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Environmental Engagement: Examining Student Behaviour and Civic Engagement in Environmental Issues

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Examination of civic engagement among young adults has stressed the importance of participation and the need to engage with younger generations in a modern environment. In a survey study of 100 undergraduate students, the theory of planned behavior was used to predict engagement of students with contemporary environmental issues, and the effect of social networking usage upon engagement was examined. Findings underscore the importance of internal control and subjective norms on individual engagement, and highlight the positive effects of social networking usage on participation of undergraduate students. Discussion of results centers upon potential actionable methods which can increase engagement of undergraduate students in environmental issues through civic behaviours and participation.

Young adults of today are frequently seen as disengaged from civic behaviours. Often referred to as politically unmotivated, uneducated, and uninterested, it is feared that they will not acquire the habits of character necessary to live responsibly in a free society because they grow up without an understanding of the benefits, privileges, and duties of citizenship (Damon, 2011). The Center for Information & Research on Civic Learning & Engagement (CIRCLE) notes that "[t]he voices of young people are needed for deliberative democracy […] The expression of their views, whether through voting or other modes of engagement, is essential to ensuring the welfare of our society in the future" (Flanagan, Levine, & Settersten, 2009).

Through past research, the importance of youth engagement and civic involvement has been established. The aim of this study is to better understand the factors that contribute to students' engagement in civic behaviours, as well as the impact of technology on this type of engagement. Examination of civic engagement has repeatedly concluded that class differences, especially educational attainment, are prominent factors in all kinds of political engagement (Smith, 2013), as well as other aspects of social and civic engagement (Egerton, 2003). However, within the literature review conducted to this point, there is a lack of observation among students pursuing higher education to discover significant factors that determine their engagement.

This project will examine the topic of civic engagement in environmental issues within the university context in an attempt to identify and contribute to the discussion and examination of factors that cause student engagement. The theory of planned behaviour will be examined as the model to predict the behaviour, action, and engagement of undergraduate students. Additionally, an examination of the effects that social media networks exhibit upon university student engagement will be conducted.

Literature Review

Theory of Reasoned Action and Theory of Planned Behavior

The theory of reasoned action, as originally posited by Ajzen and Fishbein, outlines a theoretical construct which links individual motivational factors to the likelihood of performing a specific behaviour. The theory is based on an assumption that views an individual's intention to perform (or not perform) a behaviour as the immediate predictor of action (1980). An individual's intention is composed in two parts: a positive or negative evaluation of the performance of a behaviour, and perceived social pressures to perform (or not

perform) a behaviour. These two determinants are referred to as attitude toward the behavior, and subjective norm respectively (Ajzen & Fishbein, 1980). Building upon the theory of reasoned action, Ajzen further extended the model to address the theory of reasoned action's limitations in dealing with behaviours and situations in which people have incomplete volitional control (1991). The result of Ajzen's efforts was the theory of planned behavior.

Consistent with the model constructed with Fishbein, Ajzen's theory of planned behavior maintains that a central factor in determining an individual's action is the intention to perform a given behaviour. As the intention to engage in a behaviour increases, so does the likelihood of performance (Ajzen, 1991). Building upon the original framework provided by the theory of reasoned action, Ajzen introduces a third component which accounts for situations where the behaviour in question is not under complete volitional control: where the individual cannot decide to perform (or not perform) the behaviour at will. Examples of factors that could cause incomplete volitional control include lack of resources, skills, or the cooperation of others (Ajzen, 1991). In order to accommodate the existence of these situations, Ajzen introduced a third determinant of intention known as *perceived behavioral control* which refers to an individual's perception of the ease or difficulty of performing a target behaviour (1991).

Both the theory of reasoned action and theory of planned behavior have been used to explain variances in behavioural intention, as well as predictors of a number of different behaviours (Ajzen & Fishbein, 1980) including those related to consumer behaviour as well as voting behaviour in American and British elections (Montano & Kasprzyk, 2008). In their comparative examination of the two theories Madden, Ellen, and Ajzen (1992) illustrate that the theory of planned behavior is superior to the theory of reasoned action in predicting the performance of a target behaviour when behaviours are external to an individual's volitional control. Madden et al. further assert that their results "indicate that increased precision in the prediction of intentions and target behavior could be achieved by assessing

perceived behavioral control over the behavior" (1992).

