Graduate School of the Environment
Centre for Alternative Technology
Machynlleth
Powys
SY20 9AZ
Tel: 01654 705981

School of Architecture Computing and Engineering
University of East London
Docklands Campus
4-6 University Way
London E16 2RD
Tel: 020 8223 3000

What are the barriers to African and Caribbean Brits increasing or adopting environmentally and ecologically responsible behaviours?

Michael Lomotey FRSA, MSc

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Abstract

This paper brings a lens to how the Black community in the UK perceives environmentally responsible behaviours and whether it needs to contribute to reducing impacts by taking more and better actions. It brings a critique that despite a growing understanding of how the whole world's future is resting on a knife edge, the impact of climate change is understood differently according to a person's socio-cultural or heritage belonging. Whilst non-Blacks are overrepresented in the environmental movement, they are not necessarily more forward in how the environment is perceived or on responsible behaviours. On the contrary, this paper will show the Black community is equal and in places more advanced in their awareness of climate and ecology demise and the behavioural actions needed to stymie unwanted change. In places pro-environmental behaviour restrictions are noticeable due to the subjectivity of environmental and social injustice. Understanding what barriers exist to preventing all different communities from increasing pro-environmentally responsible behaviours is therefore important especially for those groups that are, or feel themselves to be, traditionally marginalised by structural and systemic oppressions. This research consists of a set of two questionnaires, the first is a qualitative exercise followed next by a quantitative survey with open-ended questions. The study identified a strong perception of climate and ecology amongst the Black community and uncovered a series of barriers as expressed as themes and stumbling blocks that prevent full uptake of pro-environmentally responsible behaviours. The study finds that there is a paucity of research on the Black community and the environment unless it is within a 'victim framing' or if it predominantly features African-American Blacks. The literature in this field, must improve and look at UK Black heritage communities on a granular level. Future research suggestions are proposed on behaviour for the following, a reticence to talk about climate change, how Black identity and heritage impacts upon values and drives pro-environmentally responsible behaviours and notably, justice, both environmental and social. It would be interesting to consider how the pyscho-social value of a reticence or willingness to pay for environmental protections, either financially or in-kind, effects those behaviours too. Important would be to consider and understand why gender based risk or solutions was absent in the data.

Key words
Pro-environmentally responsible behaviour, exclusion, oppression, racism, barriers, Black community, modelling.

Contents:

Glossary

Black A contested term that this paper defines as “a person with African ancestral origins, who self-identifies, or is identified, as Black, African or African-Caribbean”. See Appendix 1.

CRT	Critical Race Theory (CRT)
IPCC	The Intergovernmental Panel on Climate Change
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
NEP	New Environmental Paradigm/ New Ecological Paradigm
PEB	pro-environmentally responsible behaviour(s)
TPB	Theory of Planned Behaviour
VBN	value-beliefs-norms theory

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Introduction

The Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) indicate significant challenges ahead for both climate warming and ecological damage, for which the whole of society needs to mitigate for and adapt to.

One key solution is to reduce carbon emissions and avoid further damage to ecology by making behavioural choices that bring significant environmental and ecological benefit (Chanin, 2018; Song *et al*., 2020; Markle, 2013). This has been named in the New Environmental/Ecological Paradigm (NEP) literature as pro-environmentally responsible behaviour (PEB). In the UK, it would mean all sections of society, including the diversity of ethnic groupings, adapting lifestyle with high *pro-environmentally responsible behaviours* (PEB). PEB covers environmentally sound actions such as low or zero CO_2 emissions and actions that reduce ecological damage. PEB is therefore action taken consciously to reduce impact (Kollmuss and Agyeman, 2002) where the impact of a behaviour is what defines that behaviour (Stern, 2000, p. 907).

There is a high degree of confidence that severe stress and impacts caused by changing climate and ecology collapse are likely in in sub-Saharan Africa (Niang *et al.,* 2014; Dietz et al, 2004; Puaschunder, 2020 p. 6). There is also strong evidence that the Caribbean will experience high risk, not least from sea level rise (Nurse, *et al.,* 2014; Lewsey, Cid and Kruse, 2004). Both of these places are ancestral homelands of African and Caribbean people who are citizens of, or make the UK their home.

Applying a geographic location marker is significant for UK Black community because lived experience is interwoven with culture derived from ancestral homelands (Stephenson, 2002; Clarke and Aygeman 2011) and according to Boucher (2016), lifestyles can be "locked in" by culture (and class). Therefore, looking for barriers, causes or drivers of pro-environmentally responsible behaviour may not be the same for Black Brits as for white Brits hence the need to understand barriers to different Black communities' capability for, and capacity to transition. The need for diverse groups to be part of the whole transition is significant (Brosius, Tzing and Zerner, 1988).

The UK Black community defined
In this study, community will refer to the African and Caribbean communities of the UK, members of which are either of African ancestry, or self-identify as 'Black' (Agyemang, Bhopal, and Bruijnzeels, 2005*)* as is common parlance within seminal Black writings such as those of Cedric Robinson (2000) and Patricia Hill Collins (2002). The use of the term 'Black' is supported by definition from Bhopal (2004), (see Figure 1) and further qualified for this research as those who live in the UK. **See Appendix 1 for further important comment on terminology.**

Defining "Black"

"A person with African ancestral origins, who self-identifies, or is identified, as Black, African or African-Caribbean"

Source: Bhopal (2004)

Figure 1. From a glossary of medical terms relating to ethnicity and race in the UK.

Why is this topic interesting?

Gifford (2011, p. 298) believes we can make the change to PEB as society has done with stopping smoking or wearing of safety belts in cars. What therefore are the barriers to PEB and how big a challenge are they - especially the structural barriers? This study proposes the latter as a potential issue for the Black community.

Managing adverse climate drivers is a crucial aspect of a move to reduce impacts. Whilst we see a growing sense of understanding amongst many communities of the impact of climate change, we need to explore also how much it is understood differently and why this could make it difficult to find a joint path (Pickerill, 2009). Moreover, as a whole society, if we are to successfully challenge drivers and mitigate impacts, a united shift is needed towards a sustainable, zero carbon future for Britain (Jackson, 2019). The Black community in the UK lives here and it matters as we are “embedded” here (Gifford, 2014, p. 543).

The research question is therefore **What are the barriers to African and Caribbean Brits increasing or adopting environmentally and ecologically responsible behaviours?**

Objectives:

a. What is the Black community’s **perception** of pro-environmentally responsible behaviours?

b. To determine what barriers prevent the **reception** or uptake of pro-environmentally responsible behaviours.

A literature review will look at the historic and contemporary aspect and theory of environmentally and ecologically responsible behaviours within a Black context. The aim of this study is to evaluate and critique around the question of environmentalism, response to the environment and ecology, and barriers to better behaviour. The methodology will describe the philosophy of the work and methods used followed by analysis of findings. It will conclude with discussion of the data interspersed with suggestions of theory, policy and suggestions for further research.

The term Pro-environmentally and ecologically responsible behaviours will be shortened as PEB throughout this study.

Literature Review

Contents

- Introduction and methodology
- Tracing the key theories
- Heritage matters: climate, ecology and the Black community
- Emergence of the New Environmental Paradigm (NEP) and the Theory of Planned Behaviour
- Barriers and solutions
- Summary

Tracing the key theories

This review considers the study objectives, perception and take up of PEB and barriers in the Black community. The aim is to build an understanding of research into how the study of pro-environmental behaviour emerged chronologically, from looking at beliefs, values and attitudes and how they affect behaviour. We need to understand related fields and how they impact on the thinking behind this research and its limitations. This work will also explore the importance of heritage groupings effect on PEB and how that is impacted by climate change.

Postmaterialism

In the 1977 book The Silent Revolution, Richard Inglehart proposed Postmaterialism as a transfer of values from physical materialism and security to autonomy and self-expression. As a concept it is essentially Maslow's Theory of Human Motivation, which has five sets of goals or basic needs, Physiological, Safety, Love, Esteem, Self-actualisation (Maslow, 1943) but set by Inglehart in a post-world war two period of increasing abundance. Maslow never used the well-known pyramid in his paper, it was created by management theory to visualise the so-called hierarchy of needs (Bridgman *et al.,* 2019) but it, nevertheless, appears to have been influential on Inglehart.

Inglehart's book emerged from his earlier study of generational change with "post bourgeois values taking precedent" over security needs (Inglehart, 1971, p. 991). That is, following a time of prosperity individuals began to change their value orientation towards self-expression, gender concerns and other matters, and significantly for this research, the natural environment. A theory of values was emerging that saw values as the central point against other influences on behaviours (Schwartz, 1977; Stern, 1995). Society was seen as changing to being less materialistic but more importantly, older value sets such as economic growth and dominance over nature, were seen as being responsible for environmental degradation (Dunlap and Liere, 1978). It saw change, which has system consequences with values and lifestyle issues impacting on the system, as a circle which feeds back in a loop driving further change (Tranter and Booth, 2015). The problem of describing behaviour was multifaceted, with political leanings being brought into the thinking spurred on by framing of the limits of growth as espoused by Meadows *et al.,* (1972) which was circulating concurrently. In recognition, Dunlap and Liere (1978) coined the phrase "New Environmental Paradigm" (NEP) as a theory to describe this change in the dominant social model and devised a method of measurement, an aspect of which we seek to test in this study; most people accept environmentalism, but those with stronger beliefs and values to the environment are more supportive, which in turn manifests in PEB.

It is noteworthy that Maslow's theory is culturally biased and understates socio-cultural factors (Yang, 2003) therefore, it risks leading to an "environmentalism of the poor" (Martínez-Alier, 2003). Another critique is that value systems are inherent and not fixed in each individual, but on a personal level, development occurs continuously (Tufis, 2000).

Querying the early literature raises the question, how much does Postmaterialism affect this research and where does Black culture sit in this theory? Postmaterialism posits a difference between Blacks and Whites linking environmentalism to affluence and finding dissimilar perspectives amongst Blacks and Whites (Adeola, 2004). The literature against Postmaterialism argues that environmental consciousness, the green movement and environmental justice made poor and Black people more eco-aware (p. 912) - justice was a bigger driver to those communities. Blacks therefore come out equally on NEP as shown by studies of African Americans who have, nuance due to experiencing issues, not least because of climate justice (Song et al. 2020).

The Global South is used as a description or term for places disadvantaged by colonialism and globalisation (Dado and Connell, 2012), places that are not in the Western world (Puaschunder, 2020). Postmaterialism is further debunked with evidence showing that the Global South is not more driven by environmental justice to take PEB against westerners whose Postmaterialism is their driver (Brechin and Kempton, 1997, Brechin, 1999). An interesting example of this is the principle of a willingness to pay [for environmental benefits or protection, either monetarily or with a time commitment which Inglehart (1995) and Brechin (1999) discuss. In the poorer Global South it is posited that people would be prepared to pay in-kind with their time for environmental benefits/protections but less so in monetary terms. The reverse was found in wealthier countries indicating that it is about capacity or agency to be able to act, and that willingness and hence environmentalism is most likely universal.

New Environmental Paradigm to New Ecological Paradigm

Up to and during the 1970s, society's driving values and beliefs were framed as a concept of a dominant social paradigm (DSP) (Dunlap and Liere, 1972; Pirages and Ehrlich, 1974) which was supplanted by the NEP (Dunlap and Liere, 1978). However, the NEP did not consider or include attitude formation or attitude-behaviour (Stern *et al*., 1997) and was updated. New Environmental Paradigm became New Ecological Paradigm (or the revised NEP) as the former was also using outmoded terminology and had a focus on humanity-controlling natural resources which implied "primitive beliefs" (Stern *et al.,* 1995, 725), an anthropocentric bent. It is significant in the literature, that where the initial NEP did not include pyscho-social mindsets, the revised version expanded to consider that environmental awareness as an attitude and could be a driver for PEB (Dunlap *et al.,* 2000*,* p. 427). However, Dunlap *et al.,* were clear in recognising that other barriers exist to PEB aside from just attitude.

Revised NEP to direct behaviour drivers

Following or rather expanding on NEP, value-beliefs-norms (VBN) theory was discussed to further understanding on behaviour and as a way to define it by the impacts it brings about (López-Mosquera, and Sánchez, 2012). VBN is based on internal basic values seen as drivers towards caring for the environment and becoming norms (Stern *et al.,* 1999). That is, an individual has basic values and when those values are seen to be at risk in the environment, then action is taken - it becomes a 'norm' (see Figure 2).

Values → Beliefs (NEP) → Norms → PEB

Figure 2 a simplified schematic representation of value-beliefs-norms with arrows representing the flow of direct effects of values on beliefs and then norms. Schematic by this author after Stern (2000, p. 412, Figure 1) and Stern *et al.*, (1999).

This can be summarised as follows. The impact of an environmental behaviour is what defines that behaviour either as an external action, impact oriented such as politics, or an individual, intent oriented action (Stern, 2000, p. 907), the latter of which is of concern to us in this research. The more altruistic the internal beliefs, the more likely PEB, with a feeling we are obliged to act one way or another, considering wider consequences of that action. But this is only if the subject feels their actions will make a difference. What of structural barriers for example the case of systemic racism, would this therefore stymie PEB is a question for which an answer will be sought.

