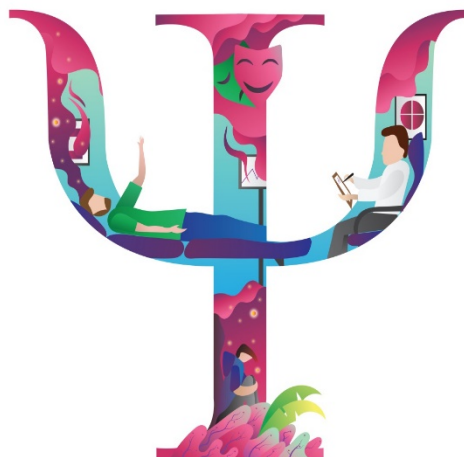




Research Competencies Portfolio and Reflective Log



MSc Applied Social and Health Psychology



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Evidence A: Expression of Interest form

Version 1

MSc Professional Research Skills 2019-20 Project Specification: Expression of Interest Form

Project Title: Connectedness to nature, social media use and altruism as a predictors of pro-environmental behaviours.

Brief lay description of the purpose of the project (200 words max):

Climate change is a global concern and a current "hot topic" throughout the psychological literature and an abundance of research has been undertaken trying to explain or predict pro-environmental behaviour (PEB). However, there seems to be a literature gap regarding individualistic motivations for pro-environmental behaviours.
Specific objectives are to: can you think this through a little more?

Summary of proposed methodology (how the work is going to be carried out, including a description of your target participants and recruitment plan): (400 words max)

This study proposes the use of online quantitative data collection through the online package Qualtrics. Participants will initially be targeted for recruitment through Facebook and Twitter with the researchers posting a link to invite individuals to partake in an online survey on a voluntary basis. The link will direct participants to Qualtrics where they will be presented with study information and a consent form. Providing that participants give consent; they will subsequently be directed to the questionnaire; access to the questionnaire will be available for a period of three weeks due to the data collection time constraints within this study.

The SRT involves four components and this study plans to measure each component as an individual construct in addition to measuring the predictive value of the theory through regression? Pallant (2010) suggests that 15 participants are needed for each predictor variable, so the study aims to target 240 participants in order to gain a minimum final sample of 60 participants based on a 25% response rate. To be eligible to take part in the questionnaire, participants must live in the UK as this is the target audience. Participants will be required to read the information sheet and consent form before answering questions regarding their eligibility. As this will be administered online, the system will be set up to ensure that any individuals who respond 'no' to 'Do you live in the UK?' will not be directed to the questionnaire and will instead be taken to a page displaying a message explaining that they do not meet the inclusion criteria to partake in the study.

The questionnaire will take approximately 15 minutes to complete. The initial questionnaire will be piloted as a paper version and administered to an opportunity sample of university students during a university workshop. Students will be asked to report any issues they encounter when completing the questionnaire (such as not understanding the questions?) and use an evaluation form to include any further comments to be fed back to the research team. The reliability of the scale will be assessed by the researchers and the final amended version of the questionnaire will be piloted once more by another opportunity sample to ensure any issues have been resolved before making the online version live and commencing data collection. This phase of data collection will then run for a maximum of three weeks. The quantitative data will be downloaded into SPSS for the purpose of regression analyses.

Here, we really struggled to synthesise our individual previous research into a coherent project focus.

As a group, we were very confused about what we actually wanted to explore. We had an initial idea to explore Self-Regulation Theory as it applies to pro-environmental behaviours.

We were unsure about how to measure the constructs of SRT and PEBS and needed to undertake more research as a team to figure this out.

As a team, we decided to focus the research on a UK population, but we did not have a reasonable justification for this at the time.

The outline of the study protocol and method was discussed together in a group, and we decided that we would aim to undertake a two-phase pilot test in order to ensure that the final version of the questionnaire was reliable and had good validity.

What are the expected outputs from this project what will this project achieve and how will you show this?) (200 words max)

The project is hoped to result in enhanced understandings of the cognitive processes that underly environmentally positive behaviour. This could add to the growing body of research surrounding the topic, and aid in future initiatives intended to improve levels of pro-social behaviour throughout society.

I took the lead on writing this section, while xx assisted with wording, as it was difficult to correctly phrase our goal.

Outline the key ethical and data protection considerations from this project? (200 words max)

In accordance with BPS's (2018) code of ethics and conduct, Code of Human Research Ethics (BPS, 2014) and UWTSD Research Ethics and Integrity Code of Practice (2017). Signed, online, informed consent will be required for all participants. Participants will be informed via the online consent form that their participation is entirely voluntary and that they have the right to withdraw at any time. An online debrief form will be presented to each participant. The debrief form will provide details on how to contact the researchers should the participant have any questions or queries regarding the study. Should a participant experience distress from being required to process information regarding environmental responsibility. Contact details for the research team will be provided on the debrief form. To maintain anonymity, participants will automatically be assigned an ID number via Qualtrics and only anonymised data will be available for the research team to analyse. A potential risk to the researchers is unkind communications from participants, to minimise this risk all communications must go through the university email provided, and be addressed by the research team.

xx took the lead in writing this section and was the first of the team to research and read the ethical guidelines listed in the text.

Five key primary references

Baumeister, R.F., Vohs, K.D. (2007). Self-regulation ego depletion and motivation. *Social and personality psychology compass*, 1(1).

Baumeister, R.F., Vohs, K.D., DeWal, C.N., Zang, L. (2007) How emotion shapes behaviour: feedback, anticipation and reflection, rather than direct causation. *The personality and social psychology review*, 11, 167-203.

Schwartz, S.H. (1977). Normative influence on altruism. *Advances in experimental social psychology*, 10, 221-279.

Hall, P. and Fong, G. (2007). Temporal self-regulation theory: A model for individual health behavior. *Health Psychology Review*, 1(1), pp.6-52.

Expression of Interest form

Final Version

MSc Professional Research Skills 2019-20 Project Specification: Expression of Interest Form
Project Title: Exploring connectedness to nature, social media engagement and altruism as predictors of pro-environmental behaviours in a Welsh population.
Brief lay description of the purpose of the project (200 words max): Climate change is a global concern and a current “hot topic” throughout the psychological literature. Research shows that our behaviour is a major contributing factor. Figures such as Greta Thunberg and David Attenborough are widely reported in the media, trying to engage the public in pro-environmental behaviours (PEB). We would like to support this movement through psychological research. An abundance of research has been undertaken trying to explain or predict pro-environmental behaviour (PEB). However, there seems to be a literature gap regarding individualistic motivations for pro-environmental behaviours. Mayer and Frantz (2004) found that connection to nature is an important predictor of PEB. This stemmed our interest in exploring other possible predictors of PEB. Research also shows that social media engagement can be a strong predictor of other forms of behaviour (Wright et al, 2013) and we are interested in how this applies to PEBs. Finally, true altruism is a widely debated topic that has high relevance to PEB (Schwartz, 1977), and we wanted to explore whether/how much altruism can account for peoples PEBs.
Summary of proposed methodology (how the work is going to be carried out, including a description of your target participants and recruitment plan): (400 words max) The design of the study is an online cross-sectional regression design, exploring the extent to which the connectedness to nature (CNS), social media engagement and altruistic factors can explain engagement in PEB, both as individual factors and as a combined model. Specific hypotheses for the study are: 1. High CNS scores will predict high levels of PEB. 2. High levels of altruism will predict high levels of PEB. 3. High levels of social media engagement will predict high levels of PEB. This study proposes the use of online quantitative data collection through the online package Qualtrics. Participants will initially be targeted for recruitment through Facebook and Twitter with the researchers posting a link to invite individuals to partake in an online survey on a voluntary basis. The link will direct

After more thorough research as a team, we decided to change our project focus to the one outlined here.

We realised that each team member had different ideas about what we should explore. We decided to each research the construct we were interested in and utilise the three into our own combined model. **xx** researched altruism, **xxx** researched connectedness to nature, and I researched social media.

Due to our more stringent research, we now felt much more able to explain what we wanted to specifically explore.

On the advice of Ceri and Paul (Research supervisors), we decided to use Qualtrics to collect and store our data.

participants to Qualtrics where they will be presented with study information and a consent form. Providing that participants give consent; they will subsequently be directed to the questionnaire; access to the questionnaire will be available for a period of three weeks due to the data collection time constraints within this study.

I did not contribute to this section of the form, XXX collaborated to research and calculate the sample size we would aim for.

Pallant (2010) suggests that 15 participants are needed for each predictor variable, so the study aims to target 180 participants in order to gain a minimum final sample of 45 participants based on a 25% response rate. To be eligible to take part in the questionnaire, participants must live in the UK as this is the target audience. Participants will be required to read an online information sheet and consent form before answering questions regarding their eligibility. As this will be administered online, the system will be set up to ensure that any individuals who respond 'no' to 'Do you live in Wales?' will not be directed to the questionnaire and will instead be taken to a page displaying a message explaining that they do not meet the inclusion criteria to partake in the study.

We decided against using a UK-wide sample, and instead chose to concentrate on Wales only. This was due in part to differing environmental legislation between England and Wales.

The questionnaire will take approximately 15 minutes to complete. The initial questionnaire will be piloted online administered to an opportunity sample of university students during a university workshop. Students will be asked to report any issues they encounter when completing the questionnaire (such as not understanding the questions, or technical issues) and use an evaluation form to include any further comments to be fed back to the research team.

The outcome variable is the level of engagement with environmentally friendly behaviours, measured by the Recurring Pro-environmental Behaviour Scale (PEBS; Brick, Sherman & Kim, 2017). This 21-item scale includes items such as "How often do you carry a reusable water bottle?"

The predictor variables are:

Connectedness to nature; measured by the Connected to Nature Scale (CNS; Mayer & Frantz, 2004). This 14-item scale includes statements such as, "I often feel a kinship with animals and plants".

XXXX found and researched this scale independently.

Altruism: This will be measured by an adapted version of the Self-report Altruism Scale (Rushton, 1981). This 20-item scale has been adapted previously. In this study, it will be adapted to fit a more current context, it includes statements such as, "I have given money to a charity".

XXX found and researched this scale independently.

Engagement with social media; This will be measured using the Social Media Usage and Integration Scale (SMUIS, Wright et al, 2013). This scale will not only capture the amount of time a participant spends on social media platforms, but their social and emotional reasons for doing so. The 10-item scale is adaptable to various forms of social media and includes statements on a 6-point likert scale, such as: "I would like it if everyone used social media to communicate" or "I get upset when I can't log in to my social media account".

I found and researched this scale independently.

Age, gender and education level will also be collected as demographic variables.

The reliability of each scale will be assessed by the researchers and piloted online. The final amended version of the questionnaires will be given to participants via Qualtrics. This phase of data collection will then run for a maximum of three weeks. The quantitative data will be downloaded into SPSS for the purpose of regression analyses.

We decided to pilot only once, due to time constraints.

What are the expected outputs from this project (what will this project achieve and how will you show this?) (200 words max)

The project is hoped to result in enhanced understandings of the social and cognitive factors that underly environmentally positive behaviour. This could add to the growing body of research surrounding the topic, and aid in future initiatives intended to improve levels of pro-social behaviour throughout society.

Outline the key ethical and data protection considerations from this project? (200 words max)

In accordance with BPS's (2018) code of ethics and conduct, Code of Human Research Ethics (BPS, 2014) and UWTSD Research Ethics and Integrity Code of Practice (2017). Signed, online, informed consent will be required for all participants. Participants will be informed via the online consent form that their participation is entirely voluntary and that they have the right to withdraw at any time. An online debrief form will be presented to each participant. The debrief form will provide details on how to contact the researchers should the participant have any questions or queries regarding the study. Should a participant experience distress from being required to process information regarding environmental responsibility. Contact details for the research team will be provided on the debrief form. To maintain anonymity, participants will automatically be assigned an ID number via Qualtrics and only anonymised data will be available for the research team to analyse. A potential risk to the researchers is unkind communications from participants, to minimise this risk all communications must go through the university email provided and be addressed by the research team.

Five key primary references

Schwartz, S.H. (1977). Normative influence on altruism. *Advances in Experimental Social Psychology*, 10, 221-279.

Hall, P. and Fong, G. (2007). Temporal self-regulation theory: A model for individual health behaviour. *Health Psychology Review*, 1(1), pp.6-52.

Harland, P., Staats, H. and Wilke, H. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behaviour: questions derived from norm-activation theory. *Basic and Applied Social Psychology*, 29(4), pp.323-334.

Mayer, S.F. and Frantz, C.M. (2004). The connectedness to nature scale: a measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24, 503-515.