As noted by Ajzen in his introduction of the theory of planned behavior, perceived behavioral control is most compatible with Bandura's concept of perceived self-efficacy. This concept is concerned with personal judgments of how proficiently one can complete certain actions required to deal with prospective situations (Ajzen, 1991). In order to fully understand the effect of perceived behavioural control on an individual's intentions and actions, it is also necessary to familiarize oneself with the concept of perceived self-efficacy and its impact on individual intention to perform a target behaviour.

Self-Efficacy

Self-efficacy, as observed by Bandura, has a key role in human functioning as it affects not only behavior directly, but also other determinants such as goals and aspirations, outcome expectations, and perception of impediments (2006). Efficacy beliefs affect individuals throughout varying spheres of functioning such as the creation of personal goals and challenges, their commitment to them, and decisions of which courses of action to pursue (Bandura, 2006). Through existing literature and extensive research, it has been shown that self-efficacy "is a key predictor of intentions and choice, as well as the persistence to complete a task" (Weber, Weber, Sleeper, & Schneider, p. 361, 2004).

Perceived self-efficacy and its influence on how individuals judge their ability to execute actions to deal with prospective situations "is not a global trait but a differentiated set of self-beliefs linked to distinct realms of functioning" (Bandura, p. 307, 2006). An individual's perceived self-efficacy will vary in regards to the behaviour in question and the domain of performance. Personal self-efficacy beliefs constitute a key factor of human agency. Bandura contends that if people do not believe they have the ability to achieve results, they will not attempt to make things happen (1997). Indeed it has been shown that higher levels of perceived self-efficacy result in greater performance accomplishment, and that people with a strong perceived efficacy are more likely

to persist in their efforts until they succeed (Bandura, 1982).

The impact of perceived self-efficacy on behavioural action has been well established and embedded within various domains of functioning. As noted by Weber et al. in their examination of self-efficacy towards service and civic participation among undergraduate business students, pedagogical methods have been adopted to "develop the student's self-efficacy towards service, which in later years will lead to yet more evidence of positive citizenship" (Weber, Weber, Sleeper, & Schneider, p.366, 2004). Perceived self-efficacy is well-matched to the notion of perceived behavioural control, and remains an accurate determinant of intention within the theory of planned behavior. Another key factor to examine is the role of the subjective norm towards intention, and the influence both extrinsic and intrinsic motivation play in representing this component within the theory of planned behavior model.

Extrinsic and Intrinsic Motivation

As noted above, the subjective norm determinant refers to perceived social pressures to perform (or not perform) a behaviour. This measure functions as a reflection of social influence upon the individual (Ajzek, 1985). Given the relative rarity of social pressure being exerted in an explicit or direct manner, and the difficulty of accurate measurements, researchers have suggested alternative conceptualizations for modeling intention (Armitage & Conner, 2001). Within the subjective norm, beyond perceived social pressures, there is also the role that an individual's extrinsic and intrinsic motivation plays on intention. Extrinsic motivation relates to an individual's drive to perform a target behaviour to achieve specific goals or rewards. Typical examples of extrinsic motivation include money, grades, and trophies or similar items of recognition. Alternatively, intrinsic motivation refers to perceptions of pleasure and satisfaction from performing the behaviour. The impact of intrinsic motivation on intention is associated with a belief that the target behaviour is inherently interesting or fulfilling for the individual and thus triggers action (Ryan & Deci, 2000).

Increasingly, researchers are viewing extrinsic and intrinsic motivation as conceptually similar, and highlight that "the same factors that may enhance intrinsic motivation by promoting feelings of self-determination can also promote self-determined extrinsic motivation (and vice versa)" (Sansone, p.446, 2000). Within a study of high school and college students and their perceived motivations to participate within community service activities, Jones and Hill (2003) note that internal influences play a key role in involvement, and claim that community service can impact the growth of a sense of self and social responsibility among individuals (p. 518). With regards to external factors of motivation, it was observed that individuals who participated solely for grades or requirements to graduate were unlikely to sustain participation and were only sporadically involved within their community (Jones & Hill, p.534, 2003).