There are other theoretical aspects which this research is limited to cover such as the "physical locus of existence", the premise that PEB takes place in a physical realm amongst physical natural and regional environment. According to Gifford (2014) this has been ignored by psychology researchers, but is very important for people whose ancestral homeland still has strong resonance and attachment as considered in both culture identity and diaspora studies (Stephenson, 2002; King and Christou, 2011; Hall, 2020). It is proposed by this research that racial identity and ancestral/heritage connection are made relevant by the locus of existence.

This study is further constrained by scope, and restricted to looking at one further aspect of behaviours which posits that four categories of barriers exist including "dragons of inaction" (Gifford, 2011, p. 290), which are listed here:

- psychological – internal barriers (seven dragons, see below Table 1.)
- socio-cultural – which are contextual and of relevance to our study
- financial – available funds, e.g. solar panels
- structural – externalities that are systemic and hard to control by individual

(from Gifford, 2011 and 2018)

Whilst recognising structural barriers, Gifford presents seven dragons which are briefly described in Table 1., to answer the 'wicked' problem that if so many are aware of climate and ecology problems, why is more of society not engaged in PEB?

Table 1. Gifford's dragons of inaction barriers

Psychological Barriers to Climate Change Mitigation and Adaptation

General psychological barrier	Specific manifestation
Limited cognition	Ancient brain Ignorance Environmental numbness Uncertainty Judgmental discounting Optimism bias Perceived behavioral control/ self-efficacy
Ideologies	Worldviews Suprahuman powers Technosalvation System justification
Comparisons with others	Social comparison Social norms and networks Perceived inequity
Sunk costs	Financial investments Behavioral momentum Conflicting values, goals, and aspirations
Discredence	Mistrust Perceived program inadequacy Denial Reactance
Perceived risks	Functional Physical Financial Social Psychological Temporal
Limited behavior	Tokenism Rebound effect

The seven dragons have been revised by that researcher and have strong empirical supporting evidence (Gifford *et al.,* 2018). When one barrier is surmounted, another may gain influence. Meat eating is used as an example, as awareness and knowledge of plant based substitutes arise, interpersonal matters impinge on PEB.

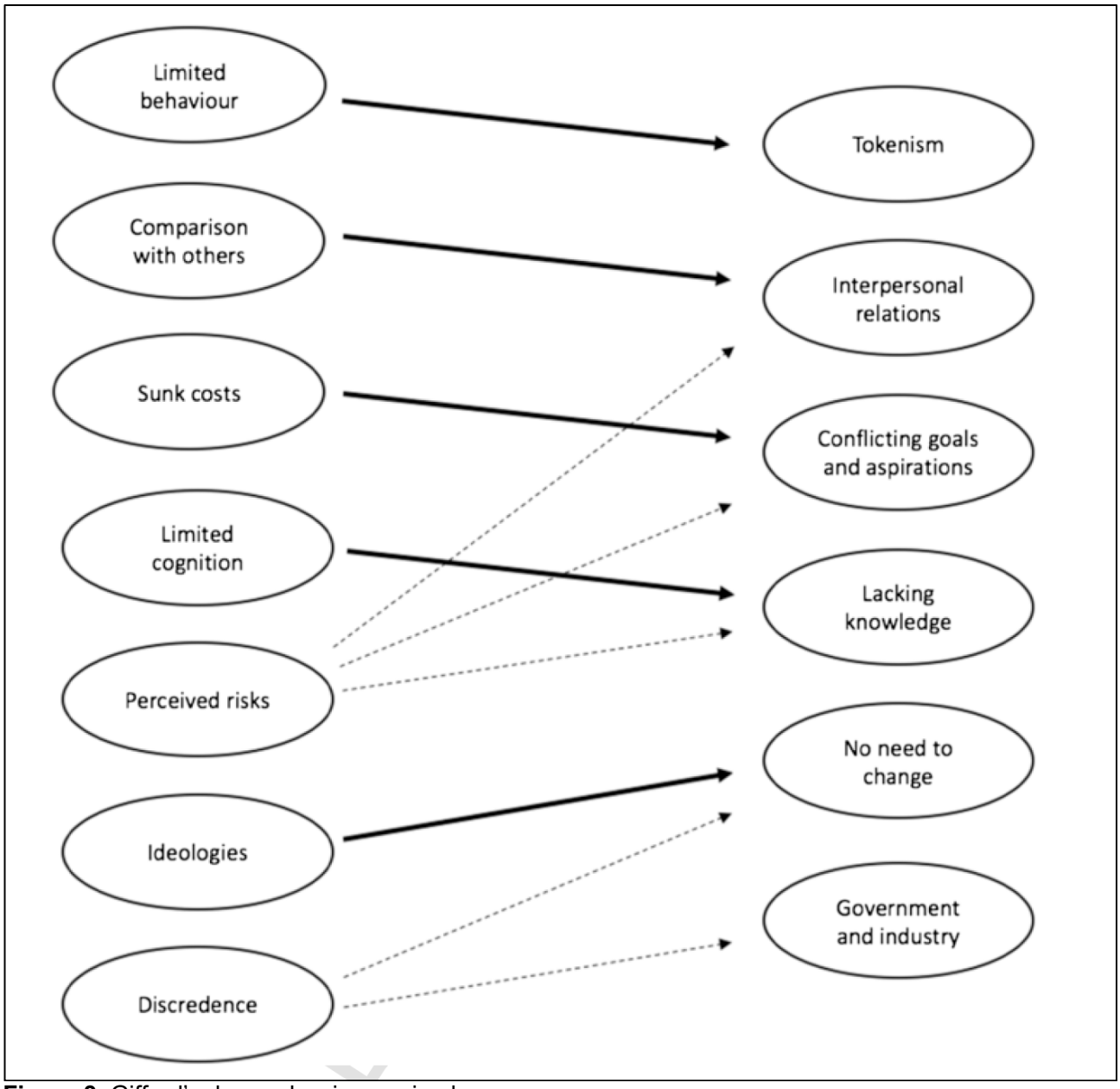


Figure 3. Gifford's dragon barriers revised

A critique of Gifford's work is that it is not broken down into ethnicity. For example, the study on the dragons of inaction was carried out in Canada which has a significant population of Indigenous First Nation and Métis people. This is a missed opportunity to engage with Indigenous people in the research and broaden the findings.

It is argued that having an environmental mindset has more influence than environmental justice as a driver for PEB (Hegtvedt, *et al.*, 2019, p.617). This is interesting in that it suggests liberation and oppression - for example knowledge of colonialism as a driver of climate change - will be secondary to environmentalism as a driver of PEB. This research will seek to find if there is a difference. That is, will the perception that environmentalism as a 'white' activity be a contributing factor of influence either on perception or barriers?

Climate, ecology and the Black community

Climate change and ecological collapse is an equity issue where those who have not caused it stand to suffer the greatest (Bullard, 2016). Neither the Caribbean nor Africa are unscathed in respect of climate and colonialism (Lightfoot *et al.*, 2013) with colonialism's extractivist principle of wealth stripping (Fanon, 1967, p. 80) responsible for life changing impacts such as water stress which is projected to further deteriorate wellbeing (Adjei-Mensah and Kusimi, 2019). Predominantly due to colonialism, climate change is upon us and places like the Caribbean will feel the brunt of "unprecedented", "catastrophic" and "profound" impacts (Sealey-Huggins, 2017, p 2444). There is an inextricable connection between place, the Black community and their identities. Where the community's lifestyle itself is interwoven with Black culture (Agyeman *et al.,* 2019; Stephenson, 2002) as many have argued culture clearly affects behaviour (Schwarz, 1997; Kempton, Boster, and Hartley, 1996; Eom *et al.,* 2016), therefore it could be posited, that it is likely to also affect PEB of the community of focus.

<u>Theoretical approaches,</u>
A number of theoretical approaches have been taken to ground this research in relevance from a universalistic perspective to one more focussed on Black community.

Abolition ecology is a postcolonial, antiracist approach to studying nature that seeks to unpick the interconnected, racialised, white supremacist processes, including within environmentalism (Heynen, 2016). It foments how we build a holistic picture necessary for transformative change, leaving no one behind. As this study looks at barriers, if any are found for the Black community, being aware of this approach may help decipher themes and other challenges.

Structural Racism

> Structural racism causes all other forms of racism including institutional and interpersonal, it perpetuates old racism and causes new forms of racism to emerge (Calmore, 1991; Powell, 2008).

Racism is defined as "a system of unequal **power and privilege** where humans are divided into groups or 'races' with social rewards unevenly distributed to groups based on their racial classification" (Collins, 2002, p. 300). Power and privilege uncover the root of what structural racism is about. Structural racism according to Critical Race Theory (CRT) is pervasive, permanent and must always be challenged (Vaught and Castagno, 2008). It is crucial to recognise it as systemic and not merely an individual manifestation.

1. It is a framework embedded within our institutions
2. It alters but doesn't disappear. Even as our society and culture changes, racism adapts
3. As we consider it, even in academia we must introduce a counter (for example, there is not such a thing as colour-blind research)

UN Sustainable Development Goals fail to use inclusive language and do not make any active effort to get rid of racism and discrimination (Okorodudu and Raider, 2015).

Environmental Justice; Race and environmental concern

American studies during the 1970s-90s found Blacks less sensitive to environmental and ecological concerns but that is now disproved as illustrated above. Only in lower income brackets and low educational attainment is there any evidence of some difference and in environmental justice matters like pollution, there is not so much difference (Newell and Green, 1997).

Environmental justice for Black, people of colour, Indigenous and marginalised people is threefold. They are least responsible, least able to adapt and most marginalised, despite rhetoric from the mainstream environmental movement, it is a failure of justice (Anguelovsk and Pellow 2020). The Public Interest Research Centre say that "the colonial impacts on climate are virtually unknown in the UK" (PIRC, 2020, p. 13). It is important to be aware of intersectional justice matters when thinking about adaptation.

A seminal moment in environmental justice was the publication of a report in 1987 by the United Church of Christ Commission for Racial Justice. This huge piece of research found disproportionate risk to minority communities from commercial toxic waste and concluded that environmental racism equals intent, but also impact (Bullard *et al.,* 2007). It was significant in that it drove successive US administrations to introduce and maintain policy including a national office on environmental justice. In the UK aside from campaigning organisations like the Black Environment Network that have for a number of decades worked on access to nature/ environment for the Black community, there exists no formal environmental justice policy or programme (Agyeman, 2002) and only piecemeal response from European Union. In the UK there is a need for reliance on other provision such as Health and Social Care Act 2012 or Equalities Act 2010 (Mitchell, 2019). There are issues based and direct campaigns often have sympathetic attitude to environmental justice.

Worldviews

The critique in this paper is that political ecology has traditionally been beholden to the most part, in power and privilege. So where global environmental work by the IPCC and the IPBES is good progress it comes with criticism in that it is a part of the current paradigm of power emerging from big global forces. That is, it is a tool of neoliberalism which is arguably the most dominant global force (Harvey, 2007; Mignolo, 2011).

A worldview is a set of assumptions about physical and social reality that may have an impact on cognition and behaviour - a worldview describes reality (Chandler and Reid, 2018; Hutchings, 2019; Escobar, 2017). If you are sat in Whitehall in UK, or Washington or Geneva your worldview will be different from a tomato-growing small holder in south Wales, a women's cooperative smoking fish in Ghana, or advocates promoting the gift economy in Bristol and Brixton. Power and privilege decide and have decided which worldview is dominant. Structural racism could be argued, is an outcome from a particular worldview (Koltko-Rivera, 2004).

From worldviews we can begin to visual a pluriverse of many worlds with ethically and politically different ontologies (Chandler and Reid, 2018; Hutchings, 2019; Escobar, 2017). Poortinga (2019) believes worldviews have an impact on attitude and PEB.

This study proposes that there is a need when thinking about adaptation, PEB and sustainability to consider a pluriverse approach, with communities creating their own solutions and autonomy (Escobar, 2017, p. 252). Science and society must recognise the importance that place has on environmental justice which Escobar argues is not just in

situ, but about heritage connections. It is an argument for a view of power and privilege as praxis rather than theory.

Many of the worst impacts of environmental problems are being felt now by Black and Brown communities and by Indigenous people who have not caused the problem, and there is a plethora of studies that support this (Sealey-Huggins, 2017; Mignolo, 2011; Saldanha, 2019; Dorninger, *et al.,* 2021).

A synthesis indicates the need to think about the argument that climate change and ecological degradation have roots in racism and colonialism, power and privilege. It is time to open up a debate about this. The imperative to include pedagogy of justice in aspects of researching PEB is critical, as is applying the lens of justice to policy; there is no climate justice without racial justice.

Exclusion

Exclusion in this study's context must be acknowledged because oppressions overlap intersectionally (Collins 2009; Crenshaw, 2011).

Any enquiry into climate must include racial dimensions (Chanin, 2018). It is virtually uncontested that racism has strong historic roots in enslavement and dehumanisation of African people (Chanin, 2018, p. 2 ; Saldanha, 2019; Sealey-Huggins, 2017; Mignolo, 2011; Schell *et al.,* 2020; Dorninger *et al.,* 2021). Therefore, any exploration into racial dimensions must recognise that white privilege is rooted in the same grounding and that exclusion is a result.