Schwartz, S.H. (1977). Normative influence on altruism. *Advances in experimental social psychology*, 10, 221-279.

Schultz, P. W., Shriver, C., Tabanico, J., & Khazian, A. (2004). Implicit connections with nature. *Journal of Environmental Psychology*, 24, 31-42.

Wright, S.L., Jenkins-Guarnieri, M.A. & Johnson, B. (2013). Development and validation of a social media use integration scale. *Psychology of popular media culture*, 2(1), 38.

Using XXXXs previous research, the three of us then worked as a team to consider the entirety of the possible issues that could occur, and how to prevent them. We also decided to remove the explanation about Qualtrics' participant numbering system as it seemed extraneous on the

We had significantly more references than the first form, possibly because we had undertaken more rigorous and extensive research on this (more interesting) research topic.

Evidence A: Application for Ethical Approval

Version 1

SECTION E: Details of Research Activity

Indicative title:	Exploring connectedness to nature, social media use and altruism as predictors of pro-environmental behaviour in a Welsh population.		
Proposed start date:	01/02/20	Proposed end date:	31/12/20

Introduction to the Research (maximum 300 words)

Ensure that you write for a **Non-Specialist Audience** when outlining your response to the three points below:

- Purpose of Research Activity*
- Proposed Research Question*
- Aims of Research Activity*
- Objectives of Research Activity*

Demonstrate, briefly, how **Existing Research** has informed the proposed activity and explain

- What the research activity will add to the body of knowledge*
- How it addresses an area of importance.*

Purpose of Research Activity

Climate change is a global concern and a current "hot topic" throughout the psychological literature. Research shows that behaviour is a major factor contributing to global warming. Figures such as Greta Thunberg and David Attenborough are widely reported in the media, trying to engage the public in pro-environmental behaviours (PEBs). It is therefore imperative that psychological explorations of Pro-environmental are undertaken to further the possibility of reducing climate change.

Mayer and Frantz (2004) found that connection to nature is an important predictor of PEB. This stemmed the researchers' interest in exploring other possible predictors of PEB. Research also shows that social media engagement can be a strong predictor of other forms of behaviour (Wright et al, 2013) and it could be important to explore how this concept could be applied to PEBs. Finally, true altruism is still a widely debated topic that has high relevance to PEB (Knez, 2016), and we wanted to explore whether/how much altruism can account for peoples PEBs, specifically in Wales, where there is a higher rate of recycling etc (Gallagher et al, 2019)

Research Question

This study hopes to explore the extent to which participants' (a) connectedness to nature, (b) altruism and (c) social media engagement can predict their pro-environmental behaviours.

Aims of Research Activity

The aims of this study are to explore three specific hypotheses. Namely:

- High connectedness to nature will predict higher levels of pro-environmental behaviour
- High levels of altruism will predict higher levels of pro-environmental behaviour
- Engagement with social media will predict participants' level of pro-environmental behaviour.

Objectives of Research Activity

Please see above. This study will provide further understandings of how each concept can predict pro-environmental behaviours individually, and as a combined model.

The project is hoped to result in enhanced understandings of the social and cognitive factors that underly environmentally positive behaviour. This could add to the growing body of research surrounding the topic, and aid in future initiatives intended to improve levels of pro-social behaviour throughout society.

The title of the project was agreed upon as a group, with feedback from Ceri to keep the title relatively short but informative.

After the initial hurdles of not knowing exactly what we wanted to study, the discussions we had had during the writing of the expression of interest form really solidified our plans. We utilised some of the same wording from our Ethical Approval application.

These predictions were based on the pre-existing scoring protocols for each scale we individually researched.

Proposed methods (maximum 600 words)

Provide a brief summary of all the methods that **may** be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed.

(this box should expand as you type)

Location of research activity

Identify all locations where research activity will take place.

Online questionnaires to be conducted through Qualtrics – no physical data collection.

(this box should expand as you type)

Research activity outside of the UK

If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants.

The design of the study is an online cross-sectional regression design, exploring the extent to which the connectedness to nature (CNS), social media engagement and altruistic factors can explain engagement in PEB, both as individual factors and as a combined model.

This study proposes the use of online quantitative data collection through the online package Qualtrics. Participants will initially be targeted for recruitment through Facebook and Twitter with the researchers posting a link to invite individuals to partake in an online survey on a voluntary basis. The link will direct participants to Qualtrics where they will be presented with study information and a consent form. Providing that participants give consent, they will subsequently be directed to the questionnaire; access to the questionnaire will be available for a period of three weeks due to the data collection time constraints within this study.

Pallant (2013) suggests that 15 participants are needed for each predictor variable, so the study aims to target 180 participants in order to gain a minimum final sample of 45 participants based on a 25% response rate. To be eligible to take part in the questionnaire, participants must live in the UK as this is the target audience. Participants will be required to read an online information sheet and consent form before answering questions regarding their eligibility. As this will be administered online, the system will be set up to ensure that any individuals who respond 'no' to 'Do you live in Wales?' will not be directed to the questionnaire and will instead be taken to a page displaying a message explaining that they do not meet the inclusion criteria to partake in the study.

The questionnaire will take approximately 15 minutes to complete. The initial questionnaire will be piloted online administered to an opportunity sample of university students during a university workshop. Students will be asked to report any issues they encounter when completing the questionnaire (such as not understanding the questions, or technical issues) and use an evaluation form to include any further comments to be fed back to the research team.

The outcome variable is the level of engagement with environmentally friendly behaviours, measured by the Recurring Pro-environmental Behaviour Scale (REBS; Brick, Sherman & Kim, 2017). This 21-item scale includes items such as "How often do you carry a reusable water bottle?"

The predictor variables are:

Connectedness to nature; measured by the Connected to Nature Scale (CNS; Mayer & Frantz, 2004). This 14-item scale includes statements such as, "I often feel a kinship with animals and plants".

In this initial draft, we accidentally placed the information needed for this section into "research activity outside of the UK" below.

Earlier in the research process, myself and XXX had discussed what approach would best fit our exploration and landed on a multiple regression analysis.

Qualtrics was suggested by our Research supervisors to be a robust and appropriate data collection tool, so we decided to utilize it for this study

As a team, we all had input in deciding what the outcome measure should be and decided that instead of focusing on one or two environmentally friendly behaviours, we wanted to measure PEBs more comprehensively. This scale was found by Sarah, and we all agreed it encompassed a broad enough spectrum of PEBs to suit our needs.

Altruism: which will be measured by an adapted version of the Self-report Altruism Scale (Rushton, 1981). This 20-item scale has been adapted previously. In this study, it will be adapted to fit a more current context, it includes statements such as, "I have given money to a charity".

Engagement with social media; This will be measured using the Social Media Usage and Integration Scale (SMUIS, Wright et al, 2013). This scale will not only capture the amount of time a participant spends on social media platforms, but their social and emotional reasons for doing so. The 10-item scale is adaptable to various forms of social media and includes statements on a 6-point likert scale, such as: "I would like it if everyone used social media to communicate" or "I get upset when I can't log in to my social media account".

Age, gender and education level will also be collected as demographic variables.

The reliability of each scale will be assessed by the researchers and piloted online. The final amended version of the questionnaires will be given to participants via Qualtrics. This phase of data collection will then run for a maximum of three weeks. The quantitative data will be downloaded into SPSS for the purpose of regression analyses.

(this box should expand as you type)

The team decided to also collect demographic data, not only because this is good practice, but could possibly provide insight into whether these factors are also related to PEBs.

Initially, myself and **XXX** thought that we would not be distributing the questionnaire to staff and students, forgetting that this was how we planned to pilot. We amended this in our final version.

SECTION G: Intended Participants

Who are the intended participants?	YES	NO
Students or staff at the University?	☐	☒
Adults (over the age of 18 and competent to give consent)?	☒	☐
Vulnerable adults?	☐	☒
Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
Prisoners?	☐	☒
Young offenders?	☐	☒
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
People engaged in illegal activities?	☐	☒
Others (please identify specifically any group who may be unable to give consent) please indicate here and tick the appropriate box.	☐	☒
Other – please indicate here:		

(this box should expand as you type)

Participant numbers and source

Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?

How many participants are expected?	Pallant (2013) suggests that 15 participants are needed for each predictor variable, so the study aims to target 240 participants <u>in order to gain a minimum final sample of 60 participants based on a 25% response rate. (varying response rates reported online – we're not sure how to decide which one to guide us)</u> (this box should expand as you type)
Who will the participants be?	Welsh population with access to the internet. They will be recruited via the university twitter page and the researchers' Facebook pages, via snowball sampling. (this box should expand as you type)
How will you identify the participants?	Prior to the participant taking part in the online questionnaire/s, they will be asked for demographic information and this will allow for participants to be included or excluded dependent on the <u>criteria</u>: - location (UK-based only) - age (18+ only) (this box should expand as you type)

Our group had clashed during this discussion about the typical response rate shown by previous literature. We took this to our supervisor who advised us to research further as a group.

We all agreed that as younger people might not engage consciously with PEBs, we would concentrate on an adult sample for this project.

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.					
Full risk assessment completed and appended?	<table border="1"> <tr> <td>Yes</td> <td>☒</td> </tr> <tr> <td>No</td> <td>☐</td> </tr> </table>	Yes	☒	No	☐
Yes	☒				
No	☐				
Risks to participants For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information					
Risk to Participant: 1. A participant may experience distress by feeling that they do not engage in "enough" pro-environmental behaviours. 2. A participant's data will be collected by the <u>researchers</u> , and could be at risk of <u>exploitation</u> . <i>(this box should expand as you type)</i>	How will you mitigate the Risk to <u>Participant</u> 1. Contact details for the research team will be provided on the debrief form, and researchers will be available to signpost participants to relevant support such as (for example): local government websites These organisations would also be linked to, in the client debrief. 2. All data will be anonymised and secure via the programme Qualtrics. <i>(this box should expand as you type)</i>				
If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or <u>actually illegal</u> is discovered in the course of a project, it may need to be disclosed to the proper authorities					
This study does not include sensitive/upsetting topics. <i>(this box should expand as you type)</i>					
Risks to investigator For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest					
Risk to Investigator: Potential for harassment or unwanted communications from participants, as researchers contact details are provided. <i>(this box should expand as you type)</i>	How will you mitigate the Risk to <u>Investigator</u>: To minimise this risk all communications will be directed through the university email system (not personal email addresses) and any communications will be addressed by the whole research team. Issues will also be mitigated by the researcher's regular engagement with the supervisory researchers for support and advice. <i>(this box should expand as you type)</i>				
University/institutional risks For example: adverse publicity, financial loss, data protection					
Risk to University: It is not anticipated that there will be any risk to the university in the conduct or dissemination of the research due to the study. Any possible unexpected issues will be raised with the head of school, Dr Ceri Phelps.	How will you mitigate the Risk to the <u>University</u>: N/a <i>(this box should expand as you type)</i>				

We decided to make ourselves contactable by participants to lessen the possibility of a negative experience for anyone who takes part. We wanted to take accountability for any issues raised and were also proud to be recognised as contributors to the research.

XXX and I considered including something in this section regarding the fact that environmental issues can be politically charged, and possibly a sensitive subject in that regard. However, we concluded that this study did not explore that facet of PEBs to a potentially

We decided that should any member of the team be contacted by a participant, that the individual would immediately bring the correspondence to the other four to address together.

SECTION I: Feedback, Consent and Confidentiality

Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
Participants will be provided with an online debrief sheet following the study, explaining the reasons for the <u>research</u> and reminding them of their right to withdraw up until this specific point (before the anonymisation of data through Qualtrics). Participants will be provided with the contact details for the research team, and relevant organisations to support the participants if they experience any distress or want further information.
<i>(this box should expand as you type)</i>
Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
Participants will be provided with an online form, created by the researchers, explaining the purpose of the research, the participants' right to withdraw, and how long the study is expected to take. Instructions on how to complete the questionnaires will also be provided to participants.
<i>(this box should expand as you type)</i>
Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
<i>(this box should expand as you type)</i>
Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
All quantitative data will be collected anonymously through Qualtrics and subsequently stored in an electronic document for confidentiality purposes.

Much of the information regarding the feedback, consent and confidentiality of participants was agreed upon by the three of us. In order to discuss the steps we were going to take, we first created a dummy study in Qualtrics to explore our options for online consent/debrief etc.

