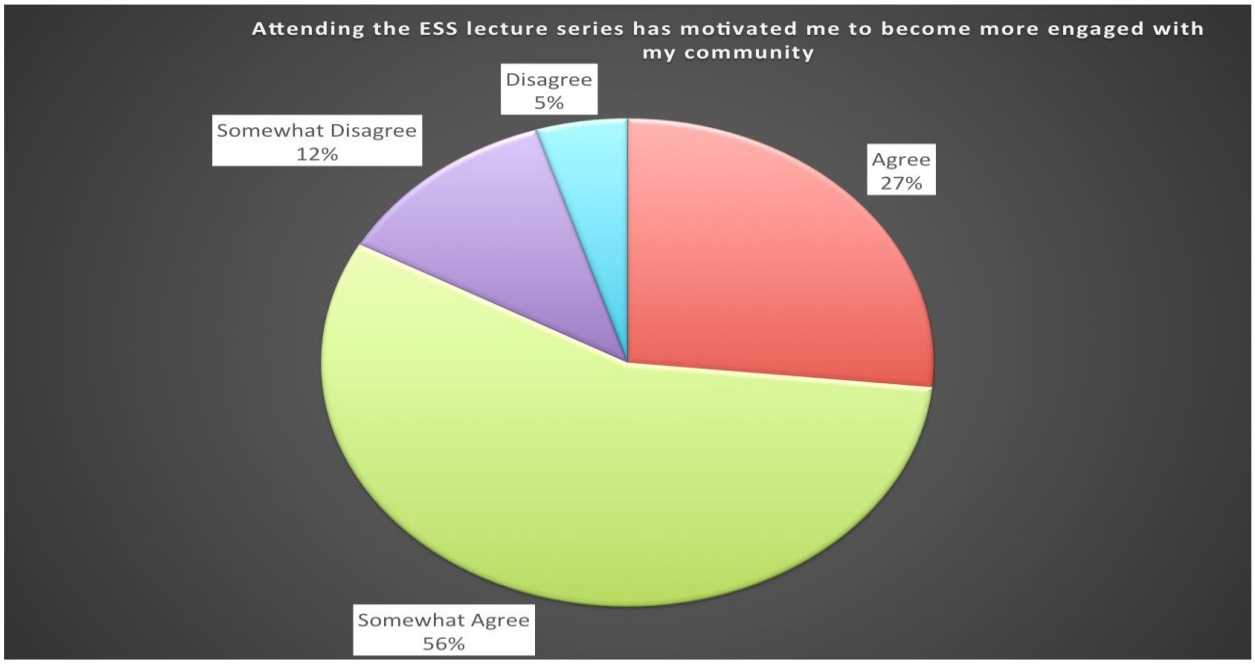
Figure 5. *Bar graph displaying the number of the respondents that participate in social, environmental, community-based activities, and how often they participate. Data retrieved from Dalhousie University, Halifax, NS.*

The participants

in the study were asked if attending the ESS lecture series has motivated them to become more engaged with their community to which 27% of participants agreed, 56% somewhat agreed, 12% somewhat disagreed and only 5% disagreed (Figure 6).

The participants in the study were asked if they had applied something they learned from the ESS lecture series within their community to which 26% of participants agreed, 46% somewhat agreed, 13% somewhat disagreed and 14% disagreed (Figure 7).

Figure 6. *Pie graph displaying the percentages of the respondents that disagree, somewhat disagree, somewhat agree and agree the ESS lectures has motivated them to become more engaged with their community. Data retrieved from Dalhousie University, Halifax, NS.*



5. Discussion:

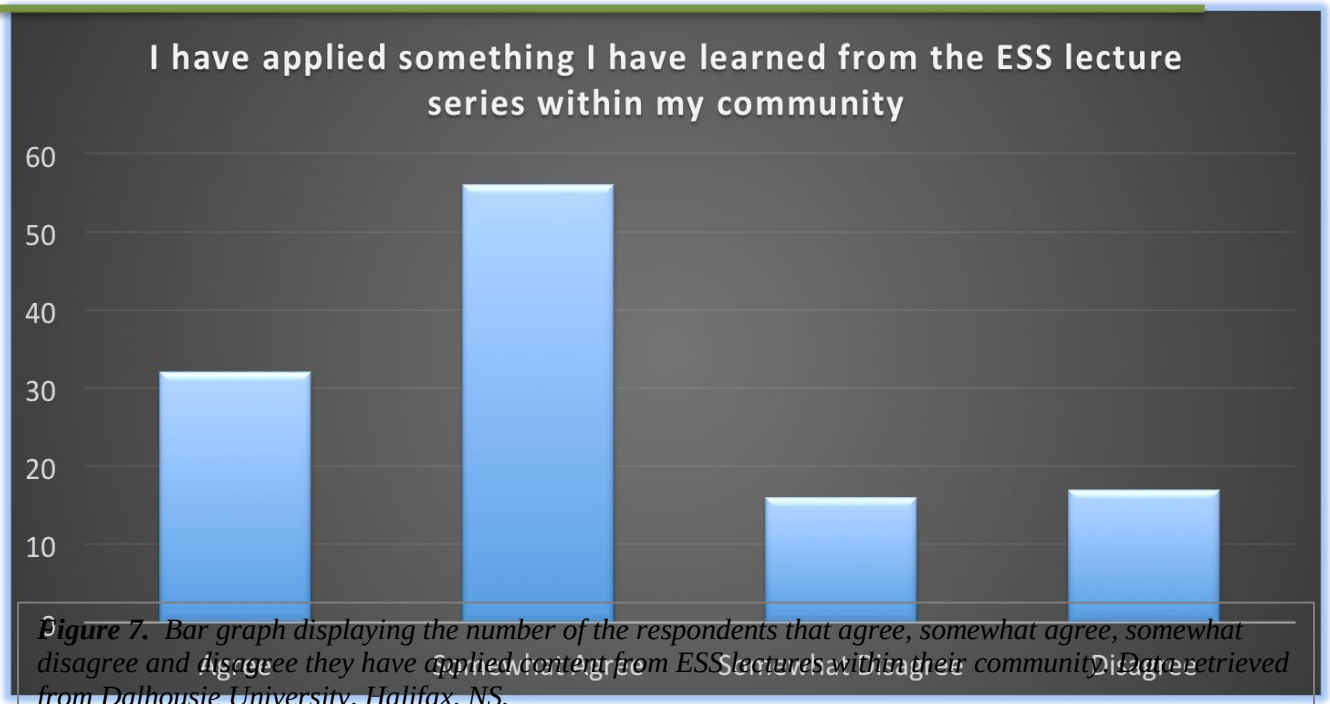


Figure 7. *Bar graph displaying the number of the respondents that agree, somewhat agree, somewhat disagree and disagree they have applied content from ESS lectures within their community. Data retrieved from Dalhousie University, Halifax, NS.*

To measure the baseline of social capital we asked three questions (ref. figure 1, 2, and 3) relating to levels of trust, engagement, and responsibility that lecture attendees felt towards their community. The results showed a tendency for the vast majority of respondents, irrespective of background, to reply with agree or somewhat agree to each of the three likert scale questions. This suggests overall relatively high levels of social capital. Respondents were more likely to somewhat disagree or disagree with the statement "I feel responsible towards my fellow community members." (Fig. 3) These results are non-conclusive, and do not represent a probabilistic sample, however they provide an opportunity to further explore factors that influence attendee's responses. This is an important area to research further, especially in the field of sustainability that is predicated on principles of inter- and intra- generational justice and the responsibility to sustaining natural systems.