That a large number of white people do not believe racism to be an issue (Wang *et al.,* 2020), speaks of white privilege and is problematic (see Figure 4.).

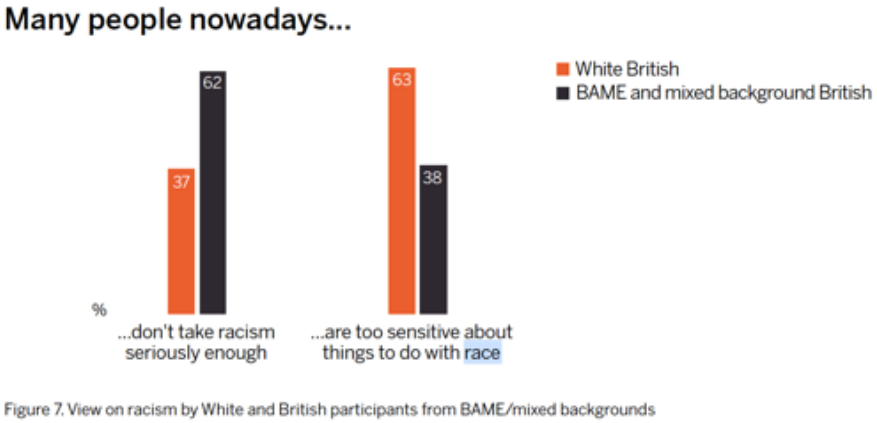


Figure 4. Black and White perspective on racism. Source: Climate Outreach, (2020).

Wang *et al.,* (2020, p. 9) argue that a "*values-based approach is more powerful than looking at any single sociodemographic"*. However, this does not take into consideration that tangible factors such as structural, symbolic and subjective racism, hold back Black communities from directly engaging in PEB, and are systemic.

From French political thought (but espoused by UK's New Labour movement), social exclusion concerned a moral underclass, a "redistributionist discourse" (presumably of wealth) and integrationist interventions (Levitas, 2005). See definition in Figure 5.

Social exclusion definition:

"*A complex and multi-dimensional process. It involves the lack or denial of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole."*

Levitas *et al., (*2007, p. 25)

Figure 5. definition of social exclusion circa 1990-2010.

Racial and cultural exclusion is linked to legacy of white supremacy which is "normalised within society" (Thomas, 2012, p. 5) and to white property rights or "valorisation of whiteness" (Crenshaw *et al.,* 1996, p. 277). A salient point on exclusion is made by Clarke and Agyeman (2011) that mindset and agency are diverse in both the Black and wider non-Black community in relation to perception and PEB. They are very clear that ignoring this aspect and also, culture, tradition, heritage and lifestyle, is contentious and even neglectful of an important constituent for research into understanding behaviours (p. 93).

Values, attitudes and beliefs

Along with worldview, values are considered widely in the literature (Poortinga *et al.,*2019). Values are defined as cognitive patterns that help us orient ourselves, and which become our ideals or principles (Grunert and Jhul, 1995, p. 39). Values reflect how we interact; they can be both individualistic or collectivist and therefore have a group identity. It is assumed values are shared culturally (Dunlap and Van Liere, 1978; Stern, Dietz and Kalof, 1993), the latter suggest values can be egocentric, eco-centric or anthropocentric (social-altruistic) in respect of environmental concerns.

How we explain behaviours in the psychology context is complex, yet there is a tendency for a failure of general attitude to predict behaviour including as Ajzen quotes "amongst Blacks" (Ajzen, 1991, p. 180), but attitudes, norms and controls can also be predictors of actual actions whether PEB or other (Ajzen and Fishbein, 1980). The work by Ajzen and Fishbein, together and singularly, is suggested as being very influential on theorising around attitudes as driving behaviours (Kollmuss and Agyeman, 2002, p. 243). In essence this is their theory of planned behaviour (TPB), which sits on the central premise that attitudes and norms are funnelled through intention (see Figure 6.), which is intra-personal-reason or rational behind driving the taking of an action (Ajzen, 1991). In other words, rationality or intention encapsulates the motivation and the effort needed to take the action. The stronger the intent the more likely a PEB.

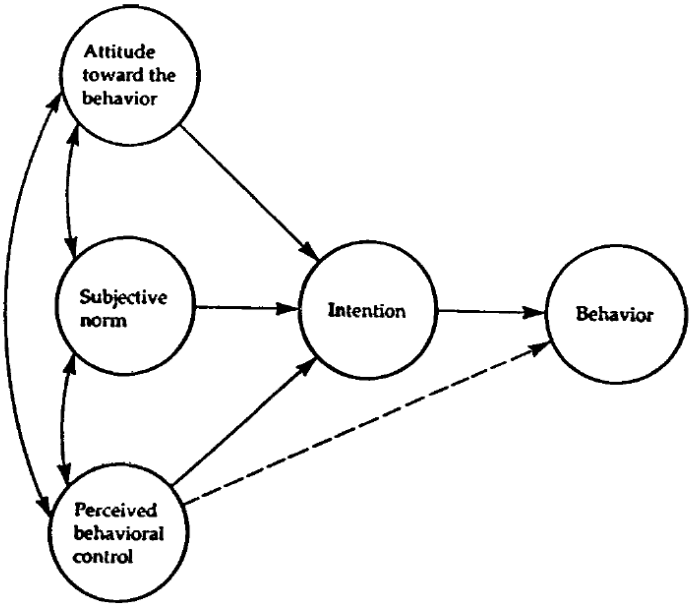


Figure 6. Model of theory of planned behaviour, Ajzen (1991, p. 182).

Crucially for this research TPB as an explanation for driving PEB relies on how much control the individual has (Ajzen, 1991; López-Mosquera and Sánchez, 2012) which is very important for a community that feels disempowered by externalities. The field is complex and includes a viewpoint that attitudes do not directly influence behaviour but are a driver of intentions which manifest in action (Ajzen and Fishbein, 1980, p.239). Theory of Planned Behaviour (TPB), along with Value Belief Norm (Stern, 2000) are amongst the more well-known models for predicting behaviours especially in relation to surrounding society norms or "social comparisons" (Gifford, 2011, p. 294). Application of these theories in specific areas may give results for change, interventions and understanding or at the least afford some understanding of the matter being considered (Ajzen, 2011, p. 206).

This research must therefore ask, do collective values drive PEB more than individualistic attitudes? Behaviour change specifically targeted to influence PEB of a community may be valid as an intervention (Hargreaves, 2011) because sustainability actions are locked in by class and culture (Boucher, 2016). The literature supplies some guidance for how this can be achieved, a highly cited example suggests to identify the behaviour, investigate, apply intervention and review (Steg and Vlek, 2009).

Barriers and PEB

Context is significant when understanding barriers (Biesbroek, *et al.,* 2013, p. 1124) and is therefore many layered. What Biesbroek *et al.,* look at in their literature review is barriers to adaptation, but they do not consider the entity of cultural context in their framework. If their study were to apply this extra lens it would fit well as another factor in the many layered complexity of what constitutes and creates barriers - whether to adaptation or PEB - especially for the Black community. Therefore the multidimensional aspects of the many drivers and causes of barriers research should include racial aspect, and maybe even class and culture.

Unequal power capacity holds back adaptive capacity (Pelling and High, 2005) where structural situation (social-cultural-economic) drives access to assets (agency/power) creating an unequal power distribution. Capacity to be adaptive is also built from social learning which emerges from relationships (Pelling and High, 2005).

Essentially, and consistent with the literature, awareness builds values and attitude which drives PEB but is this the same in individualistic as well as collectivistic cultures? Environmental concern predicted PEB in European Americans *(sic)* (individualistic) but not Japanese (collectivistic) (Eom *et al.*, 2016). Cross cultural difference exists and therefore cultural variation of adaptive technology and process is important.

Barriers are explored by Kollmuss and Agyeman (2002) in a paper with over 7,000 citations that contains data on behaviour and barriers. Their definition of PEB “as action taken consciously to reduce impact fits” with others assessments (Stern, 2000; Dunlap *et al.,* 2000, Markle, 2013 and Gifford *et al.,* 2018; Hegtvedt *et al.,* 2019). Whilst there are many theories around barriers, no single holistic explanation is found but they all help drive understanding in this complex field (Markle, 2003). For example Ajzen and Fishbein’s Theory of Planned Behaviour has merits for considering rationality or reasoning driving the attitude to specific behaviours. Kollmuss and Agyeman, concur that it is a complex field with occasional paradox, for example longer time in education leads to more environmental awareness but not necessarily to more PEB. As a solution to facilitating exploration they propose a framework (see Figure 7). The prominent factors in their framework are internal and external drivers which are pressured by a range of barriers preventing PEBs. Lorenzoni, Nicholson-Cole and Whitmarsh (2007) explored barriers to find two broad levels, individual and social that have similarities with Kollmuss and Agyeman’s perspective. However, this UK study did not look at ethnicity or racial factors.

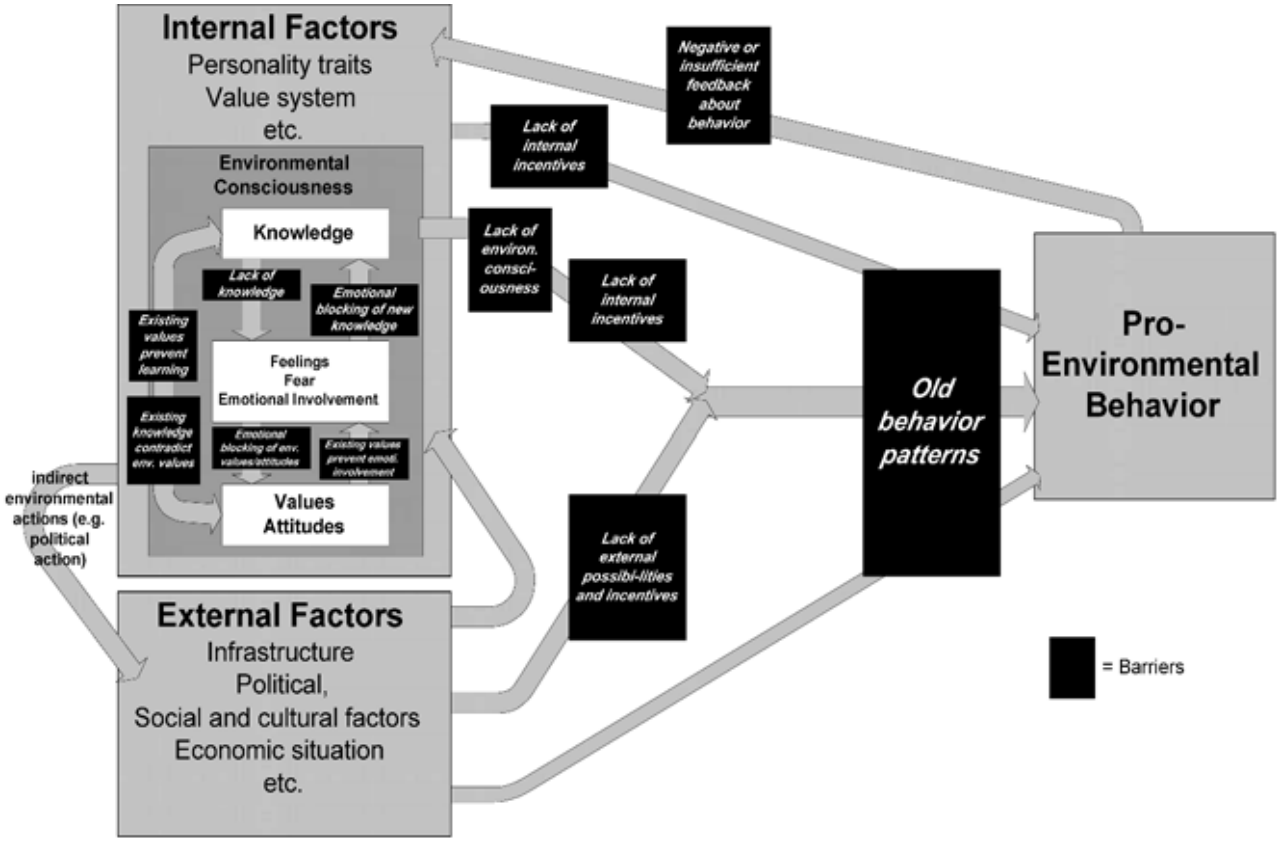


Figure 7. Kollmuss and Agyeman's, 2002 model of pro-environmental behaviour factors and barriers.

Spirituality

Spirituality and religions' influence on environmental behaviour is a widely documented field which was initially felt to be outside of the scope of this study. However, an extension to the literature review is added after the research analysis. Lifestyle practices such as spirituality within close knit groups tend to be influencing and enforcing (Axsen *et al.,* 2012) and emerged as a strong thread in the data. Lifestyle theory, however, is a limitation and needs further exploration as is considering impact of *religious-and-spiritual* and *spiritual-but-not-religious* which can both driver harmonious relations with nature or environment around a person (Schnell, 2012). The data suggests that there is a need to reflect on non-religious spiritual awareness of nature and the connection with the sanctity of the environment (Rezapouraghdam *et al.,* 2019; Brigulio *et al.,* 2020).

