Why do individuals conduct environmentally friendly behaviours? The case of Wadebridge.

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Abstract

This paper seeks to examine the relationship between an individual's network and their (pro-)environmental awareness and behaviour, putting four hypotheses forward for testing. As such, we take social capital theory and attempt to use it to analyse results from a survey conducted in the medium-sized town of Wadebridge, Cornwall. In so doing, it is hoped that we are able to provide insights into some of the factors that can potentially affect individual choices and inform the operation and foci of community-based organisations, such as the Wadebridge Renewable Energy Network (WREN). The conclusion is reached that individuals' networks, and particularly their informal objective social ties, exert a great deal of influence upon behaviours and awareness through their produced narratives which, in the case presented, are found to be largely positive with regards to the environment.

Keywords

Social capital; environmental behaviour; environmental awareness; community-based organisations; WREN.

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Introduction

The aim of this research project is to examine the links between social capital and environmentally friendly behaviours within Wadebridge, a town in North Cornwall with a population of 7,900 (Cornwall Council, 2014). Social capital can be defined simply as networks that bring individuals together and that can influence or reinforce certain ideas or opinions. For this research it is also important to recognise that behaviour is hard to understand, measure and analyse. As such we have not used a formal definition for pro-environmental behaviours, instead we have counted a multitude of actions ranging from switching off a light to using public transport instead of driving.

We believe that this study holds the potential to produce insights into a complex issue through creating an understanding of why individuals may partake in pro-environmental behaviour. It is hoped that the theoretical application to our data set will assist community-based organisations like the Wadebridge Renewable Energy Network (WREN) in their efforts to promote behavioural change, or to influence and inform the opinions of individuals within their localities. In so doing, perhaps there will be a greater shift towards renewable and sustainable consumption within these communities, resulting in a reduction of environmental degradation, albeit on a small scale.

In order to address our research aims, we selected a qualitative case study approach using face-to-face surveys carried out by a team of researchers in the specified location. This methodology will be discussed later in the report preceding an analysis of the collected data and the testing of our hypotheses. The conclusion will then be reached that social capital, and informal networks in particular do promote pro-environmental concerns and behaviours, at least within the case of Wadebridge. Prior to this, however, we will explore some of the

existing literature in this field, subsequently developing our own conceptualisation of social capital. It is to this we now turn.

Literature Review

What is social capital?

Social capital refers to the social characteristics, such as norms and networks that can improve the efficiency of society by facilitating coordinated actions (Putnam, 1993; Jones et al, 2009). It can be categorised into three broad types: bonding, which is a network of individuals with a common identity; bridging, which concerns the links between different societal groups; and linking, which is about trust across different levels of governance (Wolf et al, 2010; Smith et al, 2012). With regard to linking capital, at least in the terms of Newton (2006), trust in government is considered as being independent from social capital. However, the author could be said to undermine social capital theory by not fully conceptualising it or being unaware of the broader literature.

Putnam (1995) adds to his definition by describing social capital as social trust that facilitates coordination and cooperation for mutual benefit. Putnam's further definition of social capital brings it into a different light; describing social capital as generalised reciprocity, implying that participation in communal activities can bring benefits to the individual as well as to the community. Smith et al (2012) like Putnam (1995) also focus slightly more on the individual, arguing that social capital involves an individual's inclination to gain access to resources, in the form of ideas, information or support through their existing social networks.

How does social capital promote environmental concerns?

Jones et al (2009) proposed the influence of social capital components such as institutional trust, social networks, norms and civic participation in the tendency of individuals to act in a collective manner. Higher stocks of social capital may also facilitate environmental management significantly. Putnam (1995) shows a slightly different perspective, seeing social capital as social trust, which facilitates cooperation for mutual benefit. Therefore individuals show environmental concern, which is promoted through reciprocity. In other words, through engaging with others, individuals cooperate for their own benefit, but also for that of the wider community in the shorter and longer term. Smith et al (2012) share a similar idea to Putnam (1995) describing social capital further as trust from social ties involving emotional feelings of reciprocity, a way to obtain resources and fulfil needs. Smith et al (2012) also mentioned that bonding ties might produce incentives to change behaviours due to potential effects of environmental degradation upon community or individual identity and economies.

In spite of arguments that suggest social capital may strengthen conservation efforts, Brooks' (2010) study on the social and economic perspectives towards conservation led to the conclusion that economic variables were the best indicators of environmental behaviours, not social capital.