Our study identified several micro-trends within the social capital measure responses; community members reported consistently higher levels of social capital than undergraduate students. Where students were most likely to respond "somewhat agree" than "agree" across all three measures of social capital, the inverse was true of community members. Community members were more likely to respond with "agree" to all three of the likert scale questions, suggesting greater overall levels of social capital. Though our study did not address the root causes of this trend, further research could identify social, cultural, or demographic factors that impact these results.

Grad students, Dalhousie faculty members, Dalhousie staff members, students/faculty/staff from another university, and other (self-reported) subpopulations did not have statistically representative samples within our total population and thus were not examined for general trends related to social capital levels.

In addition to measures of social capital our research also evaluated participation levels of lecture attendees in social, environmental, or community activities. This measure was intended to analyze the involvement of attendees with their community and to provide background data for our research questions that analyzed the impacts of lecture attendance on motivation to engage within the attendees community. The results of our survey of activity participation found that 38% of respondents participated in at least one activity at least once per month. Further analysis of this data, provided sufficient time and access to data analysis software, could provide insight into correlations between participation in certain activities and levels of social capital - or act as predictors of likelihood to apply ESS lecture content within their communities. Given the time and computing constraints of this research project we were unable to thoroughly assess the data, which due to its non-probabilistic sample size would need additional research to validate.

Our research was centrally concerned with determining if Dalhousie's College of Sustainability was successfully meeting its mandated goal to engage the community and provide opportunities for engagement between the university and the general public. In addition to measuring general attendance, which showed an overwhelming majority of Dalhousie student attendees (80%) compared to community members (9%), we asked likert scale questions to determine the effects of the ESS Lecture Series to motivate attendees to become more engaged within their community, and whether or not attendees had applied information learned in the lectures to community activities. The same trend that presented itself in overall levels of social capital was replicated in these results: though the majority of respondents replied "somewhat agree", members of the community were more likely than any other group to reply with "agree".

While these results remain inconclusive they provide avenues for future research. How can the university create stronger integration between the student body and the community that hosts them? How can this relationship be strengthened in both directions? Can the ESS Lecture Series be leveraged as a meeting place that fosters the exchange of ideas, creation of social networks, and application of source material? Further research in this realm has the potential to be transformative and further evaluate baseline measures as researched in our project design. This work can be extended into research that will assess which topics are most beneficial to attendees and provide the most transformative results.

6. Conclusion:

Based on the population that was sampled on March 26th, 2015, data showed that the majority of lecture attendees were students (80%) and that the majority of all respondents showed relatively high levels of social capital. The majority of respondents also felt that the ESS Lecture Series motivated them to become more engaged within their community and that the information learned in these lectures could be applied to their community engagement activities. Based on this sample, which is non-probabilistic and cannot be generalized, Dalhousie University is nurturing a student community that shows relatively high levels of social capital and applies the knowledge they are learning in environmental education programs to engage with the surrounding community of Halifax.

The team recommends that the work in this report be expanded upon through additional research to explore ESS lectures further and gather meaningful results that display lecture attendees' levels of social capital and the benefits that they receive from the lecture series. A longitudinal study mimicking a questionnaire similar to the one provided in Appendix **X** could be used along with a probabilistic

sampling method to ensure that any results can be generalized to the weekly lecture population and used by decision-makers to further expand and promote the ESS lecture series. In further studies it will be important to examine the root cause of the trends determined in our discussion, and perhaps conduct qualitative research to fully understand how the ESS lecture series benefits its attendees. It may also be important to examine how accessible the ESS lecture series is to the general public and what mechanisms could be put in place by Dalhousie University to increase environmental education and levels of social capital in the community.

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Appendix A: Questionnaire

ESS Lecture Questionnaire

You are invited to take part in a study that assesses the degree to which attendees at the ESS Lecture Series are involved in community engagement activities. This research is being conducted by a group of 5 students as a part of a 3rd year course at Dalhousie University under the guidance of Meggie MacMichael (mr836141@dal.ca) and Dr. Tarah Wright (tarah.wright@dal.ca). If you have any questions or concerns, please contact them.
In completing this questionnaire I acknowledge that I consent to participate in the research study, and understand that my results will be kept anonymous.

1. **What is your age? Please circle the appropriate category**
   0-15 16-25 26-35 36-45 45-55 55+

2. **What best describes your position at Dalhousie? Select one.**
   - ☐ A student?
     Please specify major: _____
   - ☐ A graduate student?
     Please specify department: _____
   - ☐ A Dalhousie University faculty member?
     Please specify department: _____

☐ A Dalhousie University staff member?
Please specify department: _____
☐ A student, faculty, or staff member from another university?
☐ A community member, part of the general public?
☐ Other: _____

Please indicate the degree to which you agree with the following statements:

3. I feel engaged with my community.

1	2	3	4
agree	somewhat agree	somewhat disagree	disagree

4. I trust my fellow community members.

1	2	3	4
agree	somewhat agree	somewhat disagree	disagree

5. I feel responsible for my fellow community members.

1	2	3	4
agree	somewhat agree	somewhat disagree	disagree

7. Have you attended an ESS lecture previously? Check yes or no. ☐Y ☐N

8. How often do you attend ESS lectures? Select one.

☐ Once (first time)
☐ Weekly
☐ Monthly
☐ Occasionally (please specify) _____

6. How often do you participate in the following social, environmental, and community-based activities? Select one box for each category.

	At least once daily	**At least once weekly**	**At least once monthly**	**At least once annually**	**Never**
Volunteer	☐	☐	☐	☐	☐
Participate Politically	☐	☐	☐	☐	☐
Online Activism	☐	☐	☐	☐	☐
Team Sports	☐	☐	☐	☐	☐
Group Recreation	☐	☐	☐	☐	☐
Activism	☐	☐	☐	☐	☐
Not-for profit/NGO	☐	☐	☐	☐	☐
Social Club Events	☐	☐	☐	☐	☐
Religious/Spiritual	☐	☐	☐	☐	☐
Charitable Giving	☐	☐	☐	☐	☐
Other:_____	☐	☐	☐	☐	☐

9. To what extent do you feel that attending the ESS lecture series has motivated you to become more engaged with your community?

Please explain.

10. **To what degree have you applied what you have learned from the ESS lecture series to the activities you are engaged in within your community?**

Please explain

Thank you for taking the time to complete this questionnaire; your feedback is greatly appreciated!