SECTION J: Data Protection and Storage

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.	☒	☐
If YES, provide a description of the data and explain why this data needs to be collected:		
The data being collected will be numerical data that can then be analysed via statistical software. There will be two questionnaires, both of which will collect quantitative, numeric data. One will collect demographic data and will ask participants about their engagement with pro-environmental behaviour. The second questionnaire will explore a participants' self-regulation concepts. These data will be anonymised via the online programme Qualtrics, with each participant being assigned a unique identification number, which will not be able to be linked back to a specific individual. <i>(this box should expand as you type)</i>		
Does it involve special category data (as defined by the GDPR)?	YES	NO
"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes).	☐	☒
If YES, provide a description of the special category data and explain why this data needs to be collected:		
<i>(this box should expand as you type)</i>		
Will the research activity involve storing personal data and/or special category data on one of the following:	YES	NO
Manual files (i.e. in paper form)?	☐	☒
University computers?	☐	☒
Private company computers?	☐	☒
Home or other personal computers?	☐	☒
Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
"Cloud" storage or websites?	☒	☐
Other – specify:	☐	☒

In this section, we were slightly careless and had mistakenly inserted a section of an early EOI form, that did not match our proposed study. This mistake taught us that completing an ethics approval application is not about "ticking boxes" but about seriously and carefully considering the impact the study could possibly have on others.

For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of password protection, encryption, anonymisation and pseudonymisation:

The data collected through online questionnaires, including participant consent forms, will be stored on Qualtrics. Data will only be accessed by the research team and will be password protected. The data will be anonymised through Qualtrics assigning each participants data an ID number. (this box should expand as you type)

All Data Storage

Will the research activity involve any of the following <u>activities</u> :	YES	NO
Electronic transfer of data in any form?	☒	☐
Sharing of data with others at the University?	☐	☒
Sharing of data with other organisations?	☐	☒
Export of data outside the European Union or importing of data from outside the UK?	☐	☒
Use of personal addresses, postcodes, faxes, <u>emails</u> or telephone numbers?	☐	☒
Publication of data that might allow identification of individuals?	☐	☒
Use of data management system?	☒	☐
Data archiving?	☒	☐

If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and DPA (and/or any international equivalent):

In accordance with the GDPR and DPA, data will be transferred electronically from Qualtrics to SPSS to run statistical analysis. The data will remain anonymous. The use of a data management system will be in place in the form of Qualtrics. Data will be archived.
(this box should expand as you type)

List all who will have access to the data generated by the research activity:

Dr Ceri Phelps, Dr Paul Hutchings, Amy Bendall, Ella Morris-Fuge, Sarah Hawkins.
(this box should expand as you type)

List who will have control of, and act as custodian(s) for, data generated by the research activity:

Amy Bendall, Ella Morris-Fuge, Sarah Hawkins.
(this box should expand as you type)

Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.

The data will be stored in an online, secure database via the program Qualtrics.
(this box should expand as you type)

Please indicate if your data will be stored in the UWTSD Research Data Repository (see <https://researchdata.uwt.ac.uk/>). If so please explain. *(Most relevant to academic staff)*

The data will not be stored in the UWTSD research data repository.
(this box should expand as you type)

Confirm that you have read the UWTSD guidance on data management (see https://www.uwt.ac.uk/library/research-data-management/)	YES	☐
	NO	☐
Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☐
	NO	☐

Again, the information about data storage was explored by us three student researchers on Qualtrics, prior to completing the form.

XXXX and I had assumed here that because the study was being conducted on an external website, that it would not be stored in UWTSD's data repository.

Application for Ethical Approval

Final Version

SECTION E: Details of Research Activity

Indicative title:	Exploring connectedness to nature, social media use and altruism as predictors of pro-environmental behaviour in a Welsh population.		
Proposed start date:	01/02/20	Proposed end date:	31/12/20

Introduction to the Research (maximum 300 words)

Ensure that you write for a **Non-Specialist Audience** when outlining your response to the three points below:

- Purpose of Research Activity
- Proposed Research Question/
- Aims of Research Activity
- Objectives of Research Activity

Demonstrate, briefly, how **Existing Research** has informed the proposed activity and explain

- What the research activity will add to the body of knowledge
- How it addresses an area of importance.

Purpose of Research Activity

As part of the UWTSD Applied Health and Social Psychology MSc, the professional skills module gives student researchers the opportunity to conduct a study surrounding a contemporary topic within psychology. Three student researchers will collaborate on this project, with Dr Paul Hutchings and Dr Ceri Phelps acting as project leads. As a team, the researchers share an interest in the psychological factors that have an influence on peoples' behaviours. Specifically, behaviours that are environmentally "friendly." It is not fully understood why some people choose to engage in pro-environmental behaviours, and others do not, but, given the current global warming crisis, it is imperative that more people begin to engage in pro-environmental behaviour (Overbeck & Conde, 2019).

Mayer and Frantz (2004) found that connection to nature is an important predictor of PEB, and the proposed study will allow for this theory to be expanded upon further, within a different participant sample. Research also shows that social media engagement can be a strong predictor of general behaviours (Wright et al, 2013) and considering the exponential growth of this form of communication, it could be important to explore how an individual's engagement with online platforms could influence their PEBs. Finally, the concept of altruism in psychology lends itself to the exploration of environmental issues, even on a general level (Knez, 2016). The idea of "global citizenship" could be argued to be a form of global altruism, but it is still unclear whether individuals engage in PEBs for altruistic or self-interest reasons (Dietz, 2015; Nolan & Schultz, 2015). This study will therefore attempt to explore how much a person's altruistic motives predict their PEBs.

The disparity between pro-environmental behaviours in England and Wales is another interest of the current researchers. It has been found that Wales shows a higher level of pro-environmental behaviours following the introduction of single-use carrier bags (Thomas et al, 2016), with one legislative change being linked to six other sustainable behaviours. The current study will therefore utilise a participant sample of those who live in Wales, firstly, because there is a higher likelihood of gaining participant data from those who do exhibit PEBs, but also with a view to possibly conducting future comparison studies on participant samples of those who live in England.

This study is proposed as an exploration of the psychological factors predicting pro-environmental behaviours (PEBs) and could possibly provide valuable insight on which to base future behavioural change initiatives.

Due to feedback from our supervisors, the team discussed allowing for a longer timescale in case there was a further opportunity for manuscript preparation/publication.

Here we realized that an explanation of the context of the study would help us more thoroughly describe the research direction and purpose.

This paragraph highlights how we synthesized our individual areas of research interest into a cohesive idea for an exploration into PEBs.

Here is a fuller explanation of the reasons we chose to limit the sample size to a Welsh population, instead of UK-wide.

As a team, we agreed early on in our research that we wanted to gather data which could be utilized to facilitate *real-world* change.

Research Question This study hopes to explore the extent to which participants' (a) connectedness to nature, (b) altruism and (c) social media engagement can predict their pro-environmental behaviours.
Aims of Research Activity The aims of this study are to explore three specific hypotheses. Namely; 1. High connectedness to nature will predict higher levels of pro-environmental behaviour 2. High levels of altruism will predict higher levels of pro-environmental behaviour 3. Deeper engagement with social media will predict higher levels of pro-environmental behaviour
Objectives of Research Activity Please see above. This study will provide further understandings of how each concept can predict pro-environmental behaviours individually, and as a combined model. The project is hoped to result in enhanced understandings of the social and cognitive factors that underly environmentally friendly behaviour. This could add to the growing body of research surrounding the topic, and aid in future initiatives intended to improve levels of pro-environmental behaviour throughout society.
Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. The design of the study is an online cross-sectional questionnaire design, exploring the extent to which the connectedness to nature (CNS), social media engagement and altruistic factors can explain engagement in pro-environmental behaviour (PEB) as both individual concepts and as a combined model. This study proposes the use of online quantitative data collection through the online package Qualtrics. Data will be analysed using the Statistics Package for the Social Sciences (SPSS). be eligible to take part in the questionnaire, participants must be adults who live in Wales. Participants will be required to read an online information sheet and complete an online consent form before answering questions regarding their eligibility. The information sheet will highlight to participants that they must be living in Wales and aged 18+ to participate. The questionnaire will take approximately 15 minutes to complete. The initial questionnaire will be piloted online administered to an opportunity sample of university students during a university workshop. Students will be asked to report any issues they encounter when completing the questionnaire (such as not understanding the questions, or technical issues) and use an evaluation form to include any further comments to be fed back to the research team. The outcome variable is the level of engagement with environmentally friendly behaviours, measured by the Recurring Pro-environmental Behaviour Scale (REBS; Brick, Sherman & Kim, 2017). This 21-item scale includes items such as "How often do you carry a reusable water bottle?"

Instead of only looking at high/low social media usage, I also wanted to explore whether use /non-use of specific social media platforms was related to PEBs.

We wanted to pilot the questionnaire to gain an idea of

a) how long the questionnaire would take others.

b) Whether some questions were worded confusingly.

c) If the questionnaires were too long/boring for participants.

d) If there were any issues that we (as the creators of the questionnaire) had not seen.

The outcome variable is the level of engagement with environmentally friendly behaviours, measured by the Recurring Pro-environmental Behaviour Scale (REBS; Brick, Sherman & Kim, 2017). This 21-item scale includes items such as "How often do you carry a reusable water bottle?"

The predictor variables are:

- **Connectedness to nature:** This will be measured using the Connected to Nature Scale (CNS; Mayer & Frantz, 2004). This 14-item scale includes statements such as, "I often feel a kinship with animals and plants".
- **Altruism:** This will be measured using an adapted version of the Self-report Altruism Scale (Rushton, 2009). This 20-item scale includes statements such as, "I have given money to a charity".
- **Engagement with social media:** This will be measured using the Social Media Usage and Integration Scale (SMUIS, Wright et al, 2013). This scale will not only capture the amount of time a participant spends on social media platforms, but their social and emotional reasons for doing so. The 10-item scale is adaptable to various forms of social media and includes statements on a 6-point Likert scale, such as: "I would like it if everyone used social media to communicate" or "I get upset when I can't log in to my social media account".

Age, gender, and education level will also be collected as demographic variables in order to explore and/or exclude these factors as predictors of PEBs.

The reliability of each scale will be assessed by the researchers and piloted online. The final amended version of the questionnaires will be distributed to participants via Qualtrics. This phase of data collection will then run for a maximum phase of three weeks, due to the student researcher's assignment deadlines for the module incorporating this project. It should be noted however, that the proposed end date for the study is not until December 2020. This is due to the possibility of the researchers producing a report viable for publication. The quantitative data will be downloaded into SPSS for the purpose of regression analyses

I chose this scale because it would allow me to further explore how social media and PEBs are linked, using secondary analyses.

We agreed as a team to download one dataset that we could all work on together, and to keep one raw dataset separately. This was to minimize the risks of making mistakes with the dataset and losing any progress.

Location of research activity

Identify all locations where research activity will take place.

Online questionnaires to be conducted through Qualtrics – no physical data collection.
Study to be managed from UWTSD SA1 campus Psych labs

Research activity outside of the UK

If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants.

N/A

SECTION G: Intended Participants

Who are the intended participants?		YES	NO
Students or staff at the University?		☒	☐
Adults (over the age of 18 and competent to give consent)?		☒	☐
Vulnerable adults?		☐	☒
Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)		☐	☒
Prisoners?		☐	☒
Young offenders?		☐	☒
Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?		☐	☒
People engaged in illegal activities?		☐	☒
Others (please identify specifically any group who may be unable to give consent) please indicate here and tick the appropriate box.		☐	☒
Other – please indicate here:			

Participant numbers and source	
Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
How many participants are expected?	Pallant (2013) suggests that 15 participants are needed for each predictor variable, so the study aims to target 180 participants in order to gain a minimum final sample of 45 participants based on a 25% response rate. A 25% response rate is considered to be the acceptable level showing that the results are representative of the target sample (Guo et al, 2016; Heffetz & Reeves, 2019).
Who will the participants be?	Adults living in Wales, with access to the internet.
How will you identify the participants?	Participants will be targeted through the University's Twitter page. Prior to taking part in the online questionnaire, participants will be provided with an online information sheet with instructions on how to complete the survey, an estimate of how long the survey will take and highlighting the exclusion criteria below (to avoid disappointment if screened out). Participants will also be assured that their data is confidential, and their answers will not be traceable back to them. Participants who are eligible for inclusion will then be provided with an online consent form which they would need to read and tick the appropriate boxes confirming their acquiescence. Exclusion criteria: location (Wales-based only) age (18+ only)

Here, we realized that we would be distributing the questionnaire to students, during the pilot test, and that this also needed ethical approval.

But we then decided to use the *most recent* examples of similar research as a guide and agreed to estimate it at 25% in the final draft.