Of all the literature reviewed, Brooks (2010) was the only researcher to make such a claim. Macias and Nelson (2011) similar to Jones et al (2009), Putnam (1995) and Smith et al (2012) showed an understanding of social capital promoting environmental concerns. Macias and Nelson argue that 'individuals with greater diversity of social connections are most likely to be influenced by ecological perspectives grounded in conservation and environmental concern' (2011:562). Therefore, social capital promotes environmental concern as social connections show signs of spreading information and awareness about environmental issues.

The following conceptualisation will draw upon the literature reviewed here and present our own understanding of social capital which will be used to interpret the data we collected. We will also mention how our understanding relates to the current body of literature.

Conceptualisation

In the context of this research, social capital is broadly considered to relate to the extent an individual is embedded within social networks and is participating in social organisations. As a result this report draws upon the idea of bonding and bridging networks (Wolf et al, 2010; Smith et al, 2012), defined above.

More specifically, bonding networks are taken as comprising an individuals' informal objective social ties, that is, their associations with friends and family (Smith et al, 2012) which can help produce, and be produced by a sense of community. This is perhaps better understood through a discussion of 'place meanings' (Smith et al, 2012) whereby a particular space or area is attributed a certain meaning by individuals, creating both communal and individual identities and, therefore, strengthening bonding networks.

The existence of these networks, it has been found, can produce narratives detrimental to levels of concern or to behaviours by limiting access to resources (Wolf et al, 2010; Smith et al, 2012) about, in our case, the environment. This line of argument is to be questioned in this report, as will become evident below. This is because bonding networks and their produced narratives and norms are here taken as being potentially positive, influencing individuals in such as way so as to make them concerned about the possible impacts of environmental degradation upon the community and their identity, leading to a want for more resources (Smith et al, 2012).

To expand upon this point, resource access and stock can be enhanced through membership or communication with social groups and organisations. In other words, through formal objective ties in the form of bridging social capital (Smith et al, 2012; Wolf et al, 2010). It is this membership-based participation which serves as an indicator of how embedded an individual is within wider social networks. This opens up the possibility of a greater positive influence of social capital on concerns and, perhaps, behaviours as well (Wolf et al, 2010).

In this research therefore, in addition to assisting information flows and access to other resources (Smith et al, 2012; Putnam, 1993), membership is taken in general terms to increase the want of those involved to cooperate for mutual benefit through fostering norms of generalised reciprocity (Putnam, 1993, 1995), as mentioned previously. Moreover, by this creation of links between bonding and bridging networks, membership organisations can assist in building trust between individuals, again increasing the potential for cooperation as trust breeds cooperation, cooperation breeds trust (Putnam, 1993).

In summary, social capital is here conceptualised as the networks that bring individuals together. Bonding networks exist between those with a shared identity and can be observed through informal social ties. These networks produce narratives that exert influence over individuals' environmental awareness, behaviour and ability or willingness to access resources such as information. These effects may not be negative and can be further promoted through engagement in social organisations, creating bridging networks. To put another way, involvement in social networks and organisations holds the possibility for the production and reproduction of narratives and norms based upon pro-environmental awareness and behaviour, encouraging communication, reciprocity, trust and cooperation within a geographical area.

Although the understanding of social capital conveyed here does not greatly depart from the reviewed literature, there are still some differences in our interpretation. For instance, we perhaps take a narrower view of bonding and bridging networks as comprising largely of an individual's informal and formal social ties respectively. Bonding networks, or informal ties are not considered to be negative with regards to their produced narratives (Wolf et al, 2010). Instead, we infer potential for positive environmental narratives to be produced, in part stemming from a communal identity (Smith et al, 2012). Moreover, bridging networks made up of membership to social organisations or, in other words, formal social ties, are believed to be facilitative of informal ties through enhancing reciprocal cooperation and resource access.

Hypotheses

H1: *Social capital promotes environmental awareness. (The more individuals engage with their social networks, the more likely they are to show environmental concerns).*

Macias and Nelson (2011) argued a similar hypothesis that individuals with a variety of social ties are the most likely to be influenced by environmental ideas and practices.

Our research aims to develop an understanding as to whether participation in social networks does have a direct effect on an individual's environmental concern. We will use our survey to find out what networks are present within Wadebridge and whether they make the individuals involved more environmentally concerned. As a group we decided environmental concern can be something as simple as choosing to have a conversation about the environment with other members of the community. This follows from what was said above about behaviour as both can be equally difficult to understand and measure.