If you would like a chance to win a $25.00 gift certificate for your participation in this study then please include your email address here: _____

If you would like to receive an executive summary of our survey results please include your email address here: _____

Appendix B: Ethics Form

ENVIRONMENTAL PROGRAMMES

FACULTY OF SCIENCE

DALHOUSIE UNIVERSITY

APPLICATION FOR ETHICS REVIEW OF RESEARCH INVOLVING HUMAN PARTICIPANTS

UNDERGRADUATE THESES AND IN NON-THESIS COURSE PROJECTS

GENERAL INFORMATION

1. Title of Project: Investigating the Relationship Between Environmental Education and Social Capital

2. Faculty Supervisor(s)	**Department**	**Ext:**	**e-mail:**
Dr. Tarah Wright	Environmental Science	(902) 494-3683	Tarah.Wright@dal.ca

3. Student Investigator(s) Department e-mail: Local Telephone Number:

Abilasha Balakumar	Environmental Science & International Development Studies	ab694584@dal.ca	902 999 4100
Corbin Cloutier	Political Science & ESS	corbin.cloutier@hotmail.com	902 449 7707
Gabrielle Mills	English & ESS	gabrielle.mills@dal.ca	902 789 0796
Angela Moores	ESS & Mathematics	angela.moores@dal.ca	902 233 8460
Phil Moreau	Management & ESS	Ph491931@dal.ca	902 233 6332
Shuya Li	Community Design & ESS	oosarahlioo@hotmail.com	902 293 8411

4. Level of Project:
Non-thesis Course Project [X] Undergraduate [ ] Graduate Specify course and number:
ENVS/SUST 3502

5. a. Indicate the anticipated commencement date for this project:
____March 3, 2015____

b. Indicate the anticipated completion date for this project:
____April 7, 2015_____

SUMMARY OF PROPOSED RESEARCH

1. Purpose and Rationale for Proposed Research

Briefly describe the purpose (objectives) and rationale of the proposed project and include any hypothesis(es)/research questions to be investigated.

We are specifically interested in determining if lecture attendance (as a measure of Dalhousie's success at community engagement) is linked to the creation or enhancement of social capital. In the literature, there is an established correlation between high levels of social capital and improved sustainability at the community level. To do so our research team will analyze levels of community engagement as defined by participation in selected community activities and the impacts of lecture attendance on community engagement amongst ESS lecture attendees. As there has been no research concerning ESS lecture attendance and community engagement, the results we find will be useful to the College of Sustainability and the greater community.

2. Methodology/Procedures

a. ***Which of the following procedures will be used? Provide a copy of all materials to be used in this study***..

[ ] Survey(s) or questionnaire(s) (mail-back)
[X] Survey(s) or questionnaire(s) (in person)
[ ] Computer-administered task(s) or survey(s)]
[ ] Interview(s) (in person)
[ ] Interview(s) (by telephone)
[ ] Focus group(s)
[ ] Audio taping
[ ] Videotaping
[ ] Analysis of secondary data (no involvement with human participants)
[ ] Unobtrusive observations

[ ] Other, specify _____

b. ***Provide a brief, sequential description of the procedures to be used in this study. For studies involving multiple procedures or sessions, the use of a flow chart is recommended.***

We have chosen to conduct our research during the ESS Lecture series, which runs Thursday nights from 7:00 p.m. to 9:00 p.m. in Ondaatje Hall, Marion McCain Arts & Social Sciences Building, 6135 University Avenue, Halifax. Research will be conducted on three separate Thursdays throughout March of 2015. These dates include, March 5th, 12th, and 19th, 2015.

The study population will comprise all attendees of the ESS Lecture(s). To obtain an accurate count of ESS Lecture attendees, we will deploy a member of our team at the entrance of the Hall with a manual head-count clicker. Our research method will comprise of a questionnaire based upon a mixed method design.

The questionnaire will be made up of no more that 20 questions designed to produce informative and precise results pertaining to the demographic distribution and the effects of the ESS Lectures on civic engagement motivations. Data recovered will be recorded into Excel tables to chart the responses and provide simple analysis. Statistical analysis will be applied to quantitative data such as regression analysis. Qualitative data will be analysed through coding methods.

3. Participants Involved in the Study

a. ***Indicate who will be recruited as potential participants in this study.***

Dalhousie Participants:

[ ] Undergraduate students

[ ] Graduate students

[ ] Faculty and/or staff

Non-Dal Participants:

[ ] Children
[ ] Adolescents
[ ] Adults
[ ] Seniors
[ ] Persons in Institutional Settings (e.g. Nursing Homes, Correctional Facilities)

[X] Other (specify) __All attendees of the 7-9pm ESS Lectures in Ondaatje Hall at Dalhousie University on March 5, 12, and 19th___

b. ***Describe the potential participants in this study including group affiliation, gender, age range and any other special characteristics. If only one gender is to be recruited, provide a justification for this.***

The potential participants of this study will include all attendees of the 7-9pm ESS Lectures in Ondaatje Hall at Dalhousie University on March 5, 12, and 19th. There will be no specific group, gender, age range, or other characteristic recruited.

c. ***How many participants are expected to be involved in this study?*** __At the most 1605 participants (Maximum capacity of Ondaatje Auditorium is 535 and we are conducting our questionnaire at 3 separate lectures (3x535=1605 people at maximum capacity each night))____

4. Recruitment Process and Study Location

a. ***From what source(s) will the potential participants be recruited?***

[ ] Dalhousie University undergraduate and/or graduate classes

[X] Other Dalhousie sources (specify) ___The ESS Lectures at Ondaatje Hall on Dalhousie University Campus on March 5, 12, and 19th, hosted by The College of Sustainability___

[ ] Local School Boards
[ ] Halifax Community
[ ] Agencies

[ ] Businesses, Industries, Professions
[ ] Health care settings, nursing homes, correctional facilities, etc.
[ ] Other, specify (e.g. mailing lists) _____

b. ***Identify who will recruit potential participants and describe the recruitment process.***
Provide a copy of any materials to be used for recruitment (e.g. posters(s), flyers, advertisement(s), letter(s), telephone and other verbal scripts).

There will be no recruitment process previous to our allotted data collection periods. We are relying on existing advertisements of the ESS Lectures to attract attendees to the lecture.

5.Compensation of Participants

Will participants receive compensation (financial or otherwise) for participation? Yes [X] No [ ]
If **Yes**, provide details:

Our group will apply to DSUSO for a 50$ gift certificate to be awarded to one respondent of the questionnaire over 3 weeks (in the form of a random hand or computer-generated draw). This will act as an incentive to complete the questionnaire.

6. Feedback to Participants

Briefly describe the plans for provision of feedback and attach a copy of the feedback letter to be used. Wherever possible, written feedback should be provided to study participants including a statement of appreciation, details about the purpose and predictions of the study, contact information for the researchers, and the ethics review and clearance statement.

Note: When available, a copy of an executive summary of the study outcomes also should be provided to participants.