As a group, we struggled to agree on how to estimate an expected response rate. But we then decided to use the *most recent* examples of similar research as a guide and found that 25% was a reasonable estimate.

Information for participants:	YES	NO	N/A
Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
Will you tell participants that their participation is voluntary?	☒	☐	☐
Will you obtain written consent for participation?	☒	☐	☐
Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☐	☐	☒
If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☒	☐
Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
If NO to any of above questions, please give an explanation			
The participants will not be given the option to omit questions they do not want to answer as the questions asked are not of a sensitive nature. Each question is part of a validated scale so to ensure that internal reliability is upheld all questions should be included.			

As a group, we discussed the possibility of allowing participants to skip questions. We considered the possibility that some participants may close the questionnaire if they did not have an option to skip. But we ultimately agreed that we wanted to minimize the risk of missing/incomplete data points, which could negatively affect the validity of the results.

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.	
If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.	
Full risk assessment completed and appended?	Yes ☐ No ☒
Risks to participants For example: emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information	
Risk to Participant: 1. A participant may experience emotional distress by feeling that they do not engage in "enough" pro-environmental behaviours.	How will you mitigate the Risk to Participant? - The questions included in the survey will be worded using neutral and non-judgemental language. - The information sheet will assure participants that their data is confidential prior to them taking part in the study, and that the researchers will not be able to identify their individual responses. - The ethical guidelines highlighted in section C will be adhered to at all times to minimise any risk of potential harm. - Participants will be provided with contact details for the research team to raise any queries they have following their participation - Participants will be provided with the web address www.greenchoices.org, for further information and guidance on pro-environmental behaviour.

After considering the study questions from the perspective of a participant, myself and Sarah felt that some of the questions could be amended to be more "friendly".

I took the lead on finding an appropriate resource that we could refer participants to, should they be inclined to seek further information.

If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities

This study does not include sensitive/upsetting topics.

Risks to investigator

For example: personal safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest

Risk to Investigator:

1. Potential for harassment or unwanted communications from participants, as researchers contact details are provided.
2. There is a potential risk that participants could leave the study unfinished or uncompleted, thereby affecting the reliability of the analysis

How will you mitigate the Risk to Investigator?

To minimise this risk all communications will be directed through the university email system (not personal email addresses) and any communications will be addressed by the whole research team. Issues will also be mitigated by the student researchers' regular engagement with the supervisory researchers for support and advice.

In order to overcome this, the research team has decided to exclude the data of any participant who does not fully complete the survey. Due to the nature of the online study, all participants will have to complete all questions to continue to the next. therefore, if a participant exits the webpage, their data will not be included in the analysis.

As we were a small research team of only three students, we had the opportunity to engage with our supervisors regularly, with all team members present. This allowed us to utilize the support of our supervisors in a productive and cohesive way.

University/institutional risks

For example: adverse publicity, financial loss, data protection

Risk to University:

There is the possibility of risk to the university reputation if the study is conducted poorly and/or unethically.

How will you mitigate the Risk to the University?

- The researchers will strictly adhere to the ethical guidelines shown in section C.
- The student researchers will engage with the supervisory researchers regularly.
- The research team will actively and continuously strive to ensure the integrity and robustness of the research.

Upon the suggestion of Paul, the three of us began to consider how our study could negatively affect the university. We realized that if our research was unethical/sub-standard, this could damage the reputation of the institution and of our Masters programme. We sat down together and brainstormed how to avoid these possibilities.

SECTION I: Feedback, Consent and Confidentiality

Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
Participants will be provided with an online debrief sheet following the study, thanking them for their contribution, explaining the reasons for the research and reminding them of their right to withdraw their data (by closing the window). They will be asked to tick a box to submit their finalised responses and another box agreeing that they understand that their data cannot then be extracted from the database. The debrief sheet will also include contact details for the research team, and a weblink for an eco-friendly information website, in case participants have further questions or want more information.
Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
Participants will be provided with an online consent form, created by the researchers following standard good practice for online consent within Psychology research at UWTSD. The form will be presented on Qualtrics and the participants will have to tick boxes electronically to indicate consent. The consent form will explain the purpose of the research, explaining that the participants participation is voluntary, that the participants have the right to withdraw, how long the study is expected to take and what they are expected to do. It will also give the researchers contact details if the participants have any concerns or require more information regarding the study. The participants will be told that their data will be anonymous. Screening for inclusion will happen at this stage, the participants will be asked whether they are 18 years old and live in Wales, if they answer no, then they will be redirected to a new page showing them that they do not meet the inclusion criteria for the study so they cannot take part.
Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
All data will be collected anonymously through Qualtrics which is an online data management programme. This data will be anonymous when it is used in SPSS since Qualtrics anonymises all data when obtained.

Following the practice we had all undertaken on using Qualtrics, we were able to describe in detail, much more effectively, what measures we would take to ensure that these fundamental aspects of ethical research were met.

SECTION J: Data Protection and Storage

Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.	☒	☐
If YES, provide a description of the data and explain why this data needs to be collected:		
The data being collected will be demographic and numerical data that can then be analysed via statistical software. Demographic information will be collected via the online consent form on Qualtrics, including age, gender, and education level. There will be four questionnaires collecting information regarding the participants social media engagement, altruism values, connectedness to nature and pro-environmental behaviours. These data will be anonymised via the online programme Qualtrics, with each participant being assigned a unique identification number, which will not be able to be linked back to a specific individual.		

The mistake we had made in our first version of this form had given us an idea of how important it is to be stringent and earnest in considering ethical implications. As a team we checked how Qualtrics anonymizes participants and ensured that we knew the correct way to set this up in our study.

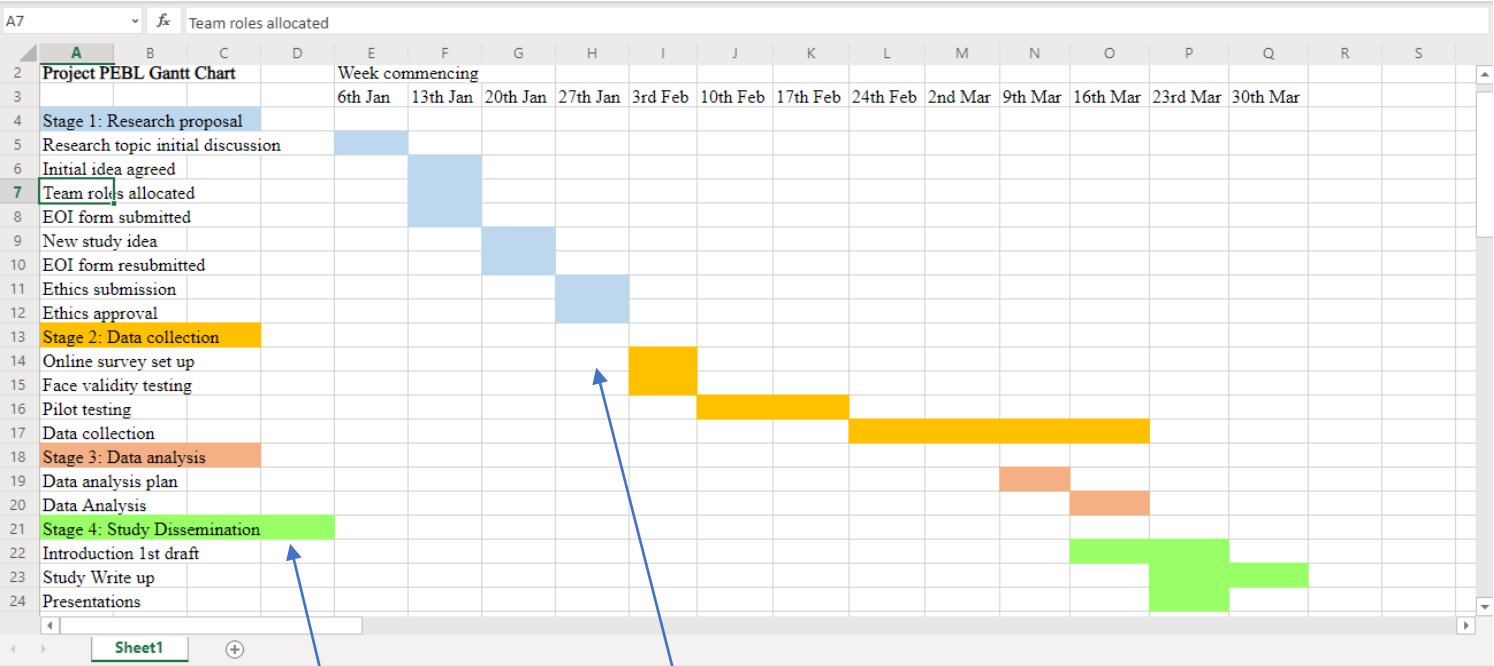
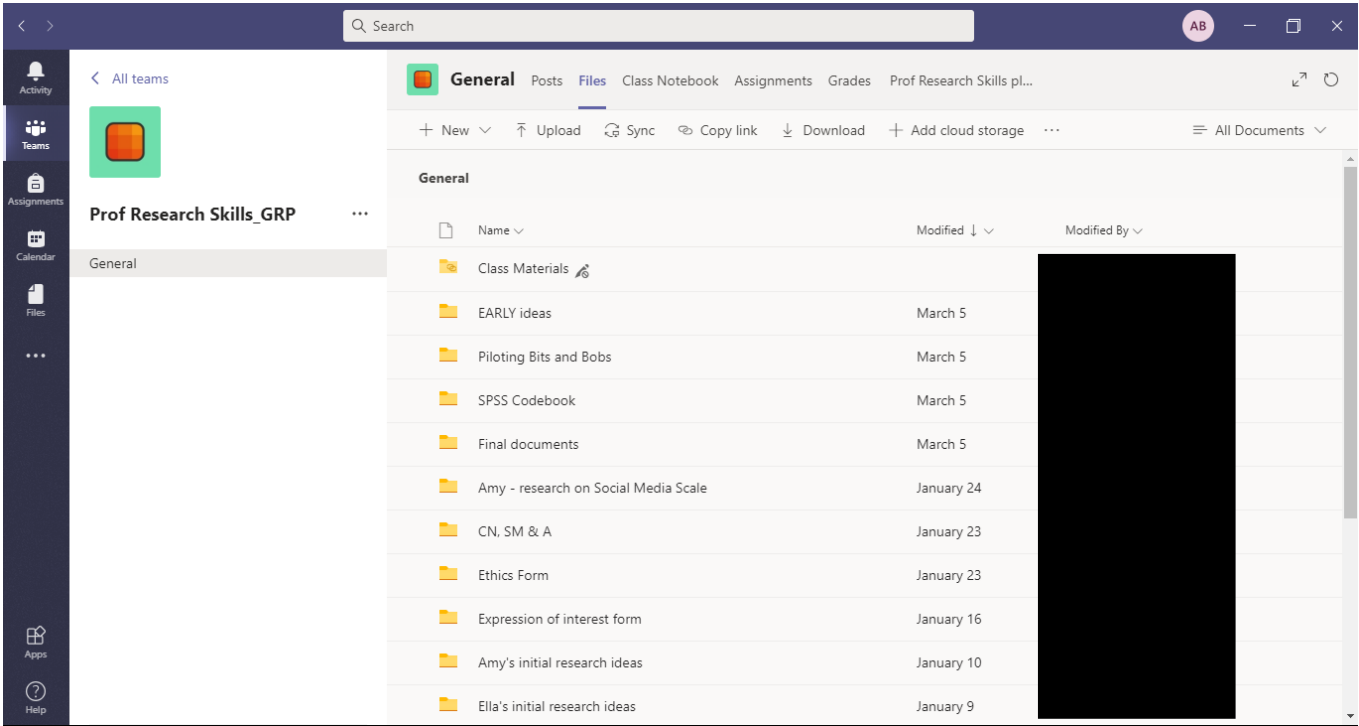
Does it involve special category data (as defined by the GDPR)?	YES	NO
“Special category data” means sensitive personal data consisting of information as to the data subjects’ – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes).	☐	☒
If YES, provide a description of the special category data and explain why this data needs to be collected:		
Will the research activity involve storing personal data and/or special category data on one of the following?	YES	NO
Manual files (i.e. in paper form)?	☐	☒
University computers?	☐	☒
Private company computers?	☐	☒
Home or other personal computers?	☐	☒
Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
“Cloud” storage or websites?	☒	☐
Other – specify:	☐	☒
For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of password protection, encryption, anonymisation and pseudonymisation:		
The data collected through online questionnaires, including participant consent forms, will be stored on Qualtrics. Data will only be accessed by the research team and will be password protected. The data will be anonymised through Qualtrics assigning each participants data an ID number.		
All Data Storage		
Will the research activity involve any of the following activities?	YES	NO
Electronic transfer of data in any form?	☒	☐
Sharing of data with others at the University?	☐	☒
Sharing of data with other organisations?	☐	☒
Export of data outside the European Union or importing of data from outside the UK?	☐	☒
Use of personal addresses, postcodes, faxes, emails, or telephone numbers?	☐	☒
Publication of data that might allow identification of individuals?	☐	☒
Use of data management system?	☒	☐
Data archiving?	☒	☐