We believe that question five, which asks how often individuals discuss environmental issues with their (in)formal ties, tests this hypothesis (see appendix 1 for a copy of our survey and its questions); therefore the data from this question will be necessary in order to examine H1's accuracy.

H2: *Social capital promotes environmentally friendly behaviours. (The more individuals participate in their social networks, the more likely they are to conduct pro-environmental activities).*

Brooks suggested a similar hypothesis that social capital potentially improves environmental behaviour by 'reducing the fears of investing in the common good' (2010:1501). In addition, Jones et al argue that 'in communities with higher stocks of social capital there is a tendency among citizens to act in a collective manner for the conservation of natural resources' (2009:513).

Through the survey we seek to determine whether within the population of Wadebridge social ties have a direct effect on individual's environmental behaviours.

The specific questions that we feel will best test this hypothesis are questions eight, on the frequency of certain pro-environmental behaviours, and five, as mentioned above.

H3: *Social organisations are instrumental in various ways, e.g. by promoting a sense of belonging (or community feel) or through serving as a source to provide resources.*

Wolf et al suggest that bonding networks can be detrimental and create a 'knowledge deficit' (2010:54) but, depending on the narratives produced, they can interact with other networks thereby enhancing resource access, knowledge and positive behaviour. In addition, Smith et

al (2012) suggest that social capital involves an individual's capability to access resources, such as ideas and information via their social networks.

We will use our survey to find out whether social organisations provide the population with a sense of community. In addition, we will assess to what extent individuals feel social organisations provide them with adequate information on the environment. In short, how formal ties influence individuals' opinions and behaviour.

H4: *Individuals' informal social ties are more influential than formal ties in promoting environmental concern and behaviour.*

Drawing upon the work of Smith et al (2012), we can distinguish between informal and formal objective social ties, as discussed above. We believe that this is an interesting distinction, especially given that we can incorporate WREN, as a membership-based formal tie, into our research. This distinction can also be assessed by using responses gained from question five, examining how regular environmental discussions are with both formal and informal connections, in relation to findings from question eight on conducted behaviours.

Methodology

The focus of our report began by building a research design around environmental behaviour within Wadebridge. This research is a single-N case study (Halperin and Heath, 2012) developed with the population of the town in mind. One of the main benefits of, and reasons for choosing a single-N study is the way in which it allows the researcher to launch an in-depth exploration of a certain issue or event, creating an understanding of how and why something is, or is not (Yin, 2014). Further to this, research along these lines maintains a relevance to the real-world given that the study is conducted within the issue's context, again

helping to generate knowledge about a particular complex phenomenon (Yin, 2014). A case study approach also enables us to utilise multiple methods in our research including the use of surveys, discussed below, in trying to draw practical conclusions.

As part of the research design development the group made a visit to Wadebridge as guests of the Wadebridge Renewable Energy Network (WREN). Whilst there we were informed of the work that WREN do in the community and what some of their goals are. Following on from this we spoke to local business owners and managers to gauge the extent to which they are aware of WREN's activities, how they view WREN and what they think of renewable energy in general. Through this visit it became clear that making WREN the primary focus of our research could lead to too broad a topic, especially given the range of issues they focus on and complexities in people's perceptions of the organisation. Subsequently, we decided to move towards gaining a greater understanding of the links between social capital and environmental concern and behaviour within the population at large.

To be able to test the hypotheses outlined above, we decided upon a research design which called for qualitative data on the population of Wadebridge. From this we were able to develop a methodology for the study where we decided to use survey instruments as our means of data collection. Survey-based methodologies have the advantage of being an 'extremely efficient method of obtaining information from people by asking questions' (Halperin and Heath, 2012:230), employing 'sampling procedures that allow a relatively small number of people to represent a much larger population' (Shuman and Presser, 1996:1). The limitations in terms of resources, time and organisational capacity to conduct data collection meant that survey instruments were the right choice to complement our research.

When developing the survey we placed firm limits upon ourselves as a means of keeping the research design relevant, efficient and attainable. The first one of these related to

questionnaire size, which we decided should not extend beyond one double sided piece of A4 paper. This decision was made due to an awareness of non-response bias, where potential respondents refuse to take part in the study. By developing a questionnaire which is relatively short, we assumed that more potential respondents would not decline the survey on the basis of limited time. This self-imposed limitation had knock-on effects to the survey design, meaning that we were limited to a total of sixteen questions to gather the required data from the population. Multiple questions out of the survey have been taken from a piece of research conducted by Saunders (2010) entitled 'The Role of Community–based Initiatives in Energy Saving'. They were selected in light of the fact that they were relevant and applicable to our research design, and have the added advantage of being proven in academic peer-reviewed publications. This was particularly beneficial to our design as we lacked the time to conduct a pilot of our own survey, checking for flaws such as wording errors and general ambiguities. In other words, by drawing upon tested research we were able to have a certain degree of confidence in the effectiveness of our survey to collect the data we required.