The introduction of the questionnaire will include a brief overview of our study, contact information for our teaching instructor, and the ethics review and clearance statement. At the end of our survey we will provide a sentence of appreciation to our respondents. We will also provide an optional space on the questionnaire for the participants to give us their e-mail addresses (which will be kept confidential) if they would like to receive an executive summary of our survey results.

POTENTIAL BENEFITS FROM THE STUDY

1. **Identify and describe any known or anticipated direct benefits to the participants from their involvement in the project**.

   The participants of our questionnaire will benefit from assisting us to determine the relationship between environmental education and social capital. These results will be presented to the College of Sustainability in hopes that many useful recommendations and benefits, such as increased opportunity for funding of environmental education, will come from questionnaire feedback.

2. **Identify and describe any known or anticipated benefits to society from this study.**

   An overarching benefit to society from this study will be in determining a positive correlation between environmental education and social capital. Social capital is defined as improving the benefits of a community and the ability of a democracy to function as it accumulates, as well as evoking action for the collective good around issues related to environmental management, sustainability, and building resiliency (Kalbacker, Krasny, Russ & Stedman, 2015). Providing research to support the positive correlation between environmental education and social capital will enable the implementation of mechanisms that will encourage social capital and benefit society from the perspective of sustainability.

POTENTIAL RISKS TO PARTICIPANTS FROM THE STUDY

1. **For each procedure used in this study, provide a description of any known or anticipated risks/stressors to the participants. Consider physiological, psychological, emotional, social, economic, legal, etc. risks/stressors**

   [X] No known or anticipated risks
   Explain why no risks are anticipated: Questionnaire will not impose any of the risks listed above, see Q2 for our procedures to ensure no harm will come to participants.

   [ ] Minimal risk
   Description of risks:

   [ ] Greater than minimal risk
   Description of risks:

2. Describe the procedures or safeguards in place to protect the physical and psychological health of the participants in light of the risks/stresses identified in Question 1.

An introduction of the researchers and an explanation of our study purpose will be given to the participants prior to the completion of our questionnaire to avoid anxiety and psychological stress. We will also provide participants with an adequate amount of time to fill out the questionnaire so they do not feel pressured or physically experience stress.

INFORMED CONSENT PROCESS

Refer to: http://pre.ethics.gc.ca/english/policystatement/section2.cfm

1. **What process will be used to inform the potential participants about the study details and to obtain their consent for participation?**

   [ ] Information letter with written consent form; provide a copy
   [ ] Information letter with verbal consent; provide a copy
   [ ] Information/cover letter; provide a copy

   [X] Other (specify) _____At the top of our questionnaire we will provide a sentence that explains to participants that by the completing the questionnaire they are consenting to participate in the research study, with all the results being kept anonymous (We do not ask for the participant's name).

2. **If written consent cannot be obtained from the potential participants, provide a justification.**

ANONYMITY OF PARTICIPANTS AND CONFIDENTIALITY OF DATA

1. **Explain the procedures to be used to ensure anonymity of participants and confidentiality of data both during the research and in the release of the findings.**

   One group member will store collected data in one location at all times. This storage location will be marked with "Confidential Information" at all times.

2. **Describe the procedures for securing written records, questionnaires, video/audio tapes and electronic data, etc.**

   Questionnaires will be stored at the house of one group member at all times, in a locked cabinet. The folder that contains the questionnaires will be marked "Confidential Information". Questionnaire Results will also be stored on only one computer titled "Confidential Information" and will not be shared on any public forum such as 'Google Documents' to ensure confidentiality of data.

3. **Indicate how long the data will be securely stored, the storage location, and the method to be used for final disposition of the data.**

   [X] Paper Records
   [ ] Confidential shredding after _____ years
   [ ] Data will be retained indefinitely in a secure location
   [X] Data will be retained until completion of specific course.

   [ ] Audio/Video Recordings

[ ] Erasing of audio/video tapes after _____ years

[ ] Data will be retained indefinitely in a secure location
[ ] Data will be retained until completion of specific course.

[X] Electronic Data

[ ] Erasing of electronic data after _____ years

[ ] Data will be retained indefinitely in a secure location

[X] Data will be retained until completion of specific course.

[ ] Other
_____

(Provide details on type, retention period and final disposition, if applicable)

Specify storage location: ___Paper records stored in one paper folder titled "Confidential Information" and electronic records stored in one electronic folder titled "Confidential Information"_____

ATTACHMENTS

Please **check** below all appendices that are attached as part of your application package:

[ ] **Recruitment Materials**: A copy of any poster(s), flyer(s), advertisement(s), letter(s), telephone or other verbal script(s) used to recruit/gain access to participants.
[ ] **Information Letter and Consent Form(s)**. Used in studies involving interaction with participants (e.g. interviews, testing, etc.)
[ ] **Information/Cover Letter(s)**. Used in studies involving surveys or questionnaires.
[ ] Parent Information Letter and Permission Form for studies involving minors.
[X] Materials: A copy of all survey(s), questionnaire(s), interview questions, interview themes/sample questions for open-ended interviews, focus group questions, or any standardized tests used to collect data.

SIGNATURES OF RESEARCHERS

_____Angela Moores_____	_____February 25, 2015_____
Signature of Student Investigator(s)	Date
_____	_____
Signature of Student Investigator(s)	Date
_____	_____
Signature of Student Investigator(s)	Date
_____	_____
Signature of Student Investigator(s)	Date

_____	_____
Signature of Student Investigator(s)	Date
_____	_____
Signature of Student Investigator(s)	Date
_____	_____
Signature of Student Investigator(s)	Date

FOR ENVIRONMENTAL PROGRAMMES USE ONLY:

Ethics proposal been checked for eligibility according to the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans

_____

Signature

Date

Appendix C: DSUSO Funding Application

DSUSO Funding Application A

Applications from Individuals Totalling $50 or Less

The DSUSO Green Initiatives fund is designed to empower Dalhousie students who pay DSU levy fees to pursue projects and opportunities that benefit the greater Dalhousie Community. While the DSUSO seeks to fund as many projects as possible, priority will be given to applications that prove the greatest overall benefit to the applicant. These benefits include, but are not limited to: personal growth; inclusion of others; environmental and social benefits; and community engagement. Please ensure you have completed the grant application checklist before submitting your application.

1. Name of DSU member applying for grant: Shuya (Sarah) Li
Please Note: DSUSO Funding Applications must be submitted by current DSU members without outstanding DSU member fees.
2. Student Number: B00586456
3. Mailing Address: apt# 1813, 1333 south park street, Halifax, NS
4. Phone Number: 902-293-8411
5. E-mail Address: oosarahlioo@hotmail.com
6. Total Amount Requested: 49$

Type of Expense	**DSUSO Budget**	**Budget Notes**
Clickers	$24.00	One clicker = $12 Therefore (12 x 2 = 24)
Incentive	$25.00	One survey participant will be chosen randomly to receive a $50 gift card as an incentive in participating.
Total	**$49.00**	

Please attach a detailed budget of the project, trip, or event. This budget should include the total cost, how DSUSO funding will be spent, in-kind donations requires, and all other funding expected from other sources (confirmed or outstanding).