Iyengar and Jackman reinforce the role intrinsic motivation plays within civic engagement in their examination of technology literacy as a potential political resource. They assert, citing the examples of Lepper et al. (1973) and their study of the detrimental effects of external rewards to pre-schoolers, that similarly "young people who encounter campaign information on their own accord and spend time interacting with political material may come to see themselves as interested in politics" which may then result in "more significant acts including registering to vote and discussing the campaign with parents or friends" (2003). Given the significant role that social pressures and motivational factors play within behavioural engagement, and the increasing availability of internet technologies, the need to examine the role these technologies play in student behaviour and engagement is evident. Key within this analysis is the need to understand the influence that such technologies exert on intention, and how it relates to Ajzen's theory of planned behavior.

Social Media Networks

The mass propagation and near ubiquity of Information and Communication Technologies (ICTs) continues to shape the interactions and experiences of individuals seeking information

and desiring participation. Due to the popularity of ICTs and the rise of the Internet, much of the information consumed daily is now accessed and created through mass collaboration and peer production. The usage of Internet technologies, specifically social media networks, has been a key tool leveraged by young adults both as a searching mechanism, and also a platform to broadcast political information (Kushin, 2009).

The potential of social media as a tool to build participation within politics, and bolster overall civic engagement amongst young adults was seen in the recent 2008 American election. Many claim that the victory of president Obama is due to the strategic and integrated use of social media networks such as Facebook, Twitter, and YouTube, which substantially affected the results (Cogburn & Espinoza-Vasquez, 2011). As noted by the Pew Research Centre for the People and The Press, 37% of those under the age of 30 said they received information regarding the campaign and its candidates from social networking sites, contrasted to just 5% of those above the age of 30 (2008). In his study of civic engagement and youth in the new information environment, Carpini concludes that the rise of new technologies provides the opportunity to reach out to young adults, while also reducing the barriers to entry for those who wish to become engaged and participate within their social or community sphere (2000).

The advent of modern Internet technologies, and the success of the 2008 Barack Obama election social media campaign, ignited interest in using innovative techniques to reach out to young adults in an attempt to engage them on key social issues within their communities. It has been argued that the effectiveness of leveraging social media networks in engaging young adults is not as successful as perceived. There are those who contend that social media networks simply promote 'weak ties', which are effective in attracting millions of visitors to a Facebook page, but are unable to to mobilize thousands of people to the streets to effect change or incite action (Obar, Zube, & Lampe, 2012). However, as noted by Valenzuela et al. in their study of college students' Facebook usage and overall participation, "Facebook can fulfill the information needs of users, [which is a key]

ingredient for strengthening weak ties and promoting collective action" (Valenzuela, Park, & Fee, p.881, 2009).

Regarding the role of social networking sites as an avenue to reach out to young adults and encourage civic engagement, Carpini asserts that social media networks serve to not only encourage young adults who are currently engaged, but also those who are interested but inactive, and those who are neither engaged nor clearly motivated (2000). The ability of social media networks to connect and reach out to such a broad audience provides an equalizing effect that reduces barriers to entry, and promotes continued interest and engagement from young adults. Among their analysis of online participatory culture and civic engagement, Kahne et al. propose that civic outcomes can be promoted through nonpolitical participatory activities online, and that online participation driven by political means bridges to broader civic and political involvement which can also be considered an important form of membership in its own right (Kahne, Lee, & Feezell, 2011). Additionally, in his study of psychological empowerment and Internet content, Leung notes that individuals who are highly involved within social networking sites score higher levels on the self-efficacy dimension than those who are less involved and that as more individuals feel that their social needs are satisfied by online content generation, they feel that they have greater control over what they do and when they do it (2009).

The role that social networking sites play in affecting perceived self-efficacy, attitudes, and motivations with regards to civic engagement continues to require further consideration. However, as the existing literature has shown, there is strong evidence to suggest a significant positive relationship between social networking usage and engagement among young adults exists. The ability to connect individuals to peers and referential others while also bolstering perceived self-efficacy and feelings of social inclusion provides substantial support for the use of social networking sites as an effective avenue to reach out to young adults and encourage engagement.

Statement of Hypothesis

The principal objective of this study was to examine which determinants of behavioural intention as outlined within the theory of planned behaviour have the greatest influence on the civic engagement of undergraduate students with regards to environmental issues. In addition to this, a sub-objective was to analyze the role of social media networks in the behaviour and engagement of students to determine if they are an effective tool to reach out to younger demographics. With respect to the above, the following hypotheses are formulated:

H_1: Attitude, subjective norms, and perceived behavioural control play an equivalent role in determining an individual's proclivity to engage in civic-minded activities to address environmental issues in their community.