The second limitation we put on ourselves was the sole use of closed questions within the questionnaire design. This again was a conscious decision based around the limitations of resources and time; closed questions, it was decided, are easier to analyse. This type of question also has the added benefit of ease of use and accuracy, both of these making errors less likely, thus making the data more reliable. The survey questions can be divided into three sections: firstly, we analysed the social networks of the individual; secondly, we looked at their degree of environmental concern and behaviour; and finally, we noted the demographics of the individuals; these questions were at the end of the survey as we felt that they would be the most sensitive for respondents to answer and may potentially turn them away before any useful data had been collected.

The third major decision we made was to conduct the surveys face-to-face in Wadebridge. There were other options at this stage, the primary option under consideration being the use of mail-out surveys using WREN's database of members, which currently totals over 1000. This idea was discarded on the basis that it would induce an unaccountable and unacceptable amount of selection bias within the data. This is due to our presumption that members of WREN would already be showing relatively high levels of social capital and pro-environmental behaviour.

The decision to use face-to-face interviews to conduct the survey in itself does nothing to remove selection bias from the data collection. Selection bias has to be countered to provide each individual within the population an equal chance of being surveyed. To accommodate this decision, we made further developments to our methodological approach. Firstly, we decided to conduct the survey on a Saturday, believing that it would remove the potential loss of people whom are employed, or caring for the elderly or young children. Secondly, we decided to use a system of 'pointers' and 'interviewers'. This decision was based around the idea that, when conducting face–to-face surveys, interviewers are more likely to ask approachable looking people to be questioned. When conducting our survey we used one pointer and four interviewers, the pointer's role was to count the nth person to pass them (n being dependant on the degree of footfall in that location) and send over an interviewer to try to collect the data.

The survey was conducted on Saturday 28th February 2015, and the selected location was at the bottom of Molesworth Street, the high-street and town centre for Wadebridge. This decision was based on the idea that the area would have the highest degree of footfall. The decision was made to have four as n^{th} number to pass the pointer as while footfall was at a reasonable level, there were not as many people around as we had hoped. Towards the latter stages of the day we saw an increase in the numbers of non-respondents, we contend that this

was due to the effects of poor weather; people were less likely to stop and speak to us as it was windy and had begun to rain. At this point a decision was made to change location to a covered shopping arcade just off The Platt, no other changes were made to the methodology.

When approached, potential survey respondents were all addressed in an identical manner, with each interviewer having a pre-defined spiel to introduce themselves, the survey, its focus and the data protections in place (see appendix 2). Further to this all people present on the day wore University of Exeter student identification badges and were holding University of Exeter clipboards. This decision was made to again reduce the potential for non-response on the basis that we could look like either charity fundraisers or commercial researchers. At this stage, and prior to the formal survey instrument taking place, potential respondents were asked if they were from Wadebridge, as this was the population we were seeking to conduct research upon. If the answer was positive then we would conduct the full survey, and if negative we thanked them for their time and marked them down as 'not from Wadebridge', a separate category to non-response.

Representativity of the Survey Data

When conducting our survey within Wadebridge we had a response rate of thirty out of one hundred and one approaches, giving a total response rate of thirty per cent. Of the non-responses, eighteen were ruled out of the survey through living outside of the designated population area. We also looked at the gender of the non-respondents, and when looked at in proportion to those who were approached there was a higher degree of non-response among the female population (see table 1).

Through combining the demographics which we were able to see in our own survey with the

population demographics of Wadebridge seen in the 2011 census, we are able to examine the representativity of our data. The population of Wadebridge was 7,900, of which around fifty five per cent were female and the mean age was approximately forty seven (Cornwall Council, 2014). When looked at in comparison with the data which we collected we can see that there are some consistencies. Within the data collected we had roughly a fifty five per cent male positive response rate, however when this is combined with the non-response data, fifty five per cent of the people we approached were women – which is consistent with the population at large. However, our modal average age range was '60+', closely followed by '41-60', which is not as representative of the average population age of forty seven as it could have been.

Non-response total:	53
Non-response male:	25
Non-response female:	28
Doesn't live in Wadebridge:	18

Table 1: Showing the demographics of non-respondents.