7. Describe your project, event or trip, and outline how the objectives of your project coincide with DSUSO's mission to promote environmental, social, and economic sustainability

Our research team (6 sustainability students) plans to attempt to identify possible linkages between Thursday Night ESS Lecture series attendance and levels of community engagement. Research will be conducted through the use of a questionnaire distributed to a sample of ESS Lecture attendees.

We hope to link find links between non-mandatory attendance and increases in social capital and community engagement. Environmental awareness is a key aspect to many

of the ESS Lectures, leading to primary thoughts that attendees may have and demonstrate above average levels of environmental awareness.

8. Please describe any additional benefits to the others, the university, community, or beyond that will result from your application.

Benefits for the participants:

The participants will benefit from assisting us to explore the relationship between environmental education and social capital. These results will be presented to the College of Sustainability in hopes that many useful recommendations and benefits, such as increased opportunity for funding of environmental education, will come from questionnaire feedback.

Benefits for the community:

An overarching benefit to society from this study will be in determining a positive correlation between environmental education and social capital. Social capital is defined as improving the benefits of a community and the ability of a democracy to function as it accumulates, as well as evoking action for the collective good around issues related to environmental management sustainability, and building resiliency (Kalbacker, Krasny, Russ & Stedman, 2015). Providing research to support the positive correlation between environmental education and social capital will enable the implementation of mechanisms that will encourage social capital and benefit social from the perspective of sustainability.

9. Provide a timeline for your project/event/trip:

March

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
15	16	17	18 Printing of questionnaires	19 ESS lecture #1 – questionnaire set 1	20 Group meeting, compile and analyze first set of questionnaire data	21
22	23	24 Group meeting to discuss progress and any extra information regarding the data	25	26 ESS lecture #2 – questionnaire set 2	27 Group meeting, compile and analyze second set of questionnaire data	28
29	30	31 Group Meeting: Discuss problems and analysis of data.				

		Distribute work for the final report.				

April

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2 Group Meeting and rough draft presentation slides	3	2	3 Group Meeting: finalize presentation slides	4
5 Submit Presentation Slides	8	7 Pecha Kucha presentation	10	11	12 Group Meeting: Rough draft and editing of final report	13
14	15 Group Meeting: Finalize final report and submit	16	17 Final Report Due	18	19	20

Appendix D: Copy of the Past Proposal

Preliminary Proposal-Research Question: To What Degree Does Attendance of the ESS Lectures Relate to Levels of Civic Engagement?

Introduction

The Dalhousie College of Sustainability's mandate states that: "the College acts as a focal point for Dalhousie's scholars and students and members of the broader community, creating opportunities for synergies in learning, teaching, scholarship and community engagement" (College of Sustainability, Dalhousie University, n.d.a). Community engagement is fundamental to Dalhousie's pursuit of sustainability and recognized as "one of the College's four interlocking conceptual pillars" (College of Sustainability, Dalhousie University, n.d.b). The exchange of education and ideas between the Dalhousie community and the broader community of other academic institutions, government or non-governmental agencies, activists, and citizens is one of paramount importance (College of Sustainability, Dalhousie University, n.d.c). One of the channels through which Dalhousie facilitates this exchange of ideas between the academic community, and the public is the Environment, Sustainability, and Society (ESS) Lecture Series. The lectures that are presented weekly during each respective academic term touch on a variety of topics related to environmental, economic, and social sustainability and are open to the public free of charge (College of Sustainability, Dalhousie University, 2015).

Despite the importance the College of Sustainability places on community engagement, and the role of the ESS lectures in creating a space that is open to both the university community and the public, there is insufficient information related to attendance and the impacts of the ESS lecture series on attendees. Our research team assessed the overall level of social capital reported by lecture attendees and the effects of attendance on community engagement by using a non-probabilistic questionnaire administered to every lecture attendee at one ESS lecture on March 26th of 2015. This technique was selected because there was insufficient attendance to complete a multi-cluster sample based on a segmentation of the auditorium at full capacity. Despite our non-probabilistic sample, our results are meaningful as we had 88% response rate. Our processes for the administration of this questionnaire are fully explained in the Methodology section.

We were specifically interested in analyzing lecture attendance, levels of social capital, and application of ESS lecture content within attendees' communities as measures of Dalhousie's success at contributing to community engagement. As demonstrated in the literature review that follows there is a correlation between high levels of social capital and improved sustainability at the community level. Our team conducted research that gauged and determined the degree to which lecture attendees reported levels of social capital, community engagement, impact of ESS lectures in determining their likelihood to engage in their communities, and application of content derived from ESS lectures within their communities. For the purpose of this research we defined community engagement as: "acting upon a heightened sense of responsibility to one's communities [which] includes [participation in] a wide range of activities, including developing civic sensitivity, participation in building civil society, and benefiting the common good" (Jacoby, 2009) and measured this using standard social capital indicators (level of engagement, level of trust, level of responsibility) in conjunction with reported levels of motivation to participate in community engagement as a result of ESS lecture attendance and application of lecture content within their communities.

Literature Review

Social Capital as Related to Sustainability

Social capital is a term associated with multiple definitions and has been applied to various fields of research including community health, civic engagement, politics, and the environment. Baum and Ziersch (2003) argue that there are two primary schools of thought related to social capital, the first coming from Robert Putnam and the second from Bourdieu. In brief, Putnam (1995) defined social capital primarily as a community level resource defined by the features of networks, organizations, norms, and social trust within a community. Putnam viewed social capital as both an ecological feature and public interest that facilitates cooperation for mutual benefit (Baum & Ziersch, 2003). Bourdieu (1986) conversely argued social capital is a measure of the resources that accrue to individuals as a result of their involvement in a social network, and ultimately a form of economic capital. Broader definitions of social capital stretch to include "the social and political environment that enables norms to develop and shape social structure" (Lehtonen, 2004, p. 199) For the purpose of this literature review, social capital is defined as collective benefits of social networks that can promote a community to operate harmoniously and effectively, the ability of a democracy to function as an evocation of action for the collective good pertaining to issues of environmental management, sustainability, and building resiliency (Krasny, Kalbacker, Russ & Stedman, 2015). Despite these variances in definition, the literature recognizes several defining types of social capital.

The overarching types of social capital are known as bridging and bonding. Bonding social capital refers to social capital between individuals or groups with shared demographic characteristics (Baum & Ziersch, 2003). Bonding social capital has been criticized for being exclusionary (Baum & Ziersch, 2003). Otherwise, bridging (or linking) social capital refers to the ties that connect different communities and individuals. Linking social capital can span hierarchies of power, and the literature suggests linking social capital has the ability to reduce inequality by strengthening feelings of compassion and shared responsibility (Baum & Ziersch, 2003). Despite these academically accepted definitions of the terminology, there is a recognized empirical difficulty in measuring or distinguishing between types of social capital (Baum & Ziersch, 2003).