Summary

There is a paucity of research on the UK Black community and environmentalism (Clarke and Agyeman, 2011) and especially of PEB, but we have studies from the USA on African Americans that guide and inform (Caron, 1989; Newell and Green, 1997; Adeola, 2004; Hegtvedt *et al.,* 2019). The consensus in the literature is that environmentalism is strong and established in the Black community, for instance in food justice (Agyeman and McEntee, 2014), and there is a good awareness of impacts especially driven by environmental justice (Chanin, 2018; Song *et al.,* 2020). An intersectional lens is somewhat missing which is important as environmental messages

are often obtained or acquired via many interrelated and interacting contexts (Ford and Norgaard, 2020).

For consequences of actions, we must ascertain what are the most important environmental impacts, look for what human activities bring them about or caused them and understand how they are perceived. The aim would be then to deduce and decipher policy interventions or barriers for the target community to reduce those impacts.

There is a need to test if the concepts from Value-Belief-Norm theory and Theory of Planned Behaviour are relevant for the target community. It would also be helpful to explore the premise of Grid-Group Cultural Theory (Douglas, 1970; Douglas, 2007) which indicates culture and concomitant lifestyle has an influence on perception, attitudes and PEB, but this is a limitation for this study.

Methodology and Methods

This study will take a phenomenological approach to understanding the barriers to African and Caribbean Brits choosing pro-environment, low ecological impact lifestyles by 2030. It will reach out to those living in the UK who identify as Black, Black British and of African or Caribbean descent.

Objectives with the study are two-fold and the methods were derived accordingly:

c. What is the Black community's **perception** of pro-environmentally responsible behaviours?

d. To determine what barriers prevent the **reception** or **uptake** of pro-environmentally responsible behaviours.

Literature review
A systematic literature review followed a method described by and applied to heritage-climate change literature by Fatorić and Seekamp (2017: p. 229, see Figure 8.) which involved developing the research questions, deciding on keywords, performing the search and selecting publications. These were then analysed, for themes, and synthesis, reported and the theory discussed in chronological order (Jesson, Lacey and Matheson, 2011).

Figure 8. Systematic literature review schematic by this author, from Fatorić and Seekamp (2017).

Standard academic rigour for exclusion in the review rested on the relevance of a publication to this research. A lot of information was found, and focus was obtained by predominantly excluding non-peer reviewed material and in the main using only those with citations, unless of a late date or relevant after a robust critique. Whilst citations can be a biased way of confirming quality (Tahamtan *et al.*, 2016), looking at the relevance, author, and journal helped determine value (Baird and Oppenheim, 1994).

Sampling and selection
To avoid problems of simple convenience sampling such as how representative it may be, or not (Bryman, p. 181), the research used chain or 'snowball' sampling to attract respondents. In respect of the whole population, the use of a non-probability sample was correct in that we were researching a specific cultural/heritage demographic. Within the target, random selection was attempted by distributing to a varied range of groups known to the researcher:

- Family
- Friends
- Interest groups

- Faith group
- Sports and activities
- Social and cultural groups
- Posts on social media platforms (Twitter, LinkedIn, Facebook)
- Other Black interest groups

Following first posting to the contact list, second and third messages were circulated with a specific request to encourage snowball/chain sampling (Biernacki and Waldorf, 1981; Naderifar, Goli and Ghaljaei, 2017). An outreach list was prepared to ensure relevant sampling (subject to GDPR requirements, the list is available on request). Lack of resource for a professional survey company was one of the drivers behind this method, a second was the extensive network of the researcher. Total sample size was 81 for the first survey, with one person disqualified by ethnicity, and sample size of ten (10) for second survey.

Data and data collection
The methods of data collection were a questionnaire of predominantly scale choices (a mix of Likert, scale and rank questions) for first phase gathering quantitative data, with a second survey of open ended questions for qualitative data gathering, both described further below. Both surveys were made available online and accessible for a limited period.

The study took a mixed methods approach (both quantitative and qualitative), with a first quantitative questionnaire followed by a further questionnaire that had a qualitative aim, where each method was ascribed respectively to the two central objectives to obtain primary descriptive data. These methods were chosen as they are commonly used in the literature around PEB and barriers (Kollmuss and Agyeman, 2002; Gifford, 2011; Poortinga, 2019) and allowed an opportunity for some comparison and testing of others' findings. For validity and reliability tests were performed that other studies had used (see Table 2) in order for this research to compare results and show any differences (first set of questions appear in order in the analysis and second questionnaire is in Appendix 2.). Although it is hard to compare tests for PEB across studies (Markle, 2013, p. 911), remaining within broadly similar themes ensured consistency. The framework and models for PEB and barriers for this approach were from Kollmuss and Agyeman (2002).

Table 2. test methods from other studies used in this research.

Study	**method(s) and tests**
Adeola (2004)	similarities between racialised groupings using Likert scales for values, attitudes and PEB. Deployed various measures including averages, where in this study we used population median
Markle (2013)	Contingency tables Keep tests within broadly similar categories
Tam and Chan (2017)	Perception (which is named in this work as "Environmental Concern;) scale questions with Cronbach's Alpha (0.8 and 0.65) PEB, Cronbach's Alpha
Chanin (2018)	Cronbach's Alpha (all >.05 so indicating internal consistency) Means comparison regressions 2-tailed test on environmental concerns
Hegvedt *et al.,* (2019)	PEB independent variables for NEP average means on an scale Cronbach's Alpha for reliability bivariate *r*
Poortinga *et al.,* (2019)	ESS, cross national differences regression

Chi-square test for association (φ_c Cramer's V) was conducted on tests of perspectives and environmental awareness to ascertain statistically significant association

Control variables were income, education and heritage.

A pilot questionnaire was consulted with stakeholders to ensure relevance and validity, and that it is collaborative with a common-ground foundation (Pickerill, 2009; Anderson *et al.,* 2009). This ensured a decolonised methodology, one aspect of which is giving back to the researched (Tuhiwai Smith, 2012); the findings will eventually be made available to Black communities.

Framework for questionnaire question categories was derived and influenced by Kollmuss and Agyeman (2002) and Gifford (2011):

<u>Categories</u>

1. Behaviour choices
2. Consumer/conservation choices
3. Citizenship choices

4. Demographic characteristics

Specific question sets were influenced by Hegtvedt *et al* (2019); Kollmuss and Agyeman (2002); Markle (2013); Adeola (2010); Chanin (2018), Poortinga *et al.,* (2019).

Variables:
Looking for strong bivariate relationships between independent and dependent variables in consideration of first objective, '*the Black community's perception of pro-environmentally responsible behaviours'*

- Dependent: choices and actions as consumer, conservation and avoidance behaviours (Hegtvedt, 2019), citizenship and advocacy; have you done any of these actions in last six months?
- Independent: enviro-consciousness or environmentalist framing (Kollmuss and Agyeman, 2002; Hegtvedt, 2019), climate/ecological impact (human impact) framings, eco-identity, justice (heritage countries impacted, neighbourhoods degraded by e.g. polluting industry, locations near poor air quality), (emotional engagement as outrage).
- Control: demographics, education and wealth. Context grounding.

Data and analysis
First phase survey results were analysed, looking for strong bivariate relationships by producing contingency table correlation coefficient after Markle (2013) using SPSS statistical package. By a process of deductive analysis (Bryman, 2016) responses to the survey data were interpreted to draw out findings. These findings were further used to develop open ended questions for phase two, the qualitative research that was a query on barriers to investigate objective b. In what is an iterative path, thematic analysis (TA) was used to interpret data gathered from the interviews. For TA an inductive approach (Thomas, 2003) was taken as is common in research on barriers (Biesbroek *et al,* 2013), applying coding for the method from this perspective. TA process took research standards from Braun and Clark (2006), Terry *et al.,* (2017) and Bryman (2016). Saldaña (2013) suggestions for guidance when coding were also considered. Qualitative data analysis computer software tool (NVivo 12) was employed to aid the process.

The first survey gave implicit explanation of PEB perception, and the second qualitative survey implicit prediction of barriers. However, as it is hard to get confirmation of causal reliance in social science (Bryman, 2016), the final analysis acted as a guide to predicting themes of barriers. A qualitative approach was supported by the need to explore reasoning behind actions, for example lifestyle or how cultural heritage pressures PEB (Lorenzoni, Nicholson-Cole and Whitmarsh, 2007).

Coding was applied as a method to symbolically assign attribution and meaning to the second stage questions, looking for patterns, commonalities and other interpretive factors embedded in the responses (Saldaña, 2013) and specifically Saldana's Values Coding (values, attitudes, beliefs) method (p.110) and for which was employed a six-phase approach (Terry *et al.,* 2017) see Figure 9. It did not follow a linear track, but something more akin to a coiled rope strewn on the grass that runs and returns; it was reviewed constantly during the six phases to capture essence and did not use preassigned code

categories but chose a method that noted frequently occurring codes which developed into themes (Whitney and Ban, 2019).

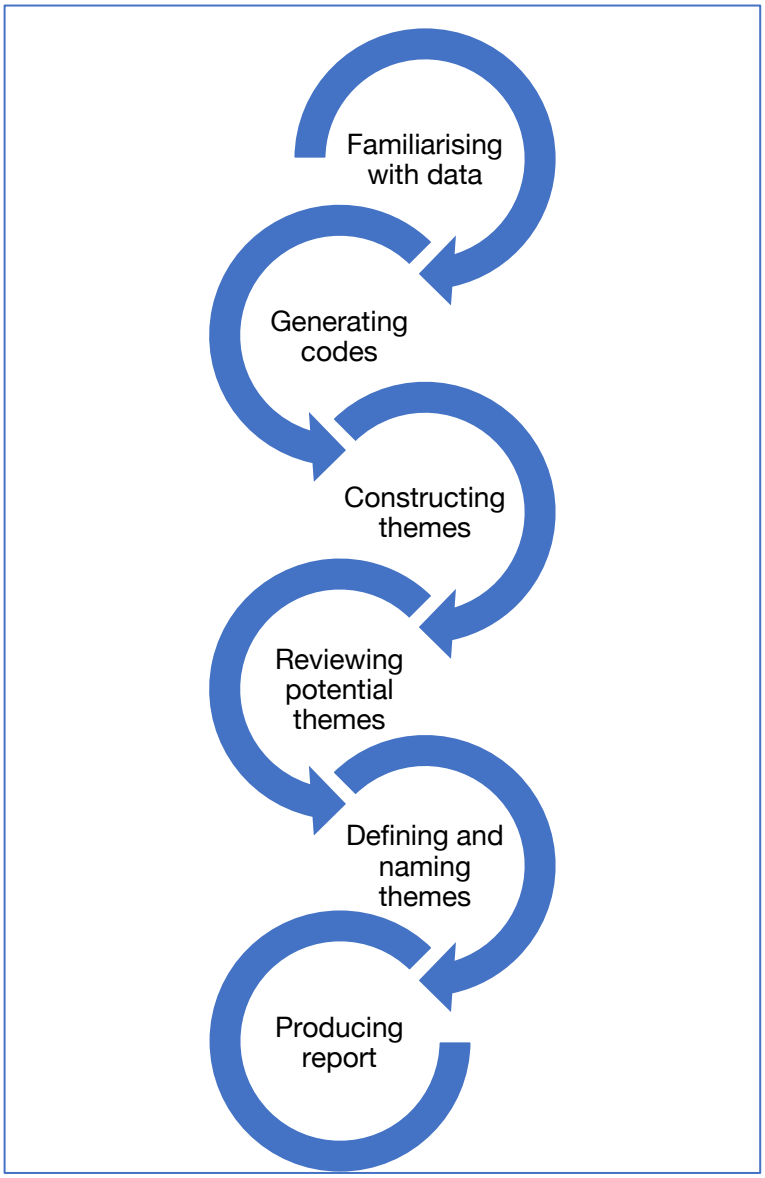


Figure 9. Terry *et al.,* (2017) six phase approach

Whilst building familiarity with the data, notes were made to unpack the information, noting items of interest, but whilst being careful to reflect on researcher's own assumptions and experience. An effort was made to be inclusive, analytical and critical therefore the data was read and re-read repeatedly (sweeps) whilst observation notes were recorded as memos.

Codes were generated as pithy labels to indicate what was interesting during coding sweeps. Early sweep throughs looked for semantic, obvious or surface meanings, later sweeps for latent ideas that captured ideas and assumptions underlying and underpinning the surface meanings. Subsequent sweeps gave an opportunity to capture implicit meaning. Braun and Clark (2006) suggest these latter sweeps after time afford an

opportunity to construct and generate more complex deeper themes, clustering codes together systematically. What emerged was that the larger, bigger themes were not the most frequently repeated codes, but those that cut across the whole data with macro levels of meaning analysed thematically, reflexively and actively (Braun and Clark, 2006).

Actors and activities or behaviours observed for coding:

1. Cultural practice
2. Episodes
3. interaction
4. Roles and relationships
5. Interrelated
6. Groups
7. Opinions
8. Meaning and emotions

This report was then produced

Methodology summary outcome
First phase, quantitative, was relatively easy to manage and recognise bias for instance in sampling. Second phase care was taken to ensure researcher participation and perception may have influenced results. This nuance is inevitable due to this researcher being a member of the target racial demographic, but this membership also afforded a level of experience and knowledge of the target.