Data Analysis

Formal Social Ties and Behaviour

As part of our survey, we asked how often respondents engaged in certain types of pro-environmental behaviour and community-based organisations. When comparing our results on individuals' awareness and communication with local groups (question three), to question eight on behaviours, we found that members of local community organisations were engaging in such activities at a higher rate by 1.6%. This suggests that being a member of a local

organisation does not necessarily influence pro-environmental behaviour to the extent suggested by H3. However, if we then expand this figure to incorporate those who have heard of but never contacted any of these groups and those who have contacted them, the comparison to those who have never heard of any of the organisations is more significant. By doing this, we infer potential in terms of how individuals know what is going on around them. They are informed and/or are willing to find out about the groups and networks present within the local community. In other words, individuals demonstrate a limited but not absent engagement or embeddedness within the community.

Put another way, there is potential for individuals to be engaging with, and being influenced by the wider social networks present within Wadebridge, expanding the stock of resources available to them, as is suggested by H3. Moreover, although only a slight difference is found with regards to behaviour, this perhaps indicates that existing formal ties generally promote positive narratives when it comes to the environment. This may therefore support H1 and H2 through enhancing environmental awareness, concern and behaviour.

Membership and a Sense of Identity

Question	Time lived in area (Q1):	Community identity (Q2):	Feel part of community (Q4.1):	Environmental behaviour (Q8):
Respondents	10 years +	80% positive	Yes	40% positive
	10 years +	100% positive	Yes	88% positive
	10 years +	100% positive	Yes	73% positive
	10 years +	80% positive	Yes	73% positive
Average (%)	10 years +	90	Yes	68

Table 2: Relation between time lived in a place, community feel and pro-environmental behaviour. (Note that the respondents included here are also members of a local organisation).

From this data (see table 2), we can see how living in Wadebridge for over ten years and being a member of a local group correlates to a high sense of community and pro-environmental behaviour. It would also seem that they all engage in pro-environmental behaviour quite often, however there are notable exceptions to this rule..

Following from the preceding discussion of formal social ties and behaviour, it is possible here to similarly infer that membership, a formal tie, can promote pro-environmental narratives alongside identity, at least for the most part. More specifically membership, as bridging social capital, increases the resources that individuals are exposed to on top of the existing bonding networks that give people a sense of identification with Wadebridge and perhaps Cornwall more generally. In short these two factors, membership and identity, contribute to positive environmental behaviours, thus supporting H2 and H3.

Reasons for, and Influences behind Behaviours

Reasons for Pro-Environmental Behaviour	Percentage (%)
Save money	82
Friends are concerned about saving energy	72
Help prevent climate change	66
Friends within the community are concerned about the environment	65
To see how I can save energy	57
Friends influence	48
Close family influence	43
Partner influence	40
Colleague/other student influence	39
Influenced by community	39
Influenced by people in an organisation I am part of	35
Other relatives	30
WREN	20

Table 3: Factors that influence pro-environmental behaviour.

From table 3, we can see that social networks play an important role in influencing environmental behaviours. Out of the thirteen reasons given, ten rely on social networks of some sort. This therefore implies that social ties are a factor in people's ideas and activities as far as the environment is concerned, which is in line with H2.

What is particularly interesting here is that the data begins to show a slightly different picture to the above findings as we can start to observe some distinctions between the impact of formal ties upon individual's behaviours, with those of informal ties. This is shown by the higher percentage of respondents referencing friends or family as influencing their actions, as

opposed to more formal membership-based organisations. As a result, H4 becomes more relevant to our discussions.

Discussing the Environment and Influencing Behaviours

How often individuals discuss environmental issues with their social ties (Q5) –

Score	1 (Not at all)	2 (Rarely)	3 (Sometimes)	4 (Quite a bit)	5 (Very often)
Frequency chosen	24%	15%	17%	17%	15%
Cumulative averages	39%		49%		

How often environmentally friendly behaviours are conducted (Q8) –

Score	1 (Not at all)	2 (Rarely)	3 (Sometimes)	4 (Quite a bit)	5 (Very often)
Frequency chosen	8%	8%	13%	17%	49%
Cumulative averages	16%		79%		

Tables 4 and 5: Showing aggregate raw data on communication with networks (4) and pro-environmental behaviour (5).

Analysis of the frequency of environment-related discussions shows that there exists quite high levels of communication on environmental issues within individuals' networks. Taken in relation to their behaviours, we can see that there is some correlation between levels of communication within a network and engagement in pro-environmental behaviours. This supports H1 and H2.