If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and DPA (and/or any international equivalent):		
In accordance with the GDPR and DPA, data will be transferred electronically from Qualtrics to SPSS to run statistical analysis. The data will remain anonymous. The use of a data management system will be in place in the form of Qualtrics. Data will be archived for two years after the study ends within the UWTSD Research Data Repository.		
List all who will have access to the data generated by the research activity:		
Dr Ceri Phelps, Dr Paul Hutchings, [REDACTED]		
List who will have control of, and act as custodian(s) for, data generated by the research activity:		
Amy Bendall, Ella Morris-Fuge, Sarah Hawkins.		
Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not, why not?		
The data will be stored in an online, secure database via the program Qualtrics. The results from the statistical analysis, which will be saved as an SPSS file, on a UWTSD password protected computer. All data will be password-protected and only accessible by the researchers specified. The data will be stored for the duration of the study in the above locations. The data will be archived within the UWTSD Research Data Repository for two years after the study ends to allow for use for future publications and research.		
Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so, please explain. (Most relevant to academic staff)		
A dataset record concerning the studies data will be created within the UWTSD Research Data Repository. It will state that the raw data was obtained from, and will be stored at, the data management service Qualtrics. The results from the statistical analysis will be stored in the UWTSD Research Data Repository, this will be saved as an SPSS file. All of the data will be password protected and only accessible by the researchers specified. The data will be protected by anonymity and it would be available to use in future publications.		
Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
	NO	☐
Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒
	NO	☐

With input from Ceri, [REDACTED] took the lead here on explaining how the data will be kept, and for how long.

Evidence B: Gantt Chart

Using our collated/group notes on Microsoft Teams, XXX started the process of creating a Gantt chart, inputting the expected timescales for our project.



I suggested we include a stage for the dissemination of the study finding, should it produce valuable insights into PEBs.

XXXX suggested the use of different colours to help us differentiate between stages of the

Evidence B: Qualtrics survey setup

The screenshot shows the Qualtrics survey editor interface. At the top, there are tabs for 'Survey', 'Actions', 'Distributions', 'Data & Analysis', and 'Reports'. Below these are icons for 'Look & Feel', 'Survey Flow', 'Survey Options', and 'Tools'. The main title of the survey is 'Predicting PEBS'. Below the title, there is a list of survey sections, each with a right-pointing arrow and the number of questions in parentheses:

- ▶ INFO & CONSENT (3 Questions)
- ▶ Demographics (3 Questions)
- ▶ Altruism (20 Questions)
- ▶ Connectness to Nature (14 Questions)
- ▶ Social Media (13 Questions)
- ▶ Recurring Pro-environmental Behavior Scale (PEBS) (22 Questions)
- ▶ Debrief (2 Questions)

XXXX created a survey on Qualtrics, and added XXXX, Ceri, Paul, and I as collaborators.

As a group, we designed and created these sections together. My main input was to adapt the articulation of the information. I helped “word” the information to be understandable by a lay audience, but to also express the professional psychological foundation of the study.

I created this section individually, inputting the questions from my chosen scale, while XXXX did the same for the scales they had chosen.

▼ Social Media Block Options ▾

Q1 Do you use social media?

☐ Yes

☐ No

Condition: No Is Selected. Skip To: End of Block. Options ▾

Q1 SECTION C: The following questions are related to your social media use;

Please indicate which social media platform(s) you use (click all that apply)

☐ Facebook

☐ Twitter

☐ Snapchat

☐ Instagram

☐ YouTube

☐ Tik Tok

☐ Pinterest

☐ Other: (Please indicate in the box below)

Q2 Please indicate which social media platform you use the most.

☐ Facebook

☐ Twitter

☐ Snapchat

☐ Instagram

☐ YouTube

☐ Tik Tok

☐ Pinterest

☐ Other: (Please indicate in the box below)

Q1 Thinking about the social media platform(s) you use, please indicate your level of agreement with the following statements:

Q1. I feel disconnected from friends when I have not logged into social media

☐ Strongly disagree

☐ Disagree

☐ Somewhat disagree

☐ Somewhat agree

☐ Agree

☐ Strongly agree

Q2 Q2. I would like it if everyone used social media to communicate

Change Question Type

Multiple Choice ▾

Choices

2 +

☐ Automatic Choices

Answers

☒ Single Answer

☐ Multiple Answer

More...

Position

☒ Vertical

☐ Horizontal

More...

Validation Options

☒ Force Response ▾

Validation Type

☒ None

☐ Custom Validation

Actions

Add Page Break

Add Display Logic

Add Skip Logic

Copy Question

Move Question

Add Note

I learned how to insert skip logic while conducting online data collection and utilized this here.

Because the full questionnaire study had become quite long, the team decided to label each individual scale as a section. This would give participants an idea of how much longer it would take and could ameliorate the possibility of non-completion.

Because I wanted to extrapolate data on whether users of various media platform were more/less engaged with PEBs, I chose to allow participants to choose more than one option here.

I also wanted to prepare for the possibility of further analyses exploring links between demographic data and preferred social media platform.

The final 10 questions within my section were single-choice and intended to capture the extent of a participants' engagement with social media. This shows two examples.

Evidence C: Survey Validity

Changes made after researchers checked face validity

Consent form: "you must be over and 18 and live in Wales" changed to you must be over 18 and live in wales.

PEBS Q3 "how often do you drive slower than 60mph on the highway changed to slower than 70mph on the motorway to relate to the welsh population.

Reverse coding for PEBS: how often do you go on personal air travel? how often do you eat meat? dairy products? aerosol products?

PEBS Q15 and Q16 trash changed to rubbish for welsh population

Q21 the answer sometime changed to sometimes

Altruism Q13: clerks changed to shop assistants' error (however it mentions bank and supermarket so may need to be changed again

Q16: changed "I have helped a classmate who I did not know that well with a homework assignment when my knowledge was greater than his or hers. To I have helped a peer who I did not know that well with a task when my knowledge was greater than his or hers

Social media Q1: should be give option to tick more than one? – group decided best to tick option most often used.

Q2: other to others

Changed order of questions to consent, demographics altruism, connectedness to nature, social media, PEBS, debrief

(noticed time zone for responses is wrong)

Altruism Q3: I have made change for a stranger needs clarification as different people as understanding this differently e.g. change as in money or personal change. Changed to I have given change to a stranger when they didn't have enough money for their shopping.

Q4: spelling error in answer, ~~oftern~~ to often

Q5: more ~~then~~ once changed to more than once

Q17: grammar changes, I have before being asked, voluntarily looked after a ~~neighbours~~ pets or children without being paid for it changed to I have voluntarily looked after a neighbour's pets or children without being paid for it.

Nature Q14 my personal welfare is independent on the natural world changed to of the natural world

Question numbers added to all questions for each scale. E.g altruism Q1 – Q20, nature Q1 – Q14.

Added age group to demographics

Following the creation of the survey, the team opened a shared document on Microsoft Teams and kept this informal log of issues while checking the survey for face validity.

Here we realised that some questions in the PEBS scale were worded inversely, to ameliorate response bias. We reversed the scoring through Qualtrics.

Here we adapted the wording to encompass answers from a wider range of participants.

This was highlighted as a important consideration, as we did not want any issues caused in the dataset by technological mistakes we might make.

As grammar is one of my strong points, the group informally voted for me to take the lead on rephrasing the questions that needed to be altered, and correcting spelling errors.

Changes made after family and friends checked face validity

Comments on length of questionnaire – suggestion to add page breaks to make the questionnaire seem shorter.

Here we decided to include page breaks to avoid the possibility of participants abandoning the survey.

Comments made to add an N/A option and discussed with group (how will this change the validity and reliability of scale?)

We did decide against adding a neutral option, as we did not want to encourage response bias, or end up with non-representative data.

Comments made about influences of location and accessibility to do certain behaviours.

Comments made about use of and in question about animals and plants (should we change to and/or) – decided to change to and/or

Q11: nature – forest to a forest

Changes made after conversation with Ceri and Paul

Suggestion to add information about there being four sections to complete. (change made)

Questioned whose contact details to put on the questionnaire, Ceri suggested that we use all of our student emails as we are the researchers so these will be added. (change made)

These comments led to the group considering adding a geographical area” question to collect information pertaining to the differences of PEBs provision across Wales. However we ultimately decided that this could be a possible direction for future research.

Although our student team did successfully set up and adapt the survey, we also sought advice/support from our mentors when needed.

Evidence C: Piloting

Piloting information |

27.02.2020: downloaded raw dataset to SPSS

	Start Date	End Date	Status	Progress	Duration	First Date	Response ID	Distribution Channel	User Language	Q1	Q2	Q10	Q20	Q2_4_TEXT	Q3
1	13.Fe.	13.Fe.	0	100.00	818.00	1	13.Fe.	R_325glJunde1rf	anonymous	EN-GB	1	1	90	2	3
2	13.Fe.	13.Fe.	0	100.00	628.00	1	13.Fe.	R_3WQVMD6VLR9M9	anonymous	EN-GB	1	1	89	2	2
3	13.Fe.	13.Fe.	0	100.00	384.00	1	13.Fe.	R_30c19G1406E2n3	anonymous	EN-GB	1	1	91	2	2
4	6.Feb.	6.Feb.	0	23.00	60.00	0	13.Fe.	R_8WVQJvCOT6V5J	anonymous	EN-GB	1	1	89	2	3
5	13.Fe.	13.Fe.	0	100.00	280.00	1	13.Fe.	R_1HS25FETU6Q8	anonymous	EN-GB	1	1	92	1	2
6	13.Fe.	13.Fe.	0	100.00	356.00	1	13.Fe.	R_32VpUpVCKWAD3	anonymous	EN-GB	1	1	89	2	2
7	13.Fe.	13.Fe.	0	100.00	341.00	1	13.Fe.	R_3qYp8K6e6d6u5	anonymous	EN-GB	1	1	89	2	3
8	13.Fe.	13.Fe.	0	100.00	473.00	1	13.Fe.	R_2hygSyV83LVZ3C	anonymous	EN-GB	1	1	89	2	2
9	13.Fe.	13.Fe.	0	100.00	207.00	1	13.Fe.	R_3ChR8R6dlyr8M	anonymous	EN-GB	1	1	89	2	2
10	14.Fe.	14.Fe.	0	100.00	594.00	1	14.Fe.	R_1m6wO7cE4Z5	anonymous	EN-GB	1	1	91	3	2
11	14.Fe.	14.Fe.	0	100.00	298.00	1	14.Fe.	R_1RNB6t7u5G4L3	anonymous	EN-GB	1	1	90	2	1
12	14.Fe.	14.Fe.	0	100.00	2248.00	1	14.Fe.	R_2EGBHFULaKO0	anonymous	EN-GB	1	1	90	2	2
13	14.Fe.	14.Fe.	0	100.00	431.00	1	14.Fe.	R_1p2Fm5gn3BW	anonymous	EN-GB	1	1	89	2	2
14	14.Fe.	14.Fe.	0	100.00	543.00	1	14.Fe.	R_1mDT2C8VpQOLka	anonymous	EN-GB	1	1	90	1	1
15	14.Fe.	14.Fe.	0	100.00	4304.00	1	14.Fe.	R_3HkG2lp8wup0	anonymous	EN-GB	1	1	90	2	2
16	14.Fe.	14.Fe.	0	100.00	540.00	1	14.Fe.	R_1O6YU3Cj6B6Mc	anonymous	EN-GB	1	1	89	2	2
17	14.Fe.	14.Fe.	0	100.00	288.00	1	14.Fe.	R_30qyQ4E6OC3n63	anonymous	EN-GB	1	1	89	1	2
18	14.Fe.	14.Fe.	0	100.00	617.00	1	14.Fe.	R_1dx0YHjJmp8	anonymous	EN-GB	1	1	90	2	3
19	14.Fe.	14.Fe.	0	100.00	445.00	1	14.Fe.	R_1LmJOU1D3OV6	anonymous	EN-GB	1	1	90	2	2
20	14.Fe.	14.Fe.	0	100.00	385.00	1	14.Fe.	R_2u4C4sP2yK0Vh	anonymous	EN-GB	1	1	89	1	3
21	14.Fe.	14.Fe.	0	100.00	867.00	1	14.Fe.	R_3D6G4aChEUC3k	anonymous	EN-GB	1	1	92	2	2
22	15.Fe.	15.Fe.	0	100.00	362.00	1	15.Fe.	R_1u6B9d8AGuYH	anonymous	EN-GB	1	1	91	2	2
23	15.Fe.	15.Fe.	0	100.00	891.00	1	15.Fe.	R_25aGdVY3Abtpu	anonymous	EN-GB	1	1	92	2	2
24	10.Fe.	10.Fe.	0	97.00	4248.00	0	17.Fe.	R_1AEandBjCvqf	anonymous	EN-GB	1	1	92	2	4
25	13.Fe.	13.Fe.	0	9.00	56.00	0	20.Fe.	R_1Qucj2z0P6uAQ	anonymous	EN-GB	1	1	90	1	1

Response ID changed to Participant ID (1-27)

Participant 4 excluded from dataset as they completed the study on the 6th of Feb which was before the pilot data was collected. In addition to this the participant did not complete the study from Q11.