Efforts to measure social capital have been predominantly quantitative with "a particular focus on secondary analysis of individual level survey datasets […] exploring per capita membership in voluntary groups and levels of inter-personal trust" (Baum & Ziersch, 2003, p. 343). The variables of trust and civic participation are used to analyze the mobilization of resources available to individuals as a result of their access to social capital (Fleura, 2012). This approach relies upon the Bordieu definition of social capital as a predominantly individual resource. Tools for measuring social capital in scientific literature often focus on network analysis and access to resources; however, this is insufficient for analyzing the mobilization of social capital to create change as it only recognizes partial determinants of social capital (Fleura, 2012). Understanding the ability of a community to mobilize its social capital is of increasing relevance as social policy and community organizations engage in community building as a tool for populations to "manage and foster community change" (Chaskin, Goerge, Skyles, & Guiltinan, 2006, p. 490). This emphasis on

community building as a tool to identify, support, and develop local resources to address and prioritize community needs demonstrates the potential for social capital to contribute to increased sustainability (Chaskin et al., 2006).

Boyle (2010) argues that any attempt to achieve sustainable development must recognize the co-existence of individual actors within a community. He further emphasizes that the neoclassical view of human beings as self-interested individual economic actors, in which individual actions are separated from community influence, is both unsustainable and impossible. The emphasis on economic capital excludes the emerging literature of social capital, and fails to acknowledge the possibility of individuals acting within an economy for the common good (Boyle, 2010). The integration of the social and economic pillars of sustainability strengthens what Lehtonen (2004) refers to as the social dimension of sustainability, which is commonly recognized as the weakest of three pillars of sustainability: economic, social, and environmental. Lehtonen (2004) further reinforces the interconnectedness of the three pillars of sustainability by arguing that social capital can be used to gauge the environmental-social interface and improve overall sustainability. These improvements occur as a result of understanding the interactions between the social environmental and natural environment (Lehtonen, 2004).

Lehtonen (2004) emphasizes the existence of a gap in the literature to correlate social capital to values that positively impact sustainability, arguing that while social capital may be used to analyze social sustainability it has not developed practical applications, thus it is best suited for analytical work or marketing social issues. This view is contradicted by Kusakabe's mixed-methods research of social capital networks that determined social capital "plays an essential role in expediting the process of goal sharing and resource flow […] thereby making collective action possible" (2012, p. 1043). Kusakabe's research concluded that bonding social capital builds solidarity for sustainability movements, bridging social capital extends the social network and transfer of information, and identifies bracing as a third type of social capital which enables communities to create joint strategies. Kusakabe (2012) admits that the results from this research study are not categorically conclusive, but suggests that efforts to strengthen social capital increase the success of sustainable development policy implementation.

Social capital can be strengthened by community engagement, as it facilitates "interaction between people and processes they engage in for a positive public outcome" (Malik & Wagle, 2002, p 2). Community engagement, " [which] refers to the connection between governments, citizens, and communities on a range of policy , program and services issues" (Queensland Government, 2011, para 1), develops representation, accountability, and gives voice to community members in both formal and informal settings (Malik & Wagle, 2002). Greater community engagement has been show to "minimize negative externalities for social capital such as ethnic heterogeneity" (Andrews, 2009). Ethnic heterogeneity (diversity) negatively impacts social sustainability if there is insufficient linking social capital (Andrews, 2009). Community engagement can enhance relationships between community members, minimize bias, and maximize trust. This process of community engagement strengthens social capital, and mitigates threats to social sustainability (Andrews, 2009).

The Role of Sustainable Education in Creating Social Capital

Recent literature has shown a clear connection between environmental education (EE) and social capital. The terms environmental education, sustainability education, and education for sustainable development are used interchangeably in the literature. Environmental education is defined as "enabling citizens around the globe to deal with the complexities, controversies and inequities arising from issues relevant to the environment, natural heritage, culture, society and economy" (Arjen, 2012, p. 12). The type of social capital that occurs as a result of EE creates a positive feedback cycle, whereby promoting community engagement and education in turn leads to greater opportunities for generating social capital and increasing understanding of environmental systems and issues (Krasny, et al., 2015). Krasny, et al. (2005) lists eight types of EE that promote social capital: intergenerational learning, place-based learning, environmental action, school-community partnerships for sustainability, social learning, social-ecological systems resilience, community-based natural resource management, and action competence.

EE designed to evoke social capital is unique in that it alters the traditional focus of changing individual behaviours to conditions that enable the individual to place their behaviours and actions within a larger system (Krasny & Tidball, 2011). This change in focus creates conditions that enable a community to take action and become engaged with their community (Krasny, Kalbacker, Stedman & Russ, 2015). In a study conducted in five kindergarten to grade twelve schools (K-12) in the northeastern United States, the implementation of an EE program demonstrated a statistically significant increase in the level of social capital and resilience of social networks (Leahy & Thorton, 2012). This particular EE program involved a variety of stakeholders including students, government employees, environmental organizations, local businesses, colleges, and community volunteers (Leahy & Thorton, 2012). The ESS Lecture Series reflects a similar complexity of stakeholders, with 'panel members' at one lecture belonging to a non-profit organization, government department, and First Nations community (personal communication, 2015). The ESS Lecture Series, therefore, illustrates collaboration that can "allow people to evolve from a narrow purely self-serving viewpoint to a more altruistic view point" (Leahy & Thorton, 2012, p. 170).

EE also fosters social-ecological systems resilience. Social-ecological systems resilience is made up of four aspects: diversity, self-organization, learning through experience, ecosystem services, and social capital (Krasny & Tidball, 2011). These four aspects are fostered by civic ecology education, which investigates interactions and feedback systems of individuals, community members, and environmental outcomes (Krasny & Tidball, 2011). Successful learning in civic ecology education is evidenced by "successful participation and increasing possibilities for action in a social-ecological system" (Krasny & Tidball, 2011, p. 5). Teaching civic ecology has been linked to increased social capital (along with the other aspects) that make up a resilient social-ecological system.

Each form of EE builds upon each other to create an abundance of social capital that is beneficial to participants in the long-term. The long-term benefits of EE are exemplified by a study done in Switzerland that aimed to capture the impact of national sustainability outreach over 20 years (Frischknecht, Hansmann & Mieg, 2012). This study conducted qualitative interviews in 20 Swiss Institutes to determine their level of social capital, as

influenced by sustainability education implemented in Switzerland in the 1990s. The researchers discovered five transmission paths of EE into social systems that increased levels of social capital (Frischknecht et al., 2012). To see a more in-depth explanation of the impact of these transmission paths see Table 1. The long-term benefits of EE, as displayed in Switzerland, indicate that EE is key in creating social capital for a community (Frischknecht et al., 2012).