Upon further examination of question five, we start to be able to draw more out of our data set:

Discussion of environment with…:	Positive responses ('3' or above):	Environmental behaviour (Q8):	Correlation:
Friends (Q5.4)	63%		80%
Colleagues or fellow students (Q5.5)	57%		72%
Those in the same community group (Q5.6)	40%	79% positive	51%
WREN (Q5.7)	17%		21%

Table 6: Social ties and their influence on behaviours.

From table 6, we can see that those who discuss environmental issues with their friends have higher levels of pro-environmental behaviour. In other words, social networks, as informal social ties, can serve as indicators of how embedded and influenced individuals are. From this the supposition made at the end of the conceptualisation section is becoming more identifiable within the data, since we can now deduce that it is an individual's informal social ties that are more influential than their formal ties in promoting environmental concern and behaviour. As a result, this data seems to support H4.

Narratives Promoted by Friends

Extent friends within the community are concerned about the environment (Q7.3) –

Score	1 (Not at all)	2 (Hardly)	3 (Relatively)	4 (Quite a bit)	5 (Very much)
Frequency chosen	10%	10%	37%	30%	13%
Cumulative averages	20%		80%		

Table 7: Environmental concern amongst friends.

Following from the last analysis, we can expand our discussion here by taking informal ties and looking at the narratives they produce. In so doing, we can see from the results in table 7 that respondents generally perceived their friends as being (relatively) concerned about the environment. This indicates that positive, pro-environmental narratives are promoted within existing social networks, particularly those of the informal type.

The 'Green' Scale

Out of those who said they discuss environmental issues with friends, colleagues and others in a community group that they are involved in, be it rarely or very often, eleven out of fourteen selected themselves as '7' or above on the 'green' scale . The scale ranged from one to ten, with ten being very green and one being not green at all. This indicates that seventy nine per cent of people with stronger social ties within the community have a strong sense of being 'green' and pro-environmental. When comparing against those who have less social ties within the community, we found that five out of sixteen had selected themselves as '7' or above, which equates to thirty one per cent. This indicates that those with a lower number of social ties within the community are less likely to consider themselves as pro-environmental. This supports our H1 and H2.

Discussion

Having analysed our data, we will now bring it into a discussion of our hypotheses:

H1: Although the analysis presented above may be quite limited with regards to environmental awareness, from our findings it can be argued that it is promoted by the networks individuals are involved in. We can draw this point from the way in which

respondents believe that their friends have concerns over the environment and by inferring awareness as a factor behind individuals' pro-environmental behaviours.

H2: From our data it is possible to see how the influence of objective social ties and networks positively correlate with pro-environmental behaviours. Further from this we can assume that the networks that individuals are engaging in, at least to an extent, hold positive environmental narratives helping to influence the actions of the individual within the community.

H3: These findings support the assertion that social, community-based organisations are instrumental in various ways, helping to promote a sense of identity and belonging to a community. Through interactions and membership to these groups within Wadebridge, we can also see how they serve as a source to provide resources. Put differently, the data suggests that these formal ties do exert an influence on behaviours specifically in relation to pro-environmental activities.

H4: Social networks, as in informal social ties, seem to serve as indicators of how embedded and influenced individuals are within and by the community. We have found that it is an individual's informal social ties that are more influential than their formal ties in promoting environmental concern and behaviour. This can be observed by the way in which respondents placed friends over other ties in both frequency of discussions about the environment and in terms of how they share concern for the environment. As is shown above, these findings correlate positively to pro-environmental behaviours.

Methodological Challenges and Conclusions

Throughout the process of our research design we have been aware of the limitations to our methodology and the improvements which we could make to both expand the research and also to reduce the effects of issues which have become apparent to us. The biggest issue in our research has been resources, or lack thereof; in particular shortages of both time and hands have had wide ranging knock-on effects. The biggest of these effects can be seen in the data set, which we recognise is not of a sufficient size to thoroughly stand up to examination. If it had been possible we would have liked to have taken our survey to Wadebridge on a number of occasions, on different days and at different times. Again, in a similar vein of increasing the data set, we would have liked to have had multiple survey stations within Wadebridge. This would have meant more teams of pointers and interviewers, something which was not possible due to the size of our research group. Both of these suggestions are not significant changes from the methodology we have designed and consequently would not have led to any issues within our general approach. They would, however, have meant we had a larger and perhaps more representative data set. A larger data set would not just have meant a higher degree of applicability to the location; it would also have meant we could have run further statistical analysis of the variables using software such as SPSS.