Results

Analysis - quantitative

Presentation of data and analysis
This first stage was to consider results of the survey questionnaire, looking for how data would answer objective 'a' in this study. A range of measures were used as above and statistical software package (IBM SPSS) aided analysis. 'Question' is abbreviated to 'Q.' hereafter. Median averages were used in places because most of the data was non-parametric. Using a process of deductive analysis (Bryman, 2016), responses were interpreted to draw out findings.

One respondent was 'white-British' so not included in the analysis leaving 80 participants' results. Category of 'Other' is self-identified by seven respondents but for our purposes they fit into the overall Black British category.

Therefore, *N*=80 in all analysis except Q.4, which was a values ranking exercise (Markle, 2013); one respondent only did not answer this question and a single further blank on Q.11. All participants completed the remainder of the questionnaire which indicates commitment even from those not obviously climate minded.

Question order was randomised with questions grouped by categories derived from and influenced by Kollmuss and Agyeman (2002) and Gifford (2011) both of these which study PEB and values. Question categories are shown in Table 3 alongside what the variable them aim to test.

Table 3. Question topic list of categories and what it aims to test

Question No.	Question topic	To test or measure
1	Heritage	demographic/control
2	Income	demographic/control
3	Education	demographic/control
4	Ranking of values	values
5	Is the climate changing due to $C0_2$ emissions?	beliefs
6	Is change caused by humans or natural?	beliefs
7	Impacts in Africa, Caribbean, UK	beliefs
8	Do you limit energy use?	PEB
9	Have you cut down on heat, shower, active travel?	PEB
10	Talking about climate and ecology	attitude
11	Support for policies and regulations	socio-political/external/frame
12	Worried climate ecology	attitude
13	Thought much about climate change	attitude
14	The planet, G-d/mother-nature, progress and growth	attitude
15	Membership of environmental org	PEB
16	Petition/campaign	PEB
17	Donations to environmental organisation	PEB
18	Donations to human rights orgs	PEB
19	Willingness to pay: taxes	PEB
20	Too difficult, or I do what is right	beliefs 20.1 attitude, 20.2 orientation
21	Attitude to action	attitude
22	Active PEB: eat less meat, drive less	PEB
23	Fairness and frugal living for Black folks	beliefs
24	Will justice improve?	attitude
25	Gender	demographic/control

Data analysis

The main headline results show the Black community is on a par with the rest of society in environmental values and attitudes, and possibly advanced in a few areas which could possibly be down to sampling but may also indicate a link to the environment through a heritage or environmental justice lens. These latter propositions will be explored in the qualitative part of this research.

Responses to first questionnaire

Q1 To which Black heritage/ethnic group do you identify?

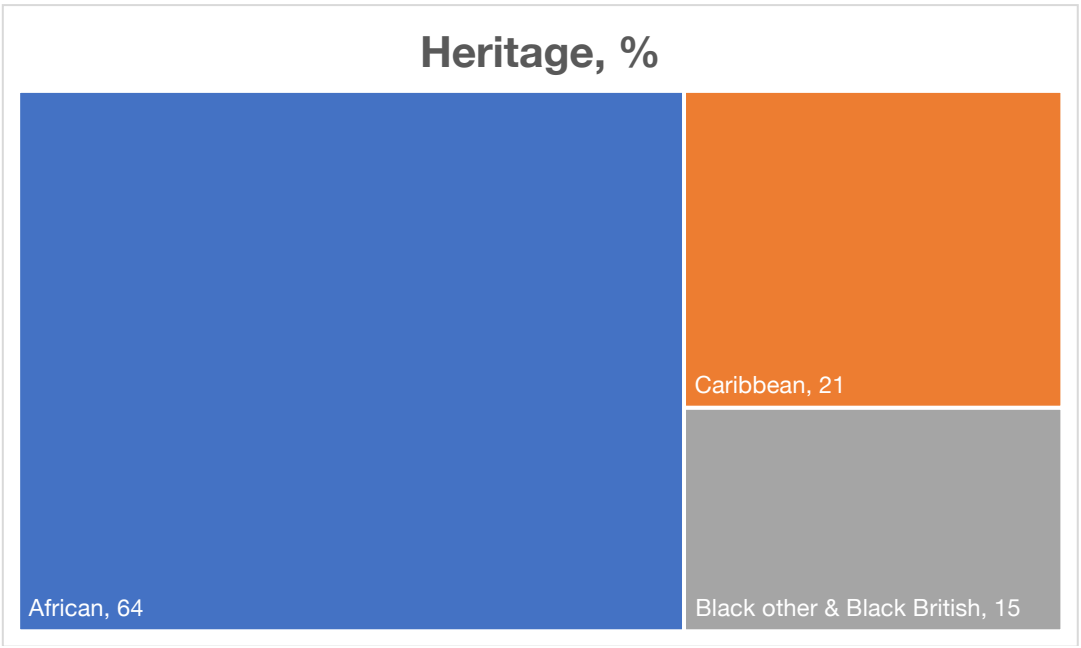


Figure 10. Q.1, Black heritage/ethnic group by per cent

Q.2. What is your household estimated annual income?

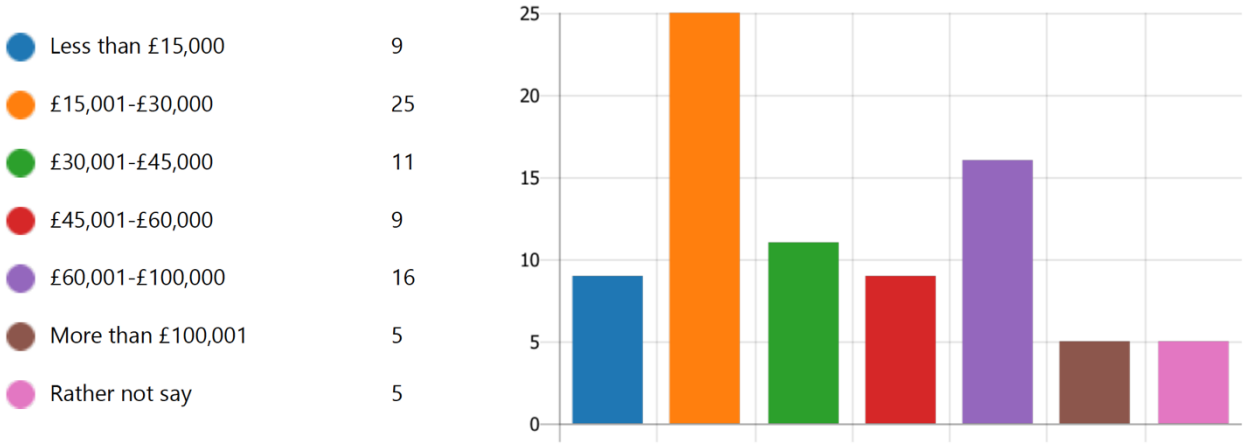


Figure 11. Q.2. Respondents annual income

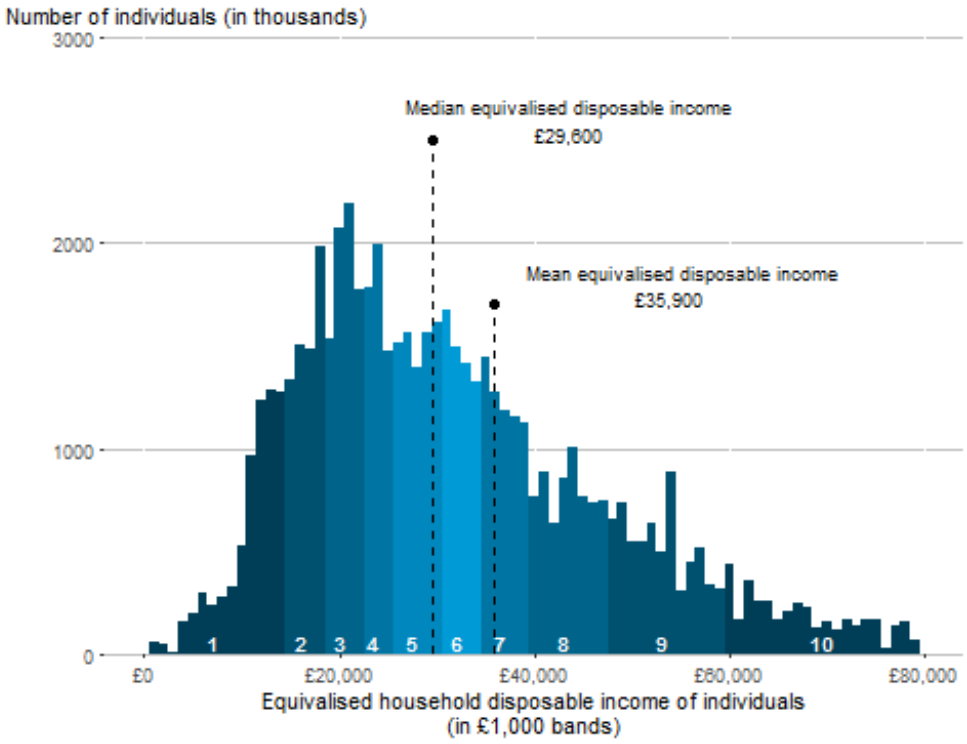


Figure 12. Showing UK median national income at £29,000 in financial year ending 2019 (source: Office for National Statistics, 2020)

Income for this study cohort was relative to national average.

Q.3, Education

Qualifications are categorised under UK's Regulated Qualifications Framework (RQF), with more difficult qualifications having a higher level rating (www.Gov.uk). The community as tested indicated educational attainment of RQF level 3 or higher. Nationally, for education, 64% of the general population have Regulated Qualifications Framework (RQF) level 3 or above (ONS, 2019) where our respondents (Figure 13) show 81% for this control factor.

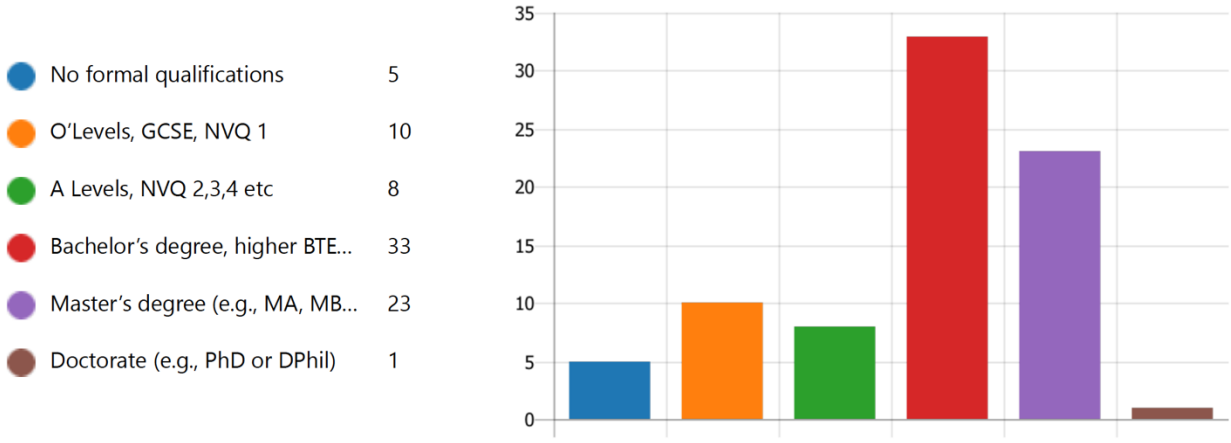


Figure 13. Level of formal education

Q.4. *Please rank these items in order of personal preference that relate to how you like spending your time and resources.*

These questions were designed to indicate environmental values with 1 being the most enviro-conscious choice and 9 the least. This is based on premise that the impact of an environmental behaviour is what defines that behaviour (Stern, 2000, p. 907), that people who take at least some actions are more likely to be induced to take more (Kollmuss and Agyeman, 2002) and the threat from activities related to food, household operations and transportation are greater than others (Markle, 2013). Depending on the order they were placed in, respondents would show their enviro-consciousness in behaviour terms.

We see in Q4 results the medians (Table 4.) indicate an environmental attitude in the whole cohort with "*Spending time in nature*" consistently as one of the top ranking choice.

PEB is defined as action taken consciously to reduce impact (Kollmuss and Agyeman 2002) with a lack of enviro-consciousness seen as a barrier to PEB (Kollmuss and Agyeman, 2002). We also see the greatest threat from our activities are food, household operations and transportation (Markle, 2013), therefore Q.4 was constructed to measure these two aspects by creating its own ranking. The ranking of PEB goes from 1-9, with 1 being the choice this research deems at most close to a PEB, to 9 being the potentially most environmentally damaging choice.

List showing order of least to worst environmental impact as described in preceding paragraph:

1. Spending time in nature
2. Learning new skills; creating or repairing things
3. Spending time with family and friends
4. Spending time doing things with other community members (e.g. sport, clubs or hobbies)
5. [natural median] Spending time doing non-nature leisure or entertainment (socialising, dancing/clubbing, theatre etc)
6. Making where you live look good (e.g. home improvements, buying furnishings etc)
7. Shopping (for typo) and wearing nice clothes or other personal items
8. Buying/using your own means of motorised transport (car, van, motorbike)
9. Shopping for and using electrical devices, games consoles or gadgets

The natural median of responses was 5th choice.