Transmission Path of Sustainability Education	**Impact**
Internalization	Companies internalized environmental regulations and tasks
Networks	Growing network of sustainability education students: -Redirection of political agenda -Demand for environmental consulting and services -Increased capacity to further expand networks
Standardization	Standardization of environmental practice and guidance
Professionalism	Sustainability education fostered the field of professional environmental services
Qualification Profile	Graduates from sustainability education program considered highly qualified

Table 1: The impact of five transmission paths of sustainability education on the social capital of 20 Swiss Institutes (adapted from Frischknecht et al., 2012).

Environmental Awareness as Related to Sustainability

It is only in recent decades that scientists have realized the level of our current environmental degradation. Although much of these scientific findings are now known as facts, the general public is not well informed to the cause and effect relationships humans have with our environment. The concept of environmental awareness arose quickly in the "the 1970s, when almost everyone became concerned about pollution, natural areas, population growth, food and energy consumption and biotic diversity" (Marale, 2012 p. 869). Abdullah Karatas writes "environmental awareness is informed comprehension and pronounced responsibility for environmental problems on the part of citizens and those responsible in administration and industry" (2013, para. 1). Environmental awareness, broadly stated, means to understand the vulnerability of our environment and the importance of its protection. It is vital to the sustainability of humans and the environment that all citizens are conscious of the negative impacts related to consumption habits.

Environmental Education on Campus

The aim of environmental education is to integrate values, activities, and principles related to sustainable development in the form of education (Arjen, 2012). Environmental education is essential for the implementation and achievement of long-term campus sustainability. Post-secondary education institutions develop skills and knowledge amongst their students, staff, and greater community. Therefore, campus sustainability is a vital tool for raising environmental awareness and building social capital.

Previous research has shown a positive correlation between sustainable education and post-secondary education. Research conducted at University of Wyoming engaged college students with sustainability issues through course material and found it had increased campus sustainability and sustainability in the greater community (Caires et al. 2010). Caires et al.'s research discovered that over "the past 10 years, most of the major changes towards becoming more sustainable is because of the students efforts" (Caires et al. 2010). The benefits of this program at University of Wyoming indicate that implementing sustainable education has improved the sustainably on campus and can enhance social capital.

The Role of The University in Promoting Community Engagement

Ernest Boyer (1990) has called for higher education institutions "to serve a higher purpose" and to "embrace its civic mandate" (Hartley, Saltmarsh, Clayton, 2010). In that regard, higher education institutions tend not to satisfy either of these things, but their mandates must extend beyond academia and research – Universities must demonstrate a more substantial role within their communities. Sustainability has initiated its integration into colleges' and universities' "missions and planning, curricula, research, student life, operations, and purchasing", but on the periphery lays community partnerships (Rowe, 2007). The satisfaction of a sustainable agenda, on behalf of higher education institutions, cannot ignore the function community engagement maintains within the concepts of sustainability, and furthermore the role that community engagement plays in accumulating and exercising social capital. Dale and Newman (2010) argue that social capital is not a necessary or sufficient condition for the development of community initiatives (Dale & Newman, 2010). There must be significant leadership to transform social capital into meaningful community engagement.

Newman and Dale maintain that" agency is the key indicator of a group's ability to respond and identify cohesive solutions to sustainable development challenges" they further assert that "if social capital is to be put to use, there must be agency" (2005). Post-secondary institutions are ideal providers of agency. Colleges and universities have the ability to foster social action that enables citizens to acquire rights, and to reinforce mutual responsibility between the institution itself and the community that hosts it (Newman & Dale, 2005). Notably, these institutions can provide communities with a diverse set of resources critical for the transformation of social capital into community engagement. Colleges and universities provide access to reliable information, diverse intellectual capital,

and wisdom (Newman & Dale, 2005). Furthermore, these institutions have the ability to monitor and research the effects of community development. Newman and Dale argue that "agency is enhanced when people feel they can influence the process, that their voices are being heard, and that they can make a difference" – universities and colleges provide a forum that supports these conditions (2005). The importance of post-secondary institutions as incubators is emphasized by Smith, who declares: "Universities today are the seed heads of intellectual growth in an age of rapid and monumental change" (1963). For the purpose of promoting sustainability on campus it is necessary that elements of community engagement and social capital are incorporated into the functions of post-secondary institutions.

Methodology

We have chosen to conduct our research during the ESS Lecture series, which runs Thursday nights from 7:00 p.m. to 9:00 p.m. in Ondaatje Hall, Marion McCain Arts & Social Sciences Building, 6135 University Avenue, Halifax. Research will be conducted on two separate Thursdays throughout March of 2015: 5th, 12th and 19th. Our team will attempt to engage respondents through the distribution of questionnaires, with the intention that respondents will fill out these questionnaires, accurately and honestly, and return them to our researchers following the conclusion of the lecture. A location will be erected at the entrance to the lecture hall to provide an area for the return of the questionnaires that will be highly visible for patrons/attendees. Furthermore, our team is soliciting a $25.00 grant, from the Dalhousie Student Union Sustainability Office (DSUSO) to fund our operations.

Sample

The study population will comprise all attendees of the ESS Lecture(s). Ondaatje Hall has a capacity of 535 people, so we estimate that our sample size will be close to this number. It is expected that the members of our sample will be no younger than an age conducive with that of current first-year students (18). Furthermore, Dalhousie claims its enrolment to be 45% male and 55% female, accordingly we expect that there will be slightly more female respondents than male respondents. Purposive sampling will be used, as we will be unable to collect a sampling frame of all possible attendees. To obtain an accurate count of ESS Lecture attendees, we will deploy a member of our team at all points of entry of Ondaatje Hall with a manual head-count clicker. This method will provide accurate data about the number of people inside the hall. With the data collected at the points of entry we will develop our statistical analysis of how many questionnaires were handed out versus how many were completed and returned.

Research Design

Our research method will comprise of a questionnaire (Appendix A) based upon a mixed method design. The use of both qualitative (open-ended) and quantitative (closed-ended) questions will allow our analysis of both forms of data. The questionnaire will be made up of 15 questions designed to produce informative and precise results about the

demographic distribution of attendees and the effects of the ESS Lectures on community engagement.

At a practical level, choosing a mixed method questionnaire will provide ample data in a short and concise format, limiting time for users (Creswell, 2014). The closed-ended questions will allow our team to tailor the answers to allow ease of analysis as well as provide a clear and concise question for individuals. The open-ended questions will be used to collect opinionated answers or other comments that the individual deems important to convey. Limitations of open-ended questions are that they can be tiresome for respondents and too many open-ended questions create difficulty during analysis (Atchison & Palys, 2008).

In building our questionnaire we decided to use a single double-sided page to deter respondents from feeling overwhelmed. Furthermore, our team intends to use recycled paper to reduce the environmental impacts of our study. To allow easy completion by attendees of all ages, we have chose to use a large font, which will be inviting and extremely readable. Along with the questionnaires, we will have pencils available for those respondents in need.