There were also limitations with the survey questions themselves due to the one to five scale employed. This was caused as each option was not attributed a specific meaning before conducting the fieldwork. As such, difficulties pertaining to how the respondents distinguish between the points on the scale were encountered, impacting later upon our own understanding of the collected data. Furthermore, upon conducting our survey, we found that that certain questions within the questionnaire were overcomplicated by the number of options available. We also found that some of these options generated confusion amongst

respondents, subsequently effecting the answers given. In addition to this, when analysing the data, we neglected those who responded 'not applicable' to certain questions. Although this did not impact our data analysis, it does not take into account every response given hence why cumulative percentages in some tables do not always equal one hundred.

In terms of our methodological approach to data collection, we have come to realise that further options could have been available to us. With the benefit of hindsight we could have conducted a short face-to-face interview with potential respondents in conjunction with a longer mail back survey. The advantages of this particular mixed methodological approach in comparison to that used are numerous, as however are the drawbacks. The first of the positives we could have seen from this approach is that it would have been possible to spend less time per respondent conducting the face–to-face element of the survey. This would have meant we could survey more people in less time and with greater efficiency, consequently making a larger and more representative data set possible. Further to this, a longer mail back survey would mean that we could remove the limits we put on ourselves in terms of survey length and question number total. A final advantage would be the fact that we could test the representativity of the data, and even nullify any interviewer effects (Schuman and Converse, 1971). However, we would still have faced difficulties posed by question wording and ordering effects, both of which can influence the answers that respondents give thereby skewing the data set (Halperin and Heath, 2012).

While this option is often considered the 'gold standard in survey research' (Halperin and Heath, 2012:248) it is also even more heavily resource dependant than our approach. To make mail back surveys more appealing we would have needed to make them free-post to return, something which was beyond our resource framework. Further to this, the constraints upon us in terms of time would have meant waiting for mail back surveys was impractical.

This mixed methodological approach would have also meant both data input and analysis would have taken longer to complete.

The Data

Despite having some success in proving our hypotheses, much of the data analysed came back inconclusive or insignificant. This represents one of our main weaknesses and is attributable to our data set being too small to run further statistical analysis on and draw full analyses. This was hindered further by the subjectivity present in interpreting the one to five scales employed, as mentioned above. Should we have had a longer period in which to conduct our research, we would have hoped to have completed a pilot of our survey. This may have improved its design and the questions present, benefitting the study in terms of the data that could be gained and, therefore, the analysis as well.

Our Conclusions

Through our data we have proven all four of our hypotheses. It is therefore possible to argue that the networks in which individuals' are embedded do promote relatively positive narratives with regard to environmental awareness, concern and behaviour. This finding is counter to conclusions reached by Wolf et al (2010) and, to a lesser extent, those of Smith et al (2012) as well. In other words, individuals conduct environmentally friendly behaviours as a result of the influence of those around them.

With regards to Wadebridge and WREN specifically, we would suggest that networks present within the area seem to be quite pro-environmental already. This is particularly true if we consider informal social ties and the narratives they produce. Through the data presented above, we can argue that WREN may not be able to further promote environmental awareness and/or behaviour simply through formal, membership-related ties. Instead, it is our

opinion that it is important to pay attention to building and strengthening informal ties, as well as contributing to the enhancement of the existing communal identity. This may help WREN gain a greater acceptance in Wadebridge and facilitate efforts in trying to achieve their various goals, now and in the future.

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Appendix 1: Survey

1. How long have you lived in Wadebridge?

Under 1 year ☐

1 – 5 years ☐

6 – 10 years ☐

Over 10 years ☐

2. Do you feel that…

	Not at all 1	2	3	4	Very much 5
You have a strong sense of community?	☐	☐	☐	☐	☐
You take interest in community issues?	☐	☐	☐	☐	☐
You can influence decisions in your local community?	☐	☐	☐	☐	☐

3. In the past year, have you had contact with any of the following local organisations? (*If not a member of any of the below, go to question 5*).

	Never heard/ unaware of	Heard of but never contacted	Contacted	Member
Parish/town council	☐	☐	☐	☐
Religious organisation	☐	☐	☐	☐
Sports club	☐	☐	☐	☐
Women's/ men's group	☐	☐	☐	☐
WREN	☐	☐	☐	☐
Others (specify)				

……………………

4. If a member of any of the above, why? (*Tick all that apply*)

To feel part of the local community ☐

To socialise with the wider community ☐

To network for business ☐

For other reasons (specify)

……………………………………

5. On a scale of 1 – 5, how often do you discuss environmental issues with the following? (*If all never or N/A, go to question 7*).