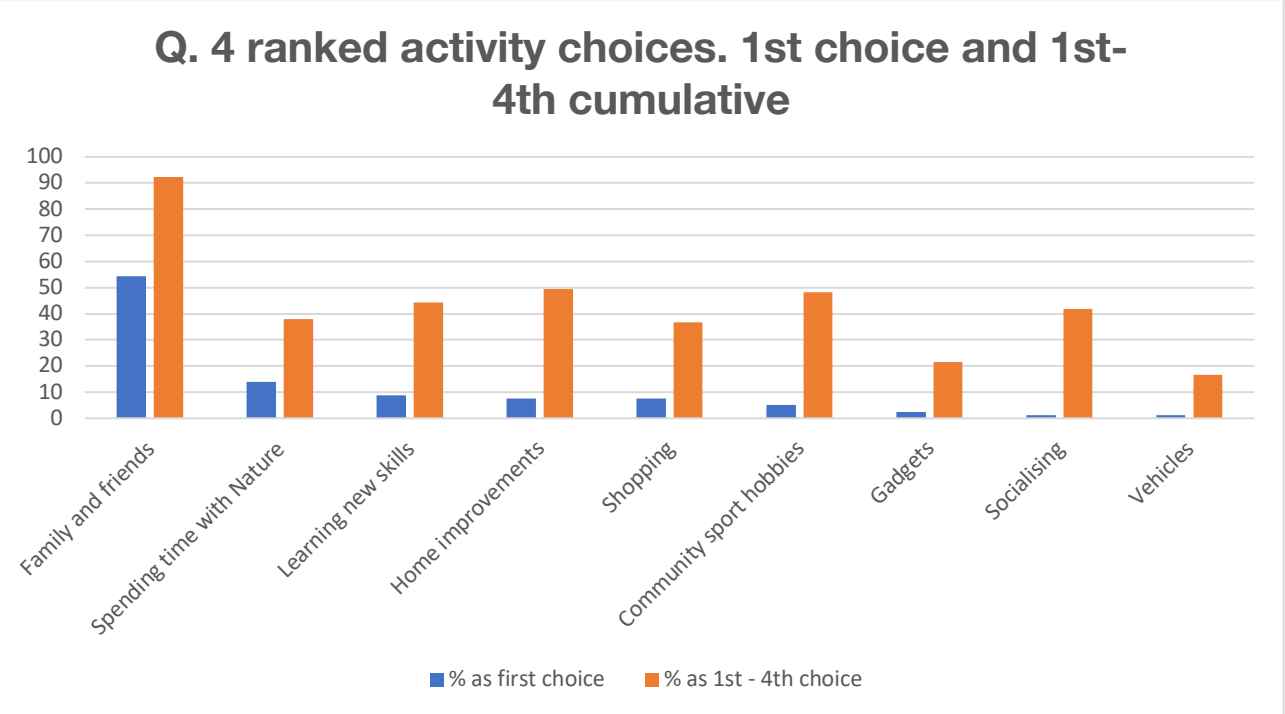


Figure 14. Q.4, rank choices

Table 4. median of Q4 rank choices on a 9-point scale where 1 is most environmentally sensible equivalent choice and 9 the least, with standard deviation

	Spending time with Nature	Learning new skills	family and friends	community sport hobbies	socialising	home improvements	shopping	vehicles	gadgets
Median	4.00	5.00	1.00	5.00	5.00	5.00	6.00	8.00	7.00
Std. Deviation	2.366	2.410	1.497	2.208	2.425	2.084	2.390	2.347	2.361

Q5 You may have heard that the world's climate is changing mainly due to CO_2 emissions.

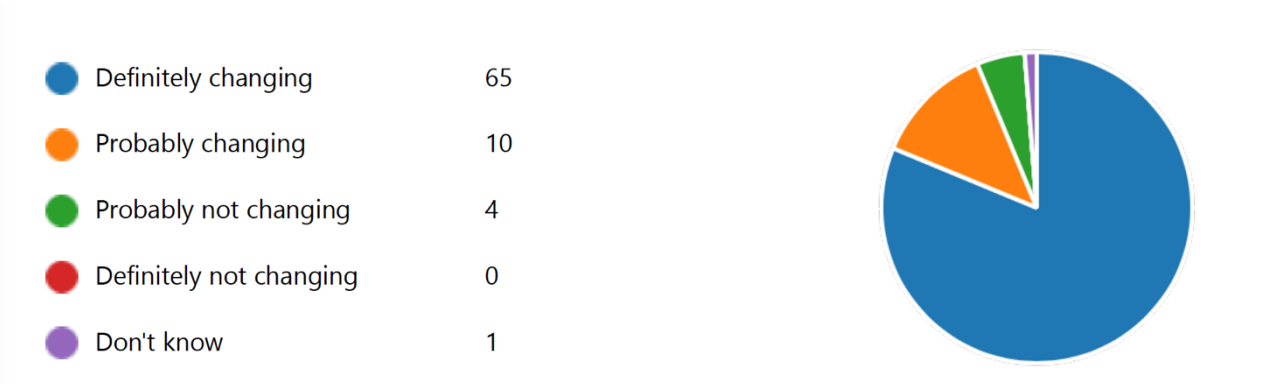


Figure 15. Q.5 results

Q.5 was influenced by European Social Survey (ESS) by Poortinga *et al.,* (2019) on values and worldviews. 94% of respondents believe the world's climate is definitely changing or probably changing, whilst 5% believe it is probably not, none not changing and 1% don't know (Figure 15). This is a strong indication of awareness of climate change in the cohort.

Q.6. Do you think climate change is caused by natural process, activity of some humans, or both?

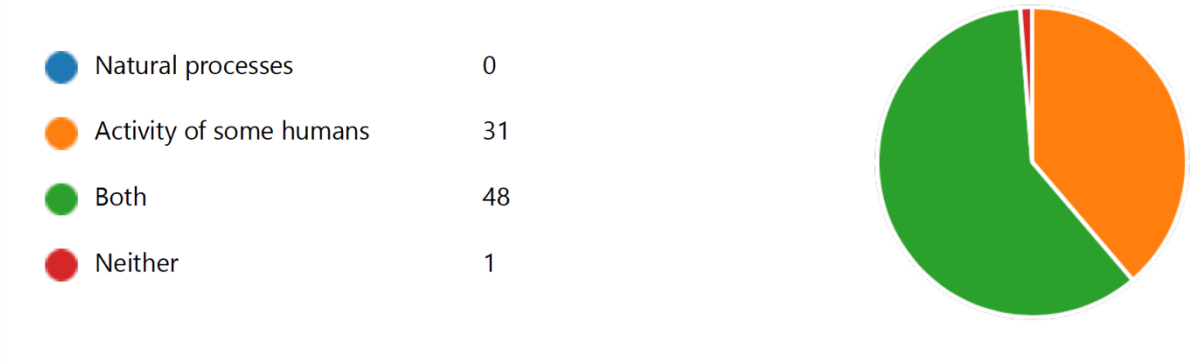


Figure 16. Q.6 results

Q.6 confirmed 60% of respondents (Figure 16.) believe climate change is human induced which is not unaligned with the scientific community (Rockström *et al.,* 2009; Myrhe *et al.,* 2013; IPCC, 2014) and wider society (Wang *et al.,* 2020).

Q.7 asked participants to think about the impacts climate change will have on people in the Caribbean, Africa and the UK, choosing a number from 0 to 7, where 0 is extremely bad and 7 is extremely good impact.

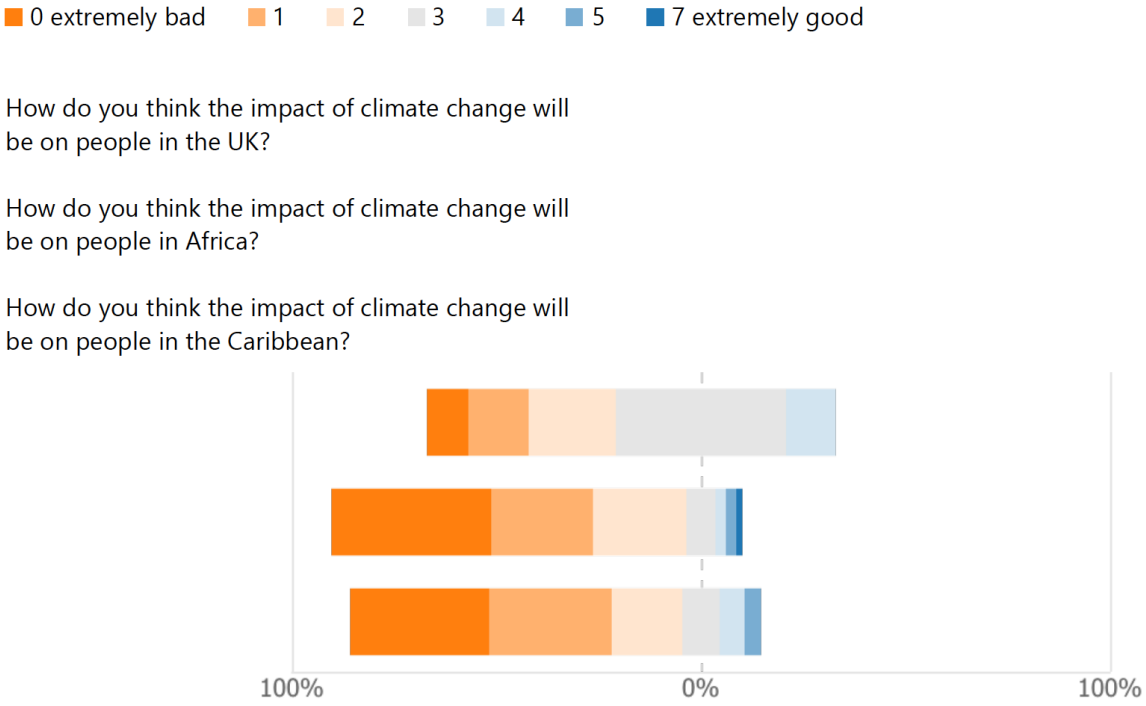


Figure 17. Q.7 results

The natural median for this grouping sits between 4 and 5. Frequency table (Figure 17.) shows that for all UK respondents, Africa and Caribbean impacts are expected to be bad

with a median of 3 for UK, but 1 and 1 each for Africa and Caribbean. This implies a belief that risk is severe and more so in non-UK regions.

Table 5. Impact of climate change results.

How do you think the impact of climate change will be on people in:	% Extremely bad or bad leaning (0 to 4 choice)	% Extremely good or good leaning (4 to 7 choice)
UK	87.5	12.5
Africa	93.8	6.3
Caribbean	90	10

A Spearman's rank-order correlation was run to determine the relationship between Q7 (belief test) and both Q.12.1, Q.12.2 (attitude tests). There was a strong correlation between the three regions and attitudes, which was highly statistically significant at p <.01 level for UK, and statistically significant at p <.05 level for both Africa and Caribbean (see Table 5).

Table 6. Q.7 and Q.12 correlation coefficient table.

Spearman's rho correlation	**Environmental impact in UK**	**Environmental Impact in Africa**	**Environmental Impact in Caribbean**
How worried are you about climate change	- .274*	- .413**	- .382**
How worried are you about ecology degradation	- .228*	- .381**	- .430**

* significant at the .05 level (2-tailed)

** significant at the .01 level (2-tailed)
n = 80

Q.8 Thinking about limiting energy use (PEB) to try to reduce climate change

The choices were scored from 0 to 5, a six-point scale to calculate frequency distribution

Q8. limit their energy use to reduce climate change?	Frequency	Percent
Don't know = 0	5	6.3
Very unlikely = 1	5	6.3
Somewhat unlikely = 2	20	25.0
Neither likely or unlikely = 3	16	20.0
Somewhat likely = 4	30	37.5
Very likely = 5	4	5.0

Table 7 Shows scoring added to Q.8 and frequency distribution, 37.5% respondents indicate they are "*somewhat likely"* to limit their energy use