H_2: Social media networks have a significant and positive influence upon student behaviour and civic engagement with regards to environmental issues.

Methods

A quantitative methodology was employed, and a survey was developed to collect data from the sample members (Appendix A – Survey Questionnaire). This method was appropriate for gaining information to answer the overall research question and testing the hypotheses.

Participants

Seven programs within the six general faculties of Ryerson University were included within the study. A response rate of 9.6% (100 students) was achieved (Appendix B – Coded Responses). The majority of respondents were female (60%). The average age range of respondents was 18-24 years (81%), with 10% who were 25 – 29 years of age, 8% 30 years or above and 1% 17 years and below. The single largest represented faculty was Engineering & Architectural Science (43%), followed by 32% Community Services, 14% Arts, 10% Ted Rogers School of Management, and 1% Communication & Design.

Materials

The questionnaire used in this study was developed to include items pertaining to the determinants of behavioural intention as modeled within the theory of planned behavior. Section One gathers demographic information. Sections Two, Three, and Four measure attitude, knowledge, and importance of environmental issues respectively through the use of a seven-point Likert scale. Measurements of self-efficacy within the sections were recorded on a 100-point scale representative of varying gradations of challenge in order to provide an accurate representation of respondent's perceived self-efficacy against increasing levels of task demand (Bandura, 2006). Section Five addresses the impact of social media in relation to the measures as listed above.

Procedure

The survey was distributed to students through department advisors in a weekly blast email format. Respondents were requested to anonymously and voluntarily complete the questionnaire online in order to enhance understanding of student environmental engagement at Ryerson University. Respondent anonymity was guaranteed.

Data Analysis

The statistical analysis of data was undertaken with SmartPLS 3 for Windows and examined the effects of attitude, subjective norms, perceived behavioural control, and social media networks on overall engagement.

Previous analysis of internal control determined a significant relationship between intrinsic motivation, perceived self-efficacy, and social media, necessitating an examination of these variables in relation to one another in addition to student engagement.

The equation modeling technique of Partial Least Squares (PLS) algorithm was calculated to assess the relation between the dependent engagement variable and independent determinant variables. Additionally, bootstrapping analysis between variables was computed to establish the variance in the model's proposed determinants.

Results

The calculation of the proposed model (Figure C) can be assessed in the context of the study's hypotheses:

H_1: Attitude, subjective norms, and perceived behavioural control play an equivalent role in determining an individual's proclivity to engage in civic-minded activities to address environmental issues in their community.

H_2: Social media networks have a significant and positive influence upon student behaviour and civic engagement with regards to environmental issues.
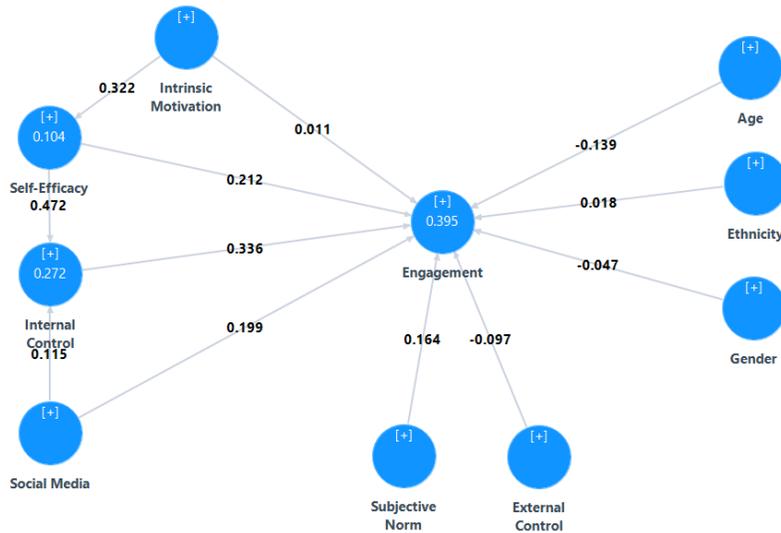

Figure 1. Calculated PLS relationship among variables and engagement.