Participants 25, 26, 27 were also excluded as they did not complete the study.

Participant 24 did not agree to submit their responses, so they were excluded from the dataset.

Participants 4, 24, 25, 26, 27 also did not complete the study as the progress was not 100 (this could be an inclusion criterion from our actual study? Agreed this is the case + do not agree to submit

(can I exclude these before screening the data through SPSS?) I It doesn't matter a huge deal for the pilot I don't think, but for the ACTUAL study, I would do the screening and cleaning and that should mark them for removal anyway (if that makes sense?)

Please indicate which social media platforms you use? (all removed from dataset as the numerical value is not necessary for the scale) Well, the variable doesn't need to be removed, just don't include it in the analysis, it could still be something to comment on in the discussion section of the final report, and we could see which age group uses which SM most etc. keeping data but not using in analysis.

Comment selection/comment box deleted as not relevant to analysis.

Gender other variable removed as no participants used this.

Following our online pilot, we again kept a live shared document on Microsoft Teams to track and solve any issues. My written input to the document is in red font.

We downloaded the pilot data from Qualtrics into SPSS, and each saved a copy of the raw data, before collaborating on exploring/analysing the dataset as a team.

This conversation is an example of how xxx and I worked together while not being physically present in the labs. We had a few disagreements and different thoughts on how to overcome problems, but we ultimately realised that this was due to our shared passion for the project and compromised to find the best solutions.

xxxx and I also talked informally in person and helped each other understand our different perspectives. Here I explain why I would like to keep the multiple-choice question I had included in the Social Media scale, and following a face-to-face conversation, we solved the slight debate.

Indicate age group did not transfer to SPSS correctly? Option to add this manually but is there a way to avoid this. I don't fancy doing this manually, and how even would we once they are anonymised? Maybe there's a setting wrong in EMS? amended this through SPSS variable view.

Predicting PEBS dataset edit 1.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

26: Education

	Participant_ID	CON SEN T1	CON SEN T2	Age	Gender	Educa tion	Car	AQ1	AQ2	AQ3
1	1	1	1	90	2	3	1	1	3	3
2	2	1	1	89	2	2	1	1	2	1
3	3	1	1	91	2	2	1	4	3	3
4	5	1	1	92	1	2	4	2	2	3
5	6	1	1	89	2	2	1	2	4	1
6	7	1	1	89	2	3	4	3	3	4
7	8	1	1	89	2	2	1	2	4	3
8	9	1	1	89	2	2	1	2	4	3
9	10	1	1	91	3	2	4	4	4	3
10	11	1	1	90	2	1	1	3	3	1
11	12	1	1	90	2	2	4	3	3	4
12	13	1	1	89	2	2	4	4	4	3
13	14	1	1	90	1	1	1	3	3	4
14	15	1	1	90	2	2	1	1	3	1
15	16	1	1	89	2	2	1	1	3	2
16	17	1	1	89	1	2	4	1	3	5
17	18	1	1	90	2	3	1	3	3	2
18	19	1	1	90	2	2	1	3	4	5
19	20	1	1	89	1	3	1	3	3	1
20	21	1	1	92	2	2	4	3	4	4
21	22	1	1	91	2	2	1	3	3	1
22	23	1	1	92	2	2	1	1	3	4
23										
24										
25										

We also utilised the shared document to ask each other questions and ask for support in areas where another team member was more confident.

Start date, end date, status, progress, duration, finished, recorded date, distribution channel and user language removed from dataset as not relevant to analysis.

Score variable removed as not relevant

Submitting responses removed after checked for confirmation that they all agree.

Should the social media questions/labels coincide with the questions on the scale. E.g. don't include question numbers for first items on social media questions as they are not involved in the scale. (confusing when looking at data) As long as we document this in the Codebook, it doesn't matter really. instructions to be written in the data analysis protocol.

Do you drive a car? (1 = yes, 4 = no) ? should be 1 and 2. removed due to question changes.

As there were only two questions concerning driving, we elected to alter the wording of those questions instead of adding skip logic and risking having missing data.

Looking at the dataset: there are no 0 values in the altruism scale however the scale is from 0 – 4. Cross referencing with the raw data on Qualtrics shows that participants have answered never (0) but it hasn't transferred to SPSS. - realised that we can change this on SPSS variable view.

To save manually changing all A scores could we score it 1-5 as this is correct in SPSS? Yes, I would.

Recoded

A: no recodes.

CN: Q4, Q12, Q14

SM: Q9/ Q10. on Qualtrics (SM8 renamed by me in SPSS)

PEB: Q4, 6, 7, 14

Remember to recode 1-6 for SM so as to not produce a no data issue.

When looking at altruism total, no scores produced for those who don't drive a car. -need to resolve this. (2 variables, car/no car to find everyone's totals?) **We can add this in manually maybe? Sorting by that variable in SPSS and just adding 2's all the way down until we reach those who DO drive or whatever.** (decided to change the questions so that everyone is forced to answer every question. Altruism Q12 changed to when in a car, I have given someone a lift. and PEB 3 changed to when in a car, how often do you travel slower than the maximum speed limit.

This is what we changed the driving questions to, specifically.

Cronbach's alpha did not include participants who did not drive – how to correct? *see above*

Changed no value to 0 to run cronbachs and include all participants and still valid. **Should change to 99 and label it as missing data.**

Each team member had different strengths and skills with SPSS, and we all reminded each other of the utility of the programme when we could, to make the process more efficient.

Cronbachs

Altruism: .84 (17 participants, not including those who do not drive)

2: .82 (0 values for car related Q) can't use this data

CN: .80

SM: .89

PEB: .83 (17 participants, not including those who do not drive)

2: .80 (0 values for car related Q) can't use this data

|These values cannot be used. Unless can I use missing data transformation to use the pilot data for accurate reliability for scales?

Document written by Ella - red is Amy – Purple is Ella again (not Amy – done on Amy's laptop).

Evidence D: SPSS Codebook

Version 1

SPSS Code Book PEBL

Variable	Variable name	Coding instructions
Age	Age	1= 18-24 2= 25-34 3= 35-44 4= 45-54 5= 55-64 6= 65-74 7=75-84 8=85 or older
Gender	Gender	1= Male 2= Female 3= Non-binary 4= Prefer not to say
Education level	Ed	1= Left school at 16 2= Educated to higher education (College, A-level, or equivalent) 3= University degree 4= Prefer not to say
Car driver	Car	1= Yes 2= No
Altruism	Alts	1=Never 2=Once 3=More than once 4=Often 5=Very often 99=Missing data
Connectedness to Nature	~~Cns~~	1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree 99=Missing data
Social Media Use	~~Smu~~	1=Strongly disagree 2=Disagree 3=Somewhat disagree 4=Agree 5=Strongly agree 99=Missing data
Pro-Environmental Behaviour	~~Pebs~~	1=Never 2=Rarely 3=Sometimes 4=Often 5=always 99=Missing data

xxxx took the lead on creating a document which labelled each variable and what they meant. This was so that our dataset could be utilised outside of our group if necessary.

Early in the planning process, we had decided as team to collect age demographics in small ranges. This was because we wanted to extrapolate more specific data on what age groups are engaging in PEBs.

At the time the codebook was started, we were still planning on including this question in the questionnaire.

Although each individual scale was scored using a 5-point Likert Scale, the difference in the wording of those scales is reflected here. The nature and social media scales were scored from "strongly disagree" to "strongly agree", while the altruism and PEBs scales were scored from "never to "always."

SPSS Codebook

Final Version

SSPSS Code Book PEBL

Variable	Variable name	Coding instructions
Participant Id	ID	String
Inclusion Criteria (Over 18 and live in Wales)	InclusionCriteria	1= Yes 2= No
Consent to take part in the study	Consent	1= Yes 2= No
Age Group	Age	1= 18-24 2= 25-34 3= 35-44 4= 45-54 5= 55-64 6= 65-74 7= 75-84 8=85 or older 99=Missing data
Gender	Gender	1= Male 2= Female 3= Non-binary 4= Other (Please indicate in the box below) 99=Missing data
Gender Text Box	Gender_Text	Report if participants score 4 on previous question
Education level	Educ	1= Left school at 16 2= Educated to higher education (College, A-level, or equivalent) 3= University degree or higher 4= Prefer not to say 99=Missing data
Altruism Scale Scores	Alt_1 To Alt_20	1=Never 2=Once ~~3=More than once~~ 4=Often 5=Very often 99=Missing data
Connectedness to Nature Scale Scores	CTN_1 To CTN_14	1=Strongly disagree 2=Disagree ~~3=Neutral~~ 4=Agree 5=Strongly agree 99=Missing data
Does Client use Social Media	SocMedUse	1 = Yes 2 = No

After **xxxx** had become frustrated with the codebook, I volunteered to assist her. I was then offered the opportunity to edit and finalise the document individually, as a personal competency.

I decided to open the pilot dataset and work from the beginning. I inserted variables that were missing from the dataset. (E.g. Participant I.D, Inclusion Criteria, Consent, Recoded variables, instructions for text boxes and total scale scores).

I also chose to change the scale variable names to accurately portray what they were called within our dataset.

Social Media Platforms used by clients:		
Facebook	Facebook	1= Do use .= Do not use
Twitter	Twitter	1= Do use .= Do not use
Snapchat	Snapchat	1= Do use .= Do not use
Instagram	Instagram	1= Do use .= Do not use
YouTube	Youtube	1= Do use .= Do not use
<u>Tik Tok</u>	TikTok	1= Do use .= Do not use
Pinterest	Pinterest	1= Do use .= Do not use
Uses other Social Media	Other	1= Do use .= Do not use
Social Media Use Text Box	Soc_Med_Text1	Report if participants score 1 on previous question
Which Social Media Platform do participants use the most?	Soc_Med_Most	1 = Facebook 2 = Twitter 3 = Snapchat 4 = Instagram 5 = YouTube 6 = <u>Tik Tok</u> 7 = Pinterest 8 = Other
Participant uses other Social Media Platform the most	Soc_Med_Text2	Report if participants score 8 on previous question
Social Media Engagement Scale Scores	SME_1 To SME_10	1=Strongly disagree 2=Disagree 3=Somewhat disagree 4=Somewhat agree 5=Agree 6=Strongly agree 99=Missing data
Pro-Environmental Behaviour Scale Scores	PEBS_1 To PEBS_21	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always 99=Missing data
Comments from participants	Comm_1	1 = Made a comment
Comment box	Comm_2	Report if participants score 1 on previous question
Recode of Connectedness to Nature Q4 (CTN_4)	CTN_4Rec	1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree

I also added each individual variable associated with the Social Media Scale. This section shows us whether a participant uses a particular social media platform or not.

Here is an example of coding instructions for a text box. For example, the results of this study found that some participants did use "WhatsApp," as a social media platform. This would not be included in this analysis but could be reported on in the final write-up.

Again, this explains to the reader how to treat the text box when exploring the dataset. In this case, we captured feedback from participants about their experience completing the survey.