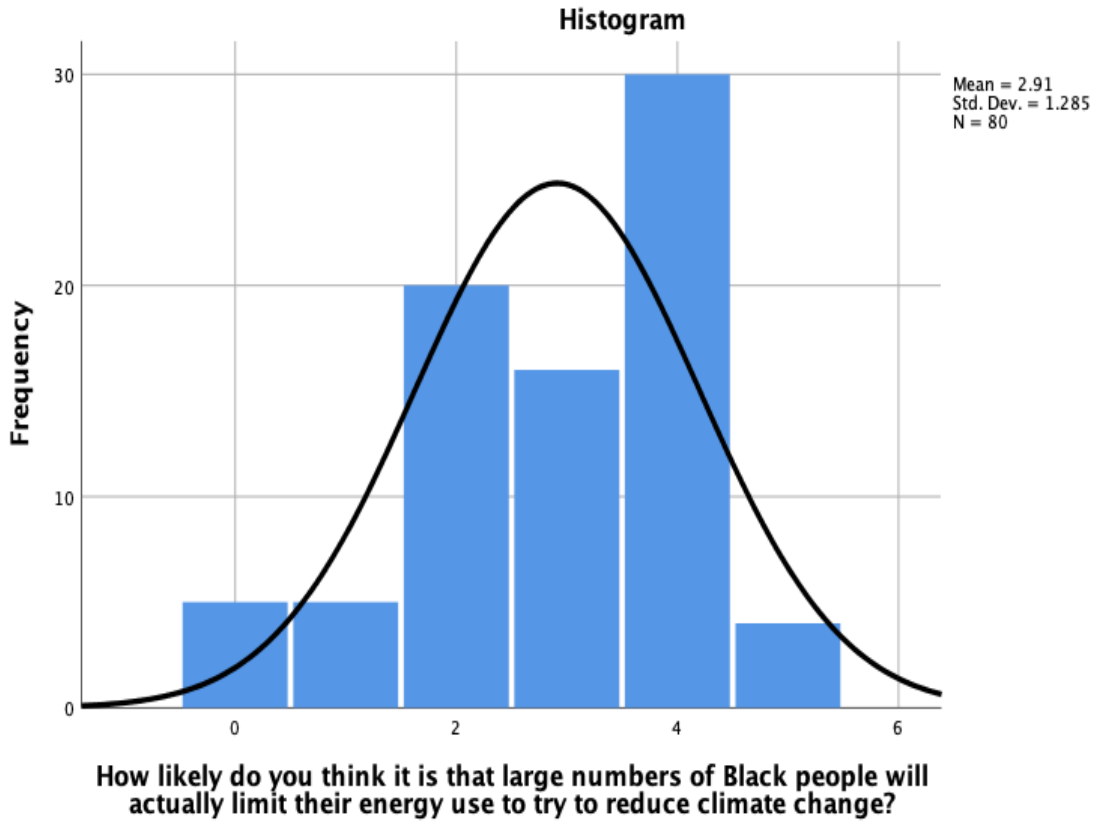


Figure 18. Histogram using scoring from Table 7, Q.8 median and frequency

It is interesting that with scoring of between 0 to 5 (six options), the median was 3 and skewed towards Black community limiting energy use with 37.5% believing "*somewhat likely*" and a further 5% "*very likely*" that they will limit their energy use. However, it was not evenly spread with 20% neutral and combined 31.3% "*somewhat unlikely*" and "*very unlikely*", see Figure 18.

Q.8 was looked at against income to test if those variables affected PEB. For income a Spearman's rho was calculated with statistically significant results -.223, n = 80, $p < .05$. Income. See Table 8.

Table 8. Income and conservation PEB

	N=80	What is your annual income?
How often do you limit time in shower	Correlation Coefficient	-.223*

**. Correlation is significant at the 0.05 level (2-tailed).*

Median for lower and middle incomes - that is those below £30,000 - do show a propensity for PEB limiting energy use (see Appendix 3).

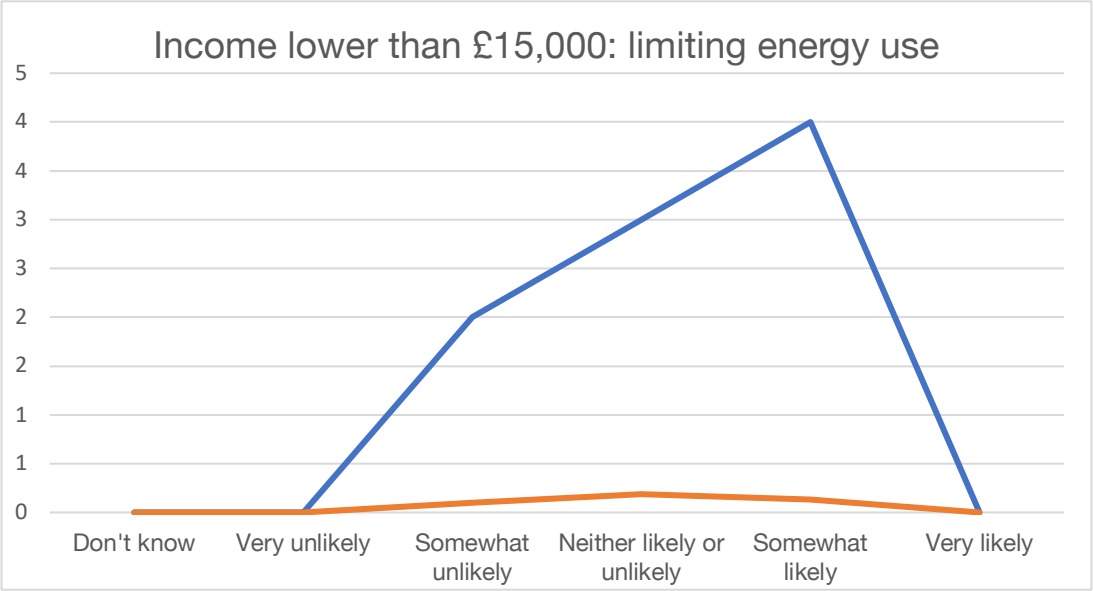


Figure 19. Q8, likely or unlikely that Black people will limit energy use to help the climate in low income bracket. See Appendix 3 for other income brackets

Q.9 Active travel and things that can be done to reduce energy use. There are some things that can be done to reduce energy use, such as switching off appliances that are not being used, walking for short journeys, or only using the heating or air conditioning when really needed. Participants were asked about their daily life, how often they do things to reduce energy use? Participants were asked if they took these actions never, rarely, sometimes, often or constantly.

These actions were compared against attitude as explored in Q.12, being worried about climate/ecology and cutting down on heating and cooling.

Spearman's rho was calculated with results in Table 9 below. The correlation was statistically significant in both cases of active travel and for conservation PEB.

Table 9. Correlation for Q.9 and Q.12

	How worried are you about climate change?	How worried are you about degradation of ecology?
	Spearman's rho	
Cut down on heating and cooling for example by reducing the thermostat setting or putting on an extra layer, or cooling by switching off air conditioning	.14	.56
How often have you used Active Travel (i.e. walked, cycled or jogged) instead of driving to your destination?	.365*	.270**
How often do you limit time in shower to conserve water?	.242**	0.289*

* p = < .01 , correlation is statistically significant
** p = < .05, correlation is statistically significant

Q10 How often do you talk to others about climate change and ecology?

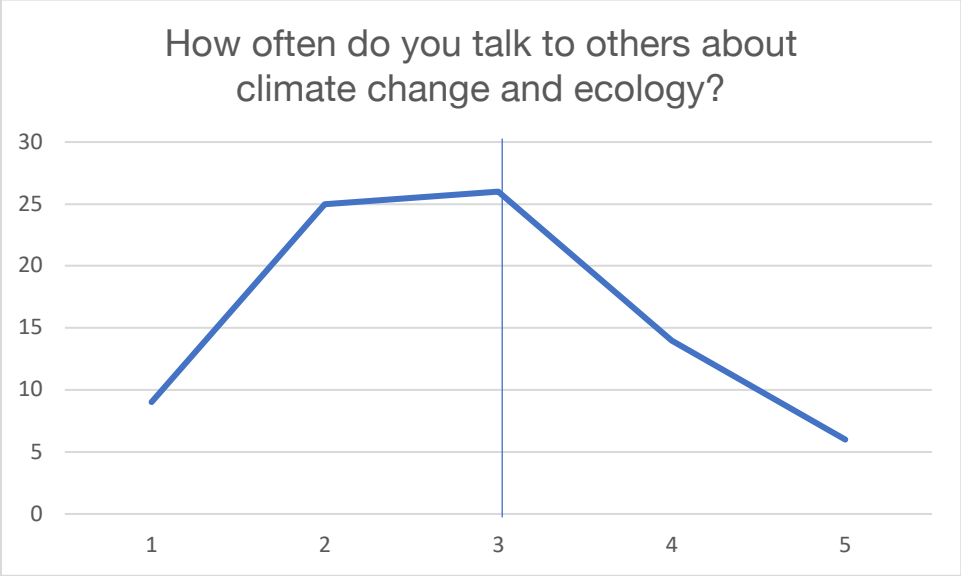


Figure 20. Q.10, talking about the environment.

42.5% never or rarely held conversations, 25% did hold conversations. This is skewed to reticence but it is unknown why not which will be considered in discussion chapter.

Q11 To what extent are you in favour of the following policies in UK to reduce climate change and ecological damage? Option 1 being strongly against to option 6 strongly in favour?

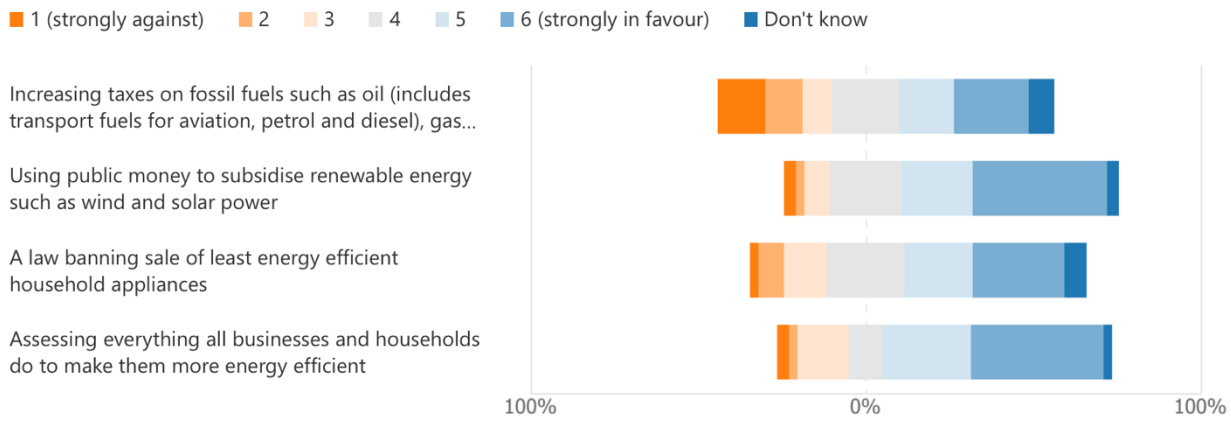


Figure 21. Q11 support for environmentally friendly policies

Respondents are politically inclined towards pro-environmental interventions and subsidies, and to a slightly lesser degree on taxes on a seven point scale (Figure 21.). Medians of 4 and 5 are high and match Adeola (2004) mean average of 2.47 on finances related to environmentally friendly policies, see Table 10.

Table 10. Q11 median and standard deviations

		Increasing taxes on fossil fuels such as oil (includes transport fuels for aviation, petrol and diesel), gas and coal	Using public money to subsidise renewable energy such as wind and solar power	A law banning sale of least energy efficient household appliances	Assessing everything all businesses and households do to make them more energy efficient
N	Valid	80	80	80	79
	Missing	0	0	0	1
Median		4.00	5.00	5.00	5.00
Std. Deviation		1.883	1.378	1.481	1.424

Q11, socio-political and external framing was tested by support for subsidising renewables. Analysed with Q15 taking PEB, in this case being a member of an environmental organisation, a Spearman's Rho rank-order correlation was run to determine the relationship which was found to be statistically significant at the .05 level (two-tailed), r_s (78) = -.231, p < .039.

Q.12.1 How worried are you about climate change?
Q.12.2 How worried are you about degradation of ecology?

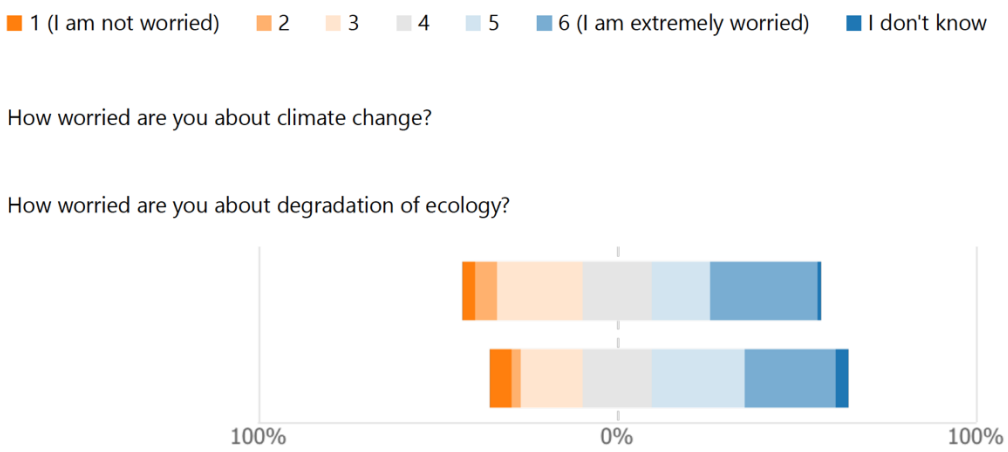


Figure 22. Q12 worried about climate and ecology.

Q.12 worry about climate change and degradation of ecology were both skewed towards the same findings (see Figure 22.), respondents were worried or extremely worried on both counts. See Table 6. above for Q.12 analysis with Q.7.

Q.13 have you thought much about climate change?