	Never 1	2	3	4	Very often 5	N/A
Partner	☐	☐	☐	☐	☐	☐
Close family	☐	☐	☐	☐	☐	☐
Other relatives	☐	☐	☐	☐	☐	☐
Friends	☐	☐	☐	☐	☐	☐
Colleagues or fellow students	☐	☐	☐	☐	☐	☐
People in a (community) organisation I'm involved in	☐	☐	☐	☐	☐	☐
WREN	☐	☐	☐	☐	☐	☐

6. To what extent have each of the following influenced your opinions on environmental issues?

	Never 1	2	3	4	Very often 5	N/A
Partner	☐	☐	☐	☐	☐	☐
Close family	☐	☐	☐	☐	☐	☐
Other relatives	☐	☐	☐	☐	☐	☐
Friends	☐	☐	☐	☐	☐	☐
Colleagues or fellow students	☐	☐	☐	☐	☐	☐
People in a (community) organisation I'm involved in	☐	☐	☐	☐	☐	☐
WREN	☐	☐	☐	☐	☐	☐

7. To what extent do you agree or disagree with the following…

	Not at all 1	2	3	4	Very much 5
I have access to reliable information on environmental issues	☐	☐	☐	☐	☐
Environmental campaigning organisations provide reliable information about environmental issues	☐	☐	☐	☐	☐
Most of my friends within the community are concerned about the environment	☐	☐	☐	☐	☐

	Not at all 1	2	3	4	Very much 5
Most of my friends are concerned about saving energy.	☐	☐	☐	☐	☐
Individual action can make a significant contribution to solving environmental issues	☐	☐	☐	☐	☐

8. How often do you engage in any of the following? (*If not at all or N/A for all the below, go to question 10*).

	Not at all 1	2	3	4	Very often 5	N/A
Turning the thermostat to 18 degrees or lower	☐	☐	☐	☐	☐	☐
Only fill the kettle with as much water as needed	☐	☐	☐	☐	☐	☐
Use public transport instead of driving	☐	☐	☐	☐	☐	☐
Eating locally grown food	☐	☐	☐	☐	☐	☐
Turning appliances off stand-by	☐	☐	☐	☐	☐	☐
Switching off the lights when no one is in the room	☐	☐	☐	☐	☐	☐
Recycling	☐	☐	☐	☐	☐	☐
Buying energy efficient products	☐	☐	☐	☐	☐	☐
Other						

…………………………………………………………………

9. Why do you engage in the above activities?

	Not at all 1	2	3	4	Very much 5
Help prevent climate change	☐	☐	☐	☐	☐
Save money	☐	☐	☐	☐	☐
Influenced by member of the community	☐	☐	☐	☐	☐
To see how I can save energy	☐	☐	☐	☐	☐

10. Some people use the word 'green' to indicate how environmentally friendly they are. Where would you place yourself on this scale?

Not green at all 1	2	3	4	5	6	7	8	9	Very green 10	Don't know
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

11. Are you:

Male	☐
Female	☐
Other	☐
Prefer not to say	☐

12. How old are you?

18 or below	☐
19 - 25	☐
26 - 40	☐
41 - 60	☐
Over 60	☐
Rather not say	☐

13. What is your employment situation?

In full-time work	☐
In part-time work	☐
Self-employed	☐
In full-time education	☐
In part-time education	☐
Unemployed/between jobs	☐
Housewife/househusband	☐
Retired or unavailable	☐
Rather not say	☐

14. What is your highest level of qualification?

Postgraduate degree	☐
Undergraduate degree	☐
A-levels	☐
GCSE	☐
BTEC	☐
Equivalent or other	

…………………………………………………………..

Rather not say	☐

15. Which bracket best describes your annual household income?

£0-£15,000	☐
£15,000-£30,000	☐
£30,000-£45,000	☐
Over £45,000	☐
Rather not say	☐

Appendix 2: Introductory Statement

Hello, we are a group of students from the University of Exeter, based at the Cornwall Campus in Penryn. We are conducting a survey into environmental behaviour within Wadebridge today. The survey is going to be used as part of a research project, and all data is supplied confidentially and will not be used for commercial gain. Can you spare a few minutes of your time to answer a few questions to help us with our research, please?