In examination of the determinants of the theory of planned behavior (attitude, subjective norms, and perceived behavioral control/self-efficacy) towards undergraduate student engagement, there is a lack of equivalent significance between the variables on measured engagement. The results provide moderately significant support for the influence of subjective norms on student engagement, $t(98) = 1.44, p < .1$, while highlighting the importance of perceived self-efficacy upon internal control, $t(98) = 4.73, p < .001$, and the resulting relation between internal control and engagement, $t(98) = 1.98, p < .05$.

Within the examination of social media networks and their influence upon student behaviour and civic engagement, there is evidence to support a moderately significant relationship between social media usage and engagement, $t(98) = 1.86, p < .1$. Social media usage does not appear to have a statistically significant impact upon student's internal control.

The inclusion of control variables assessing the influence of demographics within the model exert no significant impact upon overall student engagement.

Discussion

The aim of this study was to gain a better understanding of factors that incite civic engagement amongst undergraduate students in environmental issues. To this end, the study focused on two aspects: the impact of determinants towards behavioural intention, and the impact modern Internet technologies, namely social media networks, have on intention and engagement.

The analysis conducted supports a viewpoint that engagement factors are equivalent across age, gender, and ethnicity

within the university context. The demographic control factors included within this study exerted a negligible influence on individual engagement with environmental issues.

Notable within the analysis of data is the significant impact of both internal control and subjective norms (i.e. perceived social norms and opinions of referent others) on an individual's engagement. This observation aligns closely with the viewpoint that university students, and young adults in general, are highly receptive to the influence and opinions of peers and adults within their community (Wilks, 1986). The substantial impact of internal control upon engagement (and strong relation between perceived self-efficacy and internal control) underscores the necessity to create knowledge delivery methods which can build students' understanding of environmental issues, as well as bolstering their perceived capability.

Furthermore, the importance of social networking site usage has been illustrated through its overall impact on engagement. The results support existing research which concludes that "informational use of [social networking sites exerts] a significant and positive impact on individuals' activities aimed at engaging in civic and political action" (Zuniga, 2012). The findings also lend support to that claim that "participation in interest-driven and politically driven online activities appears to provide generative contexts for civic and political development" (Kahne, Lee, & Feezell, 2011). Evident within this analysis is the increasing importance and positive influence which social media networks play on undergraduate student engagement with environmental issues.

The close ties measured between social networking sites and engagement highlight the growing need to further examine the role of social media among university students and its ability to impact participation in politics and overall civic engagement. The results given suggest social networking sites play a role in providing greater ease of access to information for young adults, impacting their overall civic engagement with environmental issues. Prior research has also shown that "increased information exchange among online participants typically helps build trusting relationships along

with members" (Zuniga, 2012). Overall, the results support a view that social networking sites are effective tools to support engagement through knowledge-sharing as well as providing individuals with access to civic-minded role models and peers, lending a greater influence towards engagement.

Given the close relationship between perceived self-efficacy and subjective norms, the need to impart a strong belief of capability to students along with access to information, and civic-minded role models is apparent. Considering the significance of subjective norms, a key avenue to provide students with both a high perceived self-efficacy as well as the explicit knowledge necessary to become engaged is possibly through the involvement of professor to student interaction, as well as offering courses which focus on contemporary environmental issues. Within these courses an emphasis on information delivery, as well as possible avenues of action to engage can foster growth in students' self-belief, their own perceived behavioural control in environmental issues within their communities, and will lend encouragement to inciting engagement through action.

Limitations

Given the nature of the collection method, one limitation within this study was the reliance on the self-reporting of students' engagement behaviours. There is the possibility that the results collected represent what respondents believed was desired of them, rather than accurate behavioural assessments. Ideally, one would be able to collect and examine data based on actual activity and through a personal interview process.

In addition, the measurements of student attitudes towards engagement were limited through wording constraints within the survey. It was determined that the questions intended to assess students' attitudes focused on governmental policy change, which ultimately was unrelated to the self-reported behaviours to assess engagement. Therefore, attitude measures were not included within the model of analysis as no conclusive significant relationship could be drawn.

Despite these limitations, the resulting analysis yields results that sustain existing research, supporting both the effectiveness of the theory of planned behavior as a predictive model of intention and overall behaviour, as well as the increasing importance of social networking sites as an avenue to promote engagement and participation among young adults.