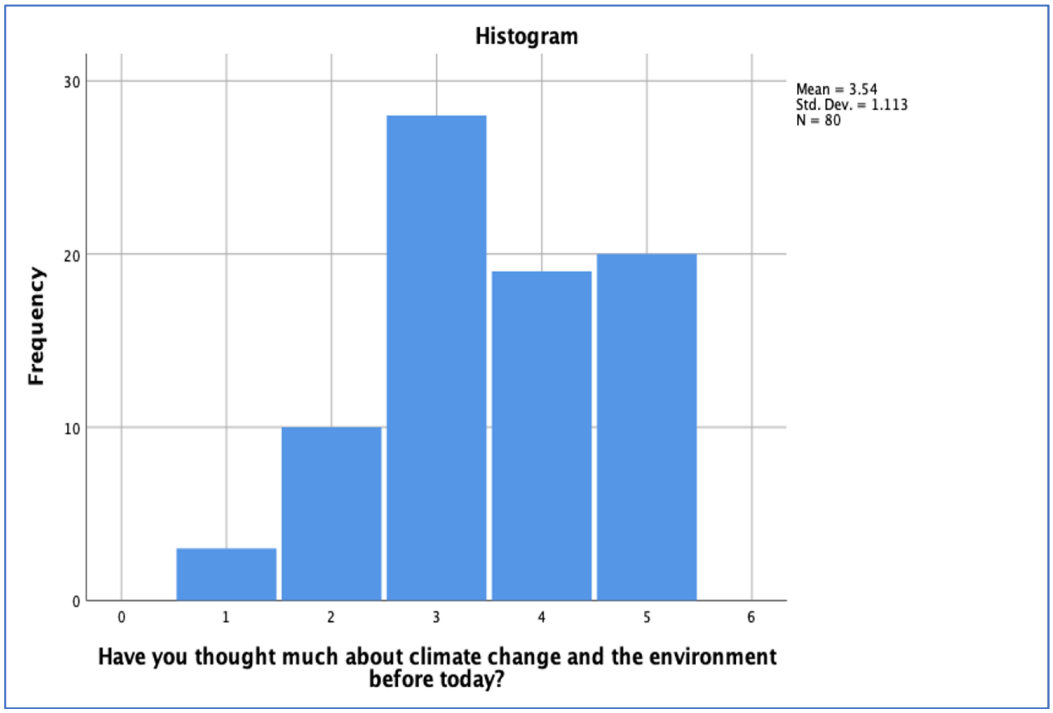


Figure 23. Q.13 histogram of results for thinking about the environment

The topic of climate and the environment has increased in the past few years to an extent that researchers claim Britons know that it is real (Wang *et al.,* 2020) therefore, it was not unexpected that these results for Q.13 in Figure 23., would reflect the popular opinion.

Q.14

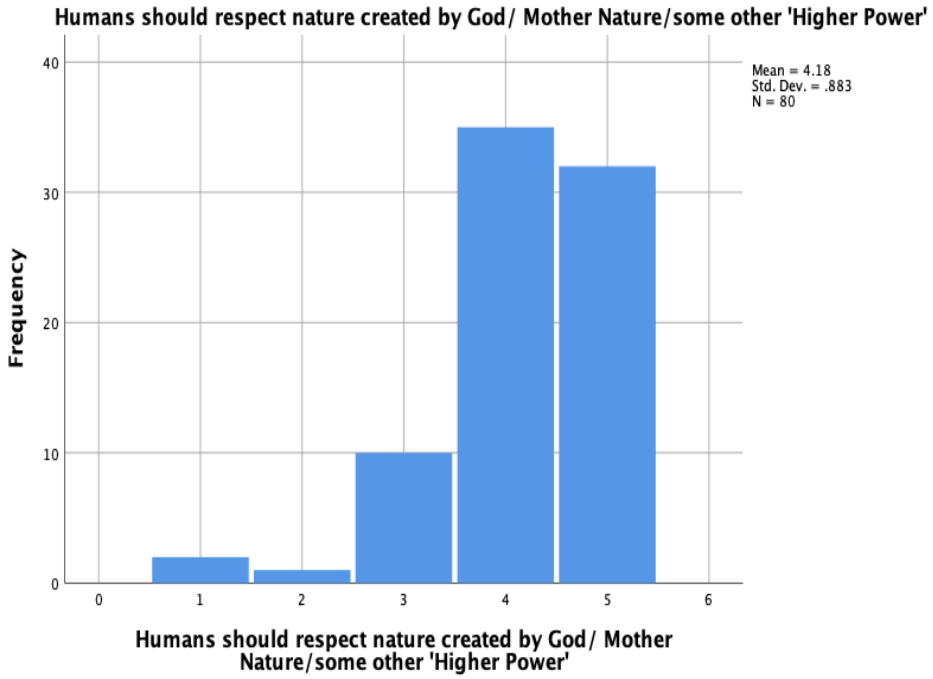
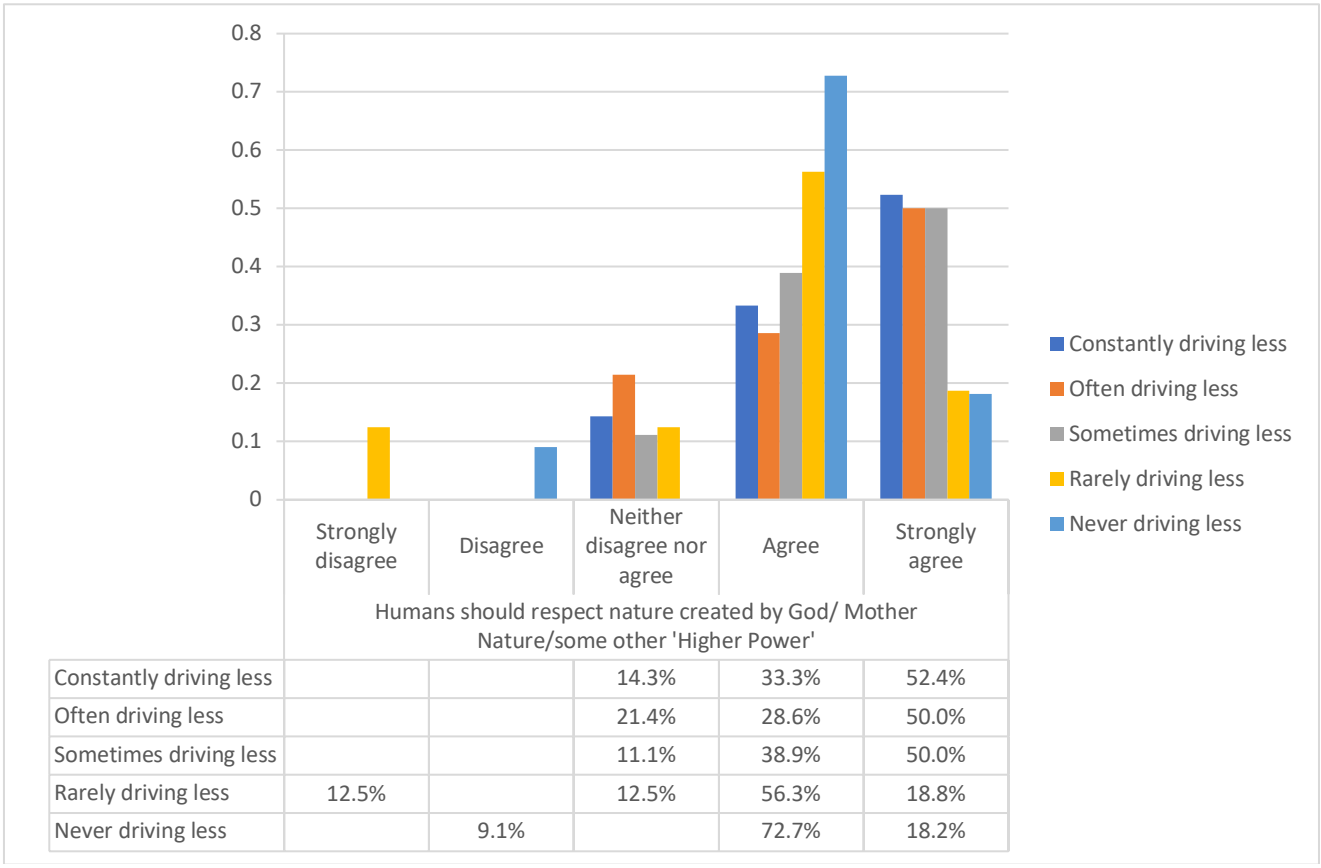


Figure 24. Q.14 spirituality histogram of results

There was strong impression from the participants indicating a spirituality driver (see Figure 24.) which will be returned to in the section on barriers in the discussion section below.

Spirituality measured on a scale of five, the mean average was a of a high 4.18 and standard deviation of .883.

46 (57%) of those who often and constantly did active travel (PEB) were amongst the 67 (84%) who agreed or strongly agreed humanity should respect spirituality of nature, with only 4% strongly disagreeing or disagreeing (see Figure 24). Of 84% who strongly respected spirituality aspects of nature, 69% claimed to be very active in energy reduction PEB, such as adjusting thermostat for either heat and cooling.



	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
Constantly driving less			14.3%	33.3%	52.4%
Often driving less			21.4%	28.6%	50.0%
Sometimes driving less			11.1%	38.9%	50.0%
Rarely driving less	12.5%		12.5%	56.3%	18.8%
Never driving less		9.1%		72.7%	18.2%

Figure 25. Chart of Q.14, spirituality of respecting nature, with PEB of Q22, driving less.

Qs. 15 - 18. Descriptive of PEB

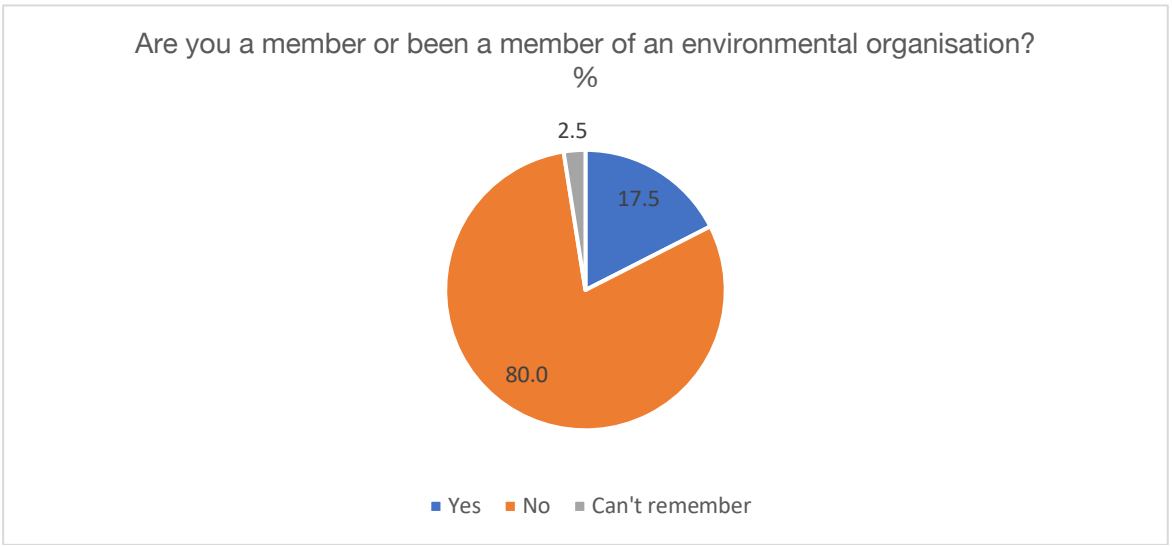


Figure 26 Q.15, no strong representation in citizenship membership.

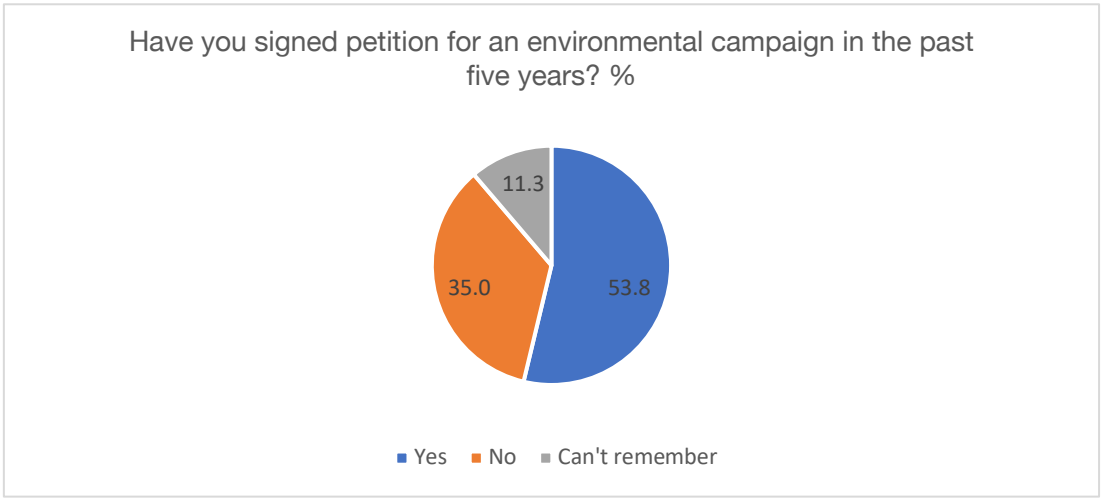


Figure 27. Good level of activism indicated by responses to Q.16