Recode of Connectedness to Nature Q12 (CTN_12)	CTN_12Rec	1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree
Recode of Connectedness to Nature Q14 (CTN_14)	CTN_14Rec	1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree
Recode of Social Media Engagement Q8 (SME_8)	CTN_8Rec	1 = Strongly Agree 2 = Agree 3 = Somewhat Agree 4 = Somewhat Disagree 5 = Disagree 6 = Strongly Disagree
Recode of Pro-Environmental Behaviours Scale Q4 (PEBS_4)	PEBS_4Rec	1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Never
Recode of Pro-Environmental Behaviours Scale Q6 (PEBS_6)	PEBS_6Rec	1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Never
Recode of Pro-Environmental Behaviours Scale Q7 (PEBS_7)	PEBS_7Rec	1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Never
Recode of Pro-Environmental Behaviours Scale Q14 (PEBS_14)	PEBS_14Rec	1 = Always 2 = Often 3 = Sometimes 4 = Rarely 5 = Never

Here I show how to reverse score the negatively worded questions that were present in the questionnaire. These questions can give us an idea of whether a participant has read the questions correctly, or has just clicked through blindly, to get to the end.

Codes for the variables added during analysis:

Variable	Variable name	Coding instructions
Altruism Total Scale Score	AltTotal	Numeric
Connectedness to Nature Total Scale Score	CTNTotal	Numeric
Social Media Engagement Total Scale Score	SMETotal	Numeric
Pro-Environmental Behaviour Total Scale Score	PebsTotal	Numeric

Finally, I added coding instructions for the variables that will be created by scoring each individual scale. These variables will then be used in the multiple regression analysis.

Evidence D: Analysis Protocol

Version 1

Section 1 – Preparing the data file

1. Download data from Qualtrics, clicking on the SPSS option.
2. Save and rename the SPSS file appropriately, to a secure location.
3. Open the SPSS file and click on “variable view.”
4. Delete the following variables (which are extraneous to the analysis).
 - Start Date
 - End Date
 - Status
 - Duration in seconds
 - Finished
 - Recorded Date
 - Distribution Channel
 - User Language
 - SC 0 **should this say score?**
5. In variable view, change the measure of the first 7 variables to “nominal”
6. Check the data variable window and look at the “Progress” variable. If there are any entries lower than 100, remove entire row of data (This means that the participant did not fully complete the study questionnaire).
7. Use the study codebook and the variable labels to rename each variable appropriately.
Ensure response ID is changed to Participant ID and the values are changed to ordinal numbers, e.g. 1, 2, 3, 4 etc.
8. In variable view, go to the “values” for the variable “age group” do the following.
 - Change the value for age group 18-24 from 89 to 1
 - Change the value for age group 25-34 from 90 to 2
 - Change the value for age group 35-44 from 91 to 3
 - Change the value for age group 45-54 from 92 to 4
 - Change the value for age group 55-64 from 93 to 5
 - Change the value for age group 65-74 from 94 to 6
 - Change the value for age group 75-84 from 95 to 7
 - Change the value for age group 85 or older from 96 to 8
9. In data view, using the codes above, correct the codes for age for each participant.

Following the pilot, the team had explored the data and it was decided that we should create a guide on how to clean, screen and prepare the data file for a multiple regression analysis. I volunteered to complete this task because I enjoy using SPSS, and XXX agreed to proofread the document I produced. XXX has annotated in red.

XXX reminded me here of a step I had overlooked.

Here, we had not been able to extract the correct coding for age group from Qualtrics, so had decided to recode that variable manually.

Section 2 – Screening and cleaning the data

It is unlikely that there will be any errors in this dataset, as the data was collected online and there is less chance of human error. However, it is good practice to ensure that this is the case. In order to screen and clean the data, the procedure is as follows.

Using the skills and knowledge I had gained during my Ba and my MSc, I worked with the data from our pilot test, to clearly demonstrate how to interpret our dataset.

1. Checking categorical variables

- In the top menu bar, go to Analyse/Descriptive Statistics/Frequencies.
- Choose the variables "age group", "gender", and "education level", and use the arrow to move these into the box on the right.
- Click on the "statistics" button, tick minimum and maximum in the dispersion section, then continue, then OK.
- Check that the minimum and maximum values are correct for each variable (age should only fall between 1 and 8, gender should be between 1 and 4, and education level between 1 and 4).
- Check the number of missing and valid cases. There should not be any, as the participants needed to answer each question to progress in the study.

2. Checking continuous variables

- In the top menu bar, go to Analyse/Descriptive Statistics/Descriptives.
- Click on the variables that have a ruler symbol next to them (these are scale data)
- Click the options button and make sure that "minimum", "maximum" and "standard deviation" are ticked. Click continue and then OK.
- Check that the minimum and maximum values are correct for each variable (The scores on the altruism scale should fall between 1 and 20, the scores on the CTN scale should fall between 1 and 14, the scores on the social media engagement should fall between 1 and 10, and the scores on the PEBS scale should fall between 1 and 21).

3. If there are errors or outliers in the data set, please consult with an SPSS textbook for instruction on correcting these (This is very unlikely to occur).

I attempted to be extremely detailed in my explanation of the process. I wanted to include the minutiae of the individual steps of the analysis to avoid any mishandling of data, and to ensure that any results were not overlooked.

Section 3 – Manipulating the data

In order to find out participants total scores on each scale, we must first reverse code the negatively worded items in the questionnaires. Instructions to do so are as follows.

1. Scroll to CTN_4 in variable view and ensure that the value labels match the others in the scale. Return it to 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. (We are going to recode into *different* variables to retain the original data, and this is the only one that Qualtrics recoded anyway)

2. Go to "transform" on the top bar and select "recode into different variables".

3. In the box, select question 4 on the **altruism** scale and click the "old and new values" box.

4. In the left section, under "value", type in 1, and on the right, under "new value", type in 5. Then press the "add" button next to the larger box.

5. Repeat the last step adding the recodes:

- 2=4
- 3=3
- 4=2
- 5=1

6. Press continue, and in the original box, in the text box to the right, name the new variable CTN_4Rec.

7. Label the variable as "recode of CTN_4" and press OK. Now we have a reverse scored variable that will allow us to correctly calculate the total scale score.

8. Repeat steps 2 to 7 (with the appropriate names) with the following variables:

- CTN_12
- CTN_14
- SME_8 (The SME scale needs to be recoded as follows: 1 = 6, 2 = 5, 3 = 4, 4 = 3, 5 = 2, 6 = 1)
- PEBS_4
- PEBS_6
- **PEBS_7**
- PEBS_14

Here is another example of mine and XXXX collaboration, where she reminded me that this scale is scored differently than the others.

Section 4 – Reliability Analyses

Next, we must check that the scale is measuring what we want it to measure. This is done by comparing the similarities of each variable to one another using Cronbach's alpha.

1. On the top menu bar, click on Analyse/Scale/Reliability analysis.
2. Click on all the variables that make up one of the scales, BUT don't forget to use the reverse-scored items in place of the originals. Put these into the right-hand box.
3. In the model section, tick "Alpha"
4. In the "Scale label" box, type in the name of the scale, e.g. Connectedness to Nature Scale.
5. Click on "Statistics" and make sure that in the "Descriptives" section, "item", "scale" and "scale if item deleted" are ticked.
6. In the Inter-item section, ensure that "correlations" is ticked.
7. In the Summaries section, ensure that "correlations" is ticked.
8. Press continue, then OK.
9. Check that the number of cases is correct in the reliability statistics table, and then check the Inter-Item Correlation Matrix to ensure that all values are positive. If there are negative items, please recheck that the reverse-scored items were added INSTEAD of the original ones.
10. Check the Cronbach's Alpha value in the Reliability Statistics table. This should be above .7 to be acceptable, but ideally, it should be above .8. If this is not the case, please continue.
11. Check the Corrected Item-Total Correlation box for values under .3. If there are any, this means that that particular question is not measuring what the rest of the scale is measuring and can be considered for deletion (But then, you cannot compare the findings to others which have used the validated scale).
12. In the column "Alpha if Item Deleted" we can see what the Cronbach's for the scale would be if a question was removed. Again, if one of these figures is higher than the final alpha value, discuss removal of the item with the research team.
13. Repeat steps 1-10 for each scale in the study and record the Cronbach's Alpha for each.

During this task, I found a new interest in using SPSS, and became more adept at utilizing the programme to manipulate and understand data. I enjoyed the process of creating this analysis protocol.

Again, I tried to explain the steps of the analysis in a way that would be understandable by a layperson.

Section 5 – Calculating Scale Scores

1. On the top menu bar, click on Transform/Compute Variable
2. In the box “Target Variable”, type in AltTotal
3. Select Alt_1 in the left-hand box and click the arrow to place it in the right-hand box.
4. Press the plus symbol.
5. Repeat steps 3 and 4 for each question in the scale.
6. Press OK. This has now created a new variable which tells us each participants’ total score for the altruism scale.
7. Repeat steps 2 to 6 for the CTN scale, the SME scale and the PEBS scale BUT replace **CTN_4, CTN_12, CTN_14, SME_8, PEB_4, PEB_6, PEB_7, PEB_14** with the new, re-coded variables that we created in the last section.

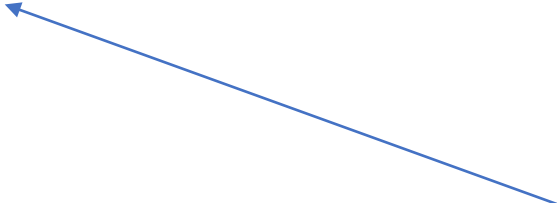
XXXX suggested here that we specify which variables were recoded, to save the reader going back and forth.

Section 6 – Regression Analyses

In order to explore how much the three independent variables (Altruism, Connectedness to Nature and Social Media Engagement) can predict the dependent variable (Pro-environmental Behaviour) we are going to run a standard multiple regression.

1. From the top menu bar, select Analyse/Regression/Linear.
2. Click on “PebTotal” in the left box and move it to the “dependent” box.
3. Click on “AltTotal”, “CTN_Total” and “SME_Total” and place them in the “independent” box.
4. In “method”, ensure that “enter” is selected.
5. Click the statistics button and select all of the following: Estimates, Confidence Intervals, Model Fit, Descriptives, Part and partial Correlations and Collinearity diagnostics.
6. In the residuals section, select “casewise diagnostics” and “outliers outside 3 standard deviations.” Click Continue.
7. Click on options and then “exclude cases pairwise.” Then click continue

8. Click on "Plots" and place *ZRESID into the Y box. Then place *ZPRED into the X box.
9. In the section named Standardised Residual Plots, ensure that "normal probability plot is selected, and click continue.
10. Click on the save button and select Mahalanobis and Cook's in the Distances section. Then click continue, and OK.
11. Then, you will be presented with the SPSS output for the regression analysis and can begin to interpret the results.



Here, I intended to add another section detailing the process of interpreting study results, but time constraints prevented me from doing so. However, in future research I feel that including this information in a protocol document would be necessary, and I will organize my time more effectively to ensure I am able to complete a project to an appropriate standard.

Analysis Protocol

Final Version

Data Analysis Protocol

Section 1 – Preparing the data file

1. Download data from Qualtrics, clicking on the SPSS option.
2. Save and rename the SPSS file appropriately, to a secure location.
3. Open the SPSS file and click on "variable view."
4. Delete the following variables (which are extraneous to the analysis).
 - Start Date
 - End Date
 - Status
 - Duration in seconds
 - Finished
 - Recorded Date
 - Distribution Channel
 - User Language
 - SC 0
5. In variable view, change the measure of the first 7 variables to "nominal."
6. Check the data variable window and look at the "Progress" variable. If there are any entries lower than 100, remove entire row of data (This means that the participant did not fully complete the study questionnaire).
7. Rename the variable "response ID" to "Participant ID."
8. Use the study codebook and the variable labels to rename each variable appropriately.
9. In variable view, go to the "values" for the variable "age group" do the following:
 - Change the value for age group 18-24 from 89 to 1
 - Change the value for age group 25-34 from 90 to 2
 - Change the value for age group 35-44 from 91 to 3
 - Change the value for age group 45-54 from 92 to 4
 - Change the value for age group 55-64 from 93 to 5
 - Change the value for age group 65-74 from 94 to 6
 - Change the value for age group 75-84 from 95 to 7
 - Change the value for age group 85 or older from 96 to 8
10. In data view, using the codes above, correct the codes for age for each participant.

Using the feedback from xxxx annotations, I corrected the errors in the document and produced this final version. This was shared with the group via Microsoft Teams.

Section 2 – Screening and cleaning the data

It is unlikely that there will be any errors in this dataset, as the data was collected online and there is less chance of human error. However, it is good practice to ensure that this is the case. In order to screen and clean the data, the procedure is as follows.