Conclusion

This study examined the individual importance of the determinants of intention as outlined within the theory of planned behavior, and also studied the role social media networks have upon student behaviour and civic engagement with regards to environmental issues. Based on a survey among undergraduate students from varying academic backgrounds, strong evidence was shown for a positive relation between internal control and social networking sites to student engagement. Also shown was the influence of intrinsic motivation towards perceived self-efficacy, and perceived self-efficacy's strong relation to internal control, suggesting the growing importance of information sharing and provisioning targeted towards undergraduate students.

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Appendix A

Survey Questionnaire

Following below is a copy of the survey distributed to undergraduate students at Ryerson University through weekly email blasts from program advisors. Respondent's anonymity was guaranteed.

This survey intends to examine university student engagement with government policies on environmental issues, examples of which include the Keystone XL pipeline, the removal of blanket protection on Canadian waterways, and the recent job reductions at Environment Canada.
Your answers will enhance understanding of media consumption concerning environmental issues amongst students at Ryerson University.
Your responses will remain anonymous. For any questions or concerns please email xminoche@ryerson.ca.

Demographics
Faculty (drop-down)   Gender: M/F/Other: define
Age: 17 and below   18-24   25-29   30 and above
Ethnicity (drop-down)

Please answer the following by ranking how strongly you agree with the statements below:
Strongly Agree (7), 6, 5, Undecided (4), 3, 2, Strongly Disagree (1), Don't Know/Care (0)

Attitude
1. I believe it is important to be engaged within government policy discussions on environmental issues
2. I believe government policy change is the best mechanism to address environmental issues
3. People important to me (family, friends, profs, etc.) think it is valuable to be engaged with government policy discussions on environmental issues
4. People important to me encourage me to share my opinions on government policies in relation to environmental issues
5. My peers encourage me to share my opinions on government policies in relation to environmental issues
6. I believe I can make a difference in environmental issues that matter to me
On a confidence scale 0-100; 0 not at all, 50 moderately can do, 100 highly certain can do
- at my university
- in my city
- in my province
- in Canada
Knowledge
7. I have enough knowledge to get involved in government policy in relation to environmental issues (voting, attending rallies, contacting officials, etc.)
8. When asked, I am able to articulate my stance on a current environmental issue and how it is related to government policies
9. If I am unclear about an environmental issue, I can discuss and clarify its details with my _____:
On a confidence scale 0-100; 0 not at all, 50 moderately can do, 100 highly certain can do
- peers
- parents
- professors
- government representative

10. I believe politicians or political organizations are willing to hear my opinion on environment-related government policy

11. I have access to resources that help me understand contemporary environmental issues in Canada (articles, industry stats, access to scientific studies, etc.)

12. I can approach my local councillor/political member for assistance in understanding government policy in environmental issues

Importance

13. I believe being involved in the democratic process at any level with regards to environmental issues is inspiring for university students

14. I believe being involved in the democratic process at any level with regards to environmental issues is fulfilling for university students

15. I believe it is my responsibility to participate within the democratic process at some level to address environmental issues in Canada

Social Media

16. Social media has made it easier to become engaged in environmental issues

17. Social media is the best way for an individual to reach out to university students in relation to environmental issues

18. The government/environmental groups effectively use social media to engage university students on government policy discussions on environmental issues

19. I feel confident using social media to gather news and information in regards to government policy on environmental issues

20. What percentage of your time on social media is spent on learning/engaging with environmental issues:

0, 0 - 20, 20-40, 40-50, 50-60, 60-80, 80-100

21. I can use social media to stay updated with government policy on environmental issues

22. Do you stay updated with political news through: (Circle all that apply)

      a) news sites   b) social media exclusively   c) news sites social media accounts

      d) friends   e) newspapers/radios   f) tv   g) don't know/care   h) other: please specify

23. In the past 6 months, have you done any of the following? (check all that apply):

Activity	Never (1)	2	3	Sometimes (4)	5	6	Regularly (7)
Attended a political meeting (local, town, school, online stream)							
Attended a rally or protest							
Signed a petition online or paper							
Contacted a government official about an issue important to you							
Like/Share material related to an environmental issue							
Post your own thoughts/comments on an environmental issue							
Encouraged others to engage with an environmental issue							