In addition, our team will be making available a $25.00 gift certificate, awarded through a random draw of surveys. Respondents who would like to be entered into this draw will have the opportunity to disclose their emails on the questionnaire. The winning respondent will be notified through their provided email. The intention is that this item will incentivize respondents to participate in a meaningful manner.

Instrumentation

The administration of the questionnaire, our primary research/data collection instrument, will be conducted as follows. The 15 question questionnaires will be placed on every seat of Ondaatje Hall prior to the commencement of the lecture(s). Respondents will then discover the questionnaires upon arrival at their seat. An instructions section at the top of the form will identify our team's affiliation with the Dalhousie University, College of Sustainability, direct subjects to respond accurately and honestly to the questions provided, instruct respondents on how to return the questionnaires to the researchers, inform respondents that the questionnaire is double sided, and include a message thanking respondents for their participation. Furthermore, this section will notify respondents that if they have already filled out this questionnaire in previous weeks, that they should abstain from completing it a second time. In addition, researchers will situate themselves at exits at the top of the auditorium for the duration of the lecture, with the intention that these researchers can intercept any respondents who leave the lecture prior to its conclusion and collect their questionnaires. Upon the conclusion of the lecture(s), one of these researchers will provide an area for the return of surveys at the bottom exits of the auditorium, so as not to exclude any possible respondents who choose to leave through these exits, while the other will remain at the top to receive surveys.

Analysis of Data

Firstly, the collected data will be recorded in Microsoft Excel tables to chart the responses and provide simple analysis. Statistical analysis will be applied to quantitative

data such as regression analysis through Excel and IBM Statistical Package for the Social Science (SPSS). Our team will analyze emerging trends observed from medians associated with responses to ordinal level questions.

Qualitative data will be analyzed through inductive coding methods. We will employ a team coding system comprised of two researchers using a grounded a posteriori context sensitive scheme. Results from the qualitative data will be presented using word cloud visuals for open-ended questions, where size of text is directly correlated with keyword frequency.

Limitations and Delimitations

Limitations

Limitations are factors influencing a study that the researcher cannot control. There are a variety of limitations our team has considered in the conduct of our study, and we understand how these factors will restrict our research design, analysis of data, and final conclusions. First, we have considered the nature of self-reporting (of respondents) (Dallas Baptist University, n.d.a). It is understood that subjects may respond in a manner that does not represent exact reality. Furthermore, the rigid time constraints of this study will limit our ability to sample a larger representation of the population, which in turn will detract from the conclusiveness of our findings. As a result of the existing time constraints there may be inexplicable anomalies amongst our data. For example, if one of the three applicable lectures exhibits significantly higher attendance from non-mandatory attendees, than the other two, our team may not be able to rationalize this. Time constraints may also place limitations on features of our study, such as the depth of coding used for the analysis of qualitative data. Ultimately, it is understood that our findings may not be extrapolated to generalize the larger population of ESS lecture attendees. Our team has also identified the potential risk of apathetic response to our questionnaires, or the possibility that completed questionnaires may not be returned to the research team. We will be doing a full survey of the auditorium following the conclusion of the lecture in an attempt to collect remaining paperwork and to reclaim discarded or unused forms. Finally, we identify the risk that subjects may purposely provide misleading responses, misunderstand questions or instructions, or otherwise skew the final results.

Delimitations

Delimitations are choices made by the researcher within logistical factors of the study. Our team has defined delimitations to address time constraints as described in the limitations section. We have chosen to employ a questionnaire comprised of predominantly closed-ended questions that will allow our team to collect and analyze a substantial amount of meaningful data within a limited time frame. We have elected to limit the selection of open-ended questions in our mixed methods approach to allow for sufficient coding time. Our team has also chosen to limit our sample frame to ESS lecture attendees at just three evening lectures (of the possible 10 lectures in the winter series). This choice was made as it would be prohibitively time consuming to survey a larger frame of the population.

Schedule

The research project will be completed during the duration of one semester (4 months). After the proposal is approved, there will be 3 weeks to conduct the survey, less than 6 weeks to complete the final report and display our findings. As the project moves forward, adjustments to the schedule will be made accordingly. A detailed proposed schedule of the project can be found in Appendix B.

Responsibilities:

Weekly Group Meetings: All group members must attend.
Progress Reports: Each group member is to inform other group members of their individual sections of the progress reports.
Clickers: Two group members will stand at the door at the beginning of the lecture and take count using a clicker.
Distributing questionnaire: Two group members must place a questionnaire on each chair before the ESS lecture begins.
Analysis of survey data: Team coding by two group members. Data entry by two group members. Software based statistical analysis by two group members.
Writing, editing of the final report: All group members will have assigned sections.
Pecha Kucha: All group members.

Budget

A funding proposal has been submitted to DSUSO requesting a total amount of $49.00 The total costs include the two clickers that need to be purchased ($14.00 each) and a $25.00 incentive for the survey participant. Otherwise, there are approximately of $300 (1500 sheets) for printing of the survey questionnaires. A detailed breakdown can be found in Appendix C.

Communication Plan and Deliverables

Final Class Deliverables

The final research project will be communicated in three different formats:

- Final written report (as specified by the guidelines in the class curriculum).
- Pecha Kucha presentation at the Grawood (scheduled for April 7th, 2015).
- An infographic or similar visual medium summarizing results and recommendations (located in an appendix of the final written report, with the objective to be printed or made accessible online).

These different formats will communicate the results of the research project to a wide range of audiences, including:

- Dalhousie University's College of Sustainability
- Academia
- Peers and Colleagues

- The population of Halifax, Nova Scotia, and potentially international audiences (via an online medium).

Executive Summary to the College of Sustainability

In addition to the deliverables listed above an executive summary will be compiled for the College of Sustainability. The executive summary will include a brief overview of the research project, results obtained through data collection and analysis, and recommendations for future ESS Lecture Series'. When ethics approval is processed, Debra Ross, responsible for Outreach and Partnership in the College of Sustainability, will be contacted. Debra is one of the main coordinators of the ESS Lecture Series'. Communication with Debra will be necessary for the execution of our research project. Debra Ross is authorized to grant permission to explain the research project and data collection method to the attendees of the selected ESS lectures, distribute the executive summary to faculty members and students of the College of Sustainability, and offer recommendations on the optimal distribution of the info graphic or other visual medium to reach a large audience.

Objectives

The objective of the final deliverables is to communicate the project results in a clear, concise, and appealing manner. When the final project is communicated in the three different formats listed above, it has the opportunity to reach a wide range of audiences.

The insights provided by our research and analysis of the ESS lecture series will benchmark Dalhousie University's College of Sustainability's success at engaging the community. The process of benchmarking is essential to attaining the goals of the College and will enable future data collection on this subject. The results will be useful for operational decision making related to the ESS lecture series.

The ultimate goal of this project is to positively impact the decision-making of university populations and more generally youth, adult, and elderly populations in regard to community engagement and environmental education. The information garnered by our report can be used to strategize future social capital strengthening endeavors. The communication tools listed above will assist in achieving this goal.

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