1. Checking categorical variables

- In the top menu bar, go to Analyse/Descriptive Statistics/Frequencies.
- Choose the variables "age group", "gender", and "education level", and use the arrow to move these into the box on the right.
- Click on the "statistics" button, tick minimum and maximum in the dispersion section, then continue, then OK.
- Check that the minimum and maximum values are correct for each variable (age should only fall between 1 and 8, gender should be between 1 and 4, and education level between 1 and 4).
- Check the number of missing and valid cases. There should not be any, as the participants needed to answer each question to progress in the study.

2. Checking continuous variables

- In the top menu bar, go to Analyse/Descriptive Statistics/Descriptives.
- Click on the variables that have a ruler symbol next to them (these are scale data)
- Click the options button and make sure that "minimum", "maximum" and "standard deviation" are ticked. Click continue and then OK.
- Check that the minimum and maximum values are correct for each variable (The scores on the altruism scale should fall between 1 and 20, the scores on the CTN scale should fall between 1 and 14, the scores on the social media engagement should fall between 1 and 10, and the scores on the PEBS scale should fall between 1 and 21).

3. If there are errors or outliers in the data set, please consult with an SPSS textbook for instruction on correcting these (This is very unlikely to occur).

Section 3 – Manipulating the data

In order to find out participants total scores on each scale, we must first reverse code the negatively worded items in the questionnaires. Instructions to do so are as follows.

1. Scroll to CTN_4 in variable view and ensure that the value labels match the others in the scale. Return it to 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. (We are going to recode into *different* variables to retain the original data, and this is the only one that Qualtrics recoded anyway).

2. Go to "transform" on the top bar and select "recode into different variables".

3. In the box, select question 4 on the scale and click the "old and new values" box.

4. In the left section, under "value", type in 1, and on the right, under "new value", type in 5. Then press the "add" button next to the larger box.

5. Repeat the last step adding the recodes:

- 2=4
- 3=3
- 4=2
- 5=1

6. Press continue, and in the original box, in the text box to the right, name the new variable CTN_4Rec.

7. Label the variable as "recode of CTN_4" and press OK. Now we have a reverse scored variable that will allow us to correctly calculate the total scale score.

8. Repeat steps 2 to 7 (with the appropriate names) with the following variables:

- CTN_12
- CTN_14
- SME_8 (PLEASE NOTE: The SME scale should be recoded as 1=6, 2=5, 3=4, 4=3, 5=2, 6=1)
- PEBS_4
- PEBS_6
- PEBS_7
- PEBS_14

Section 4 – Reliability Analyses

Next, we must check that the scale is measuring what we want it to measure. This is done by comparing the similarities of each variable to one another using Cronbach's alpha.

1. On the top menu bar, click on Analyse/Scale/Reliability analysis.
2. Click on all the variables that make up one of the scales, BUT do not forget to use the reverse-scored items in place of the originals. Put these into the right-hand box.
3. In the model section, tick "Alpha"
4. In the "Scale label" box, type in the name of the scale, e.g. Connectedness to Nature Scale.
5. Click on "Statistics" and make sure that in the "Descriptives" section, "item", "scale" and "scale if item deleted" are ticked.
6. In the Inter-item section, ensure that "correlations" is ticked.
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8. Press continue, then OK.
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13. Repeat steps 1-10 for each scale in the study and record the Cronbach's Alpha for each.

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1. On the top menu bar, click on Transform/Compute Variable.
2. In the box "Target Variable", type in AltTotal.
3. Select Alt_1 in the left-hand box and click the arrow to place it in the right-hand box.
4. Press the plus symbol.
5. Repeat steps 3 and 4 for each question in the scale.
6. Press OK. This has now created a new variable which tells us each participants' total score for the altruism scale.
7. Repeat steps 2 to 6 for the CTN scale, the SME scale and the PEBS scale BUT replace the reverse coded questions with the new, re-coded variables that we created in the last section. (CTN_4, CTN_12, CTN_14, SME_8, PEB_4, PEB_6, PEB_7, PEB_14).

Section 6 – Regression Analyses

In order to explore how much the three independent variables (Altruism, Connectedness to Nature and Social Media Engagement) can predict the dependent variable (Pro-environmental Behaviour) we are going to run a standard multiple regression.

1. From the top menu bar, select Analyse/Regression/Linear.
2. Click on "PebTotal" in the left box and move it to the "dependent" box.
3. Click on "AltTotal", "CTN_Total" and "SME_Total" and place them in the "independent" box.
4. In "method", ensure that "enter" is selected.
5. Click the statistics button and select all of the following: Estimates, Confidence Intervals, Model Fit, Descriptives, Part and partial Correlations and Collinearity diagnostics.
6. In the residuals section, select "casewise diagnostics" and "outliers outside 3 standard deviations."

7. Click on options and then "exclude cases pairwise." Then click continue.
8. Click on "Plots" and place *ZRESID into the Y box. Then place *ZPRED into the X box.
9. In the section named Standardised Residual Plots, ensure that "normal probability plot is selected, and click continue.
10. Click on the save button and select Mahalanobis and Cook's in the Distances section. Then click continue, and OK.
11. Then, you will be presented with the SPSS output for the regression analysis and can begin to interpret the results.

Reflective Log

During my MSc in Applied Social and Health psychology, I completed a module designed to improve and enhance my skills as a professional psychological researcher. The module required the cohort to collaborate on a real-world research project based on the current psychological literature within health. Our class was given the freedom to decide what we would specifically investigate, within the parameters of the guide statement: *“An exploration of the psychological predictors of engagement with environmentally friendly behaviours.”* I was initially quite worried about this module, and I expected to struggle with sharing responsibility for a joint piece of work. All throughout my past academic career, I had enjoyed completing assignments on my own and I was apprehensive about what issues this new, unknown group approach might create.

At the outset, our research team consisted of five students, with Ceri and Paul also involved as our research supervisors. During the first session, I felt frustrated and a little bit annoyed. I had seemingly understood the assignment brief differently than the other four students, and I felt unheard in the group. Ceri suggested that the group separate temporarily and explore the literature further. When we returned, I realised that although we were coming at the question from different angles, all five of us were essentially arguing the same thing. I also realised that my own understandings of the question were improved when I saw it from the others' perspective, and I committed to listen to my teammates more than I had been doing.

Shortly after the module began, two of our group members had to leave the project due to personal reasons, which left just [REDACTED], and me. I had mixed

feelings about this. I was worried for our classmates' situations and about how we would now "click" as a team. I was relieved, in a sense, to now have more responsibility for elements of the research process but was cognizant that a smaller group could lead to more arguments, and a more pronounced struggle for the "leader" role between myself and [REDACTED] as we are both assertive. This issue is a common one in work groups and could be considered an example of the first stage of Wheelan's Integrated Model of Group Development (Wheelan & Hochberger, 1996). At this point, the group was still unsure of what we wanted to research, and I was feeling stressed that the Expression of Interest form was due for submission very soon. Following a meeting with Ceri, we decided to research Self-Regulation Theory (SRT; Baumeister & Vohs, 2007) and its applications to health behaviours, but I felt despondent and uninterested in pursuing this direction. I also felt out of my depth and unsure of how to apply this theory to our topic. I overcame this undertaking more research on the topic of environmental issues and trying to form my own opinion of what would constitute a valuable, contemporary project. I found some compelling studies surrounding Facebook use (Kim & Johnson, 2018; Smith & Graham, 2019), which sparked an idea to explore the interplay between other social media engagement and environmental behaviours. I thought that the existing literature was understandable and interesting, and I was excited to have found a possible basis for our project.

At this time, [REDACTED] had both also been doing further individual research and had found specific areas that really interested them. When we met again as a team to talk through our ideas, I felt that both altruism ([REDACTED] interest) and connectedness to nature ([REDACTED]'s interest) were compelling and would be fascinating to study too. We came to the realisation that as a group, we could

combine our three foci, and gain a more comprehensive view on what factors affect pro-environmental behaviours (PEBS) through multiple regression. This was a “lightbulb moment” for the study, I felt relieved and gained a newfound enthusiasm to undertake the work. I think that this initial period of indecision and uncertainty taught me that while my individual contributions were important, that we could produce an even higher standard of work and research much more effectively when we collaborated together. I also came to understand that much of my frustrations were due to my limited knowledge on the SRT, and that overcoming this was as simple as taking the time to read and explore the literature further. I feel that I had been a bit egotistical and had expected research to be “easy.” This experience taught me that exploring the literature in a superficial way is not conducive to my own experience as a researcher, and that I will always have more to learn.

I feel like from this point forward, we gelled as a team much better and I felt more united with [REDACTED]. I experienced a sense of cohesion and friendship, which according to Severt & Estrada (2015) was likely a contributing factor to our ultimate success. [REDACTED] had missed a session at the start of the module, and therefore sometimes struggled to contribute to the conversations surrounding ethical considerations or psychological theory. I felt a sense of guilt about this, and felt awkward at times when explaining things, as I did not want to sound patronising or derogatory. However, I communicated this to [REDACTED], and she assured me that from her perspective, she appreciated being given “easier” tasks such as writing the advertisements for the study and starting our Gantt chart (Evidence B). Also, I feel that [REDACTED] and I had started off on the wrong foot, but throughout the course of the project, I found that I began to want her perspective on our tasks, and I came to value her opinion and guidance. As a small MSc group of just three students, we

also talked about our lives outside of the project regularly, and this solidified our mutual respect and sense of unity. Through effective communication (Harris & Sherbloom, 2018), I came to appreciate my team members as individuals, and to comprehend how our differences added a valuable balance to the finished project. In future research, I will endeavour to build and maintain positive relationships with my peers from the outset.

As we were a small group, all three of us contributed during every stage up to the release of the study. We had a shared online space where we could collaborate on documents and communicate remotely. We utilised this to jointly create and edit our online survey through Qualtrics (Evidence B). We also collaborated on making adaptations to our survey by checking scale validities and undergoing the piloting process (Evidence C). My personal contributions to the project were varied. [REDACTED] complimented me on my academic writing, and I took on the role of “writer” in the group. I felt slightly embarrassed by this, but proud to have a unique and seemingly valuable trait to offer. I finalised the documents including the Expression of Interest form and the ethical approval application (Evidence A), which was a challenging but rewarding experience. The ethics form in particular was intimidating, and I panicked that we had not fully considered all the risks that the project could pose. In order to understand the ethical implications, I had to also strive to understand and interpret [REDACTED] specific focuses. This communication was useful to me personally too, expanding my understanding of the study as a whole.

Two tasks which I completed in a more individual capacity were finalising the SPSS codebook, which was started by [REDACTED] (Evidence D) and creating the analysis protocol for our dataset (Evidence D). I used the data from our pilot tests to complete the SPSS codebook and realised that the process was more complicated than it

seemed. I felt a bit apprehensive when I realised how much of the codebook was incomplete, and how detailed the analysis protocol needed to be, but also welcomed the opportunity to enhance my SPSS skills and gain experience creating professional research materials. I updated the codebook using the pilot data, and utilised class materials, textbooks, and my previous knowledge of SPSS to create the analysis protocol. During these tasks, I felt a sense of worry that I would miss something or get something wrong. I therefore asked [REDACTED] to proofread the documents for me when complete. I enjoyed the process of editing/creating these, and as I worked through them, I gained more confidence in my own knowledge. I started to realise how much I had learned during both my undergraduate and masters degrees, and felt a sense of accomplishment. I was elated when there were few errors to correct and felt proud of my ability to produce these materials well. In future, I look forward to utilising SPSS within applied research and continuing to progress my capabilities.

In conclusion, I feel that this module has provided me with a multitude of professional and personal research skills that will aid me in a professional career. Being able to undertake a study first-hand has allowed me to understand the multi-faceted intricacies of teamwork, which was my biggest concern and challenge. I initially dreaded the thought of not being in control of the assignment, but through the process, I started to reflect on my own stubbornness. One of the first lessons I learned during this module was that I should have a more open mind to other peoples' input and make more effort to consider their thought processes. This would not only save time and tension, but also expand my own understanding and personal knowledge. In addition to improving my interpersonal skills, this module has made me appreciate the importance of stringent ethical guidelines. I had previously

considered an ethics form to be a box-ticking exercise, but, knowing that this study was going out into the real world made me seriously consider any possible adverse outcomes for the participants or the team, and to consider the BPS Code of Ethics and Conduct (2018). This change in perspective could be attributed to the mediating role of professional and organisational commitment, as proposed by Dwivedula et al (2016). I have also had the opportunity to polish the practical skills necessary in a research role. I have been involved in every stage of the study and have gained a proactive understanding of handling large datasets, using SPSS, and conducting statistical analyses to a professional standard. I feel that completing this module has been an invaluable experience and has allowed me to become a confident, capable, and keen researcher, who will continue to develop my skills and strive for success within the field of applied psychology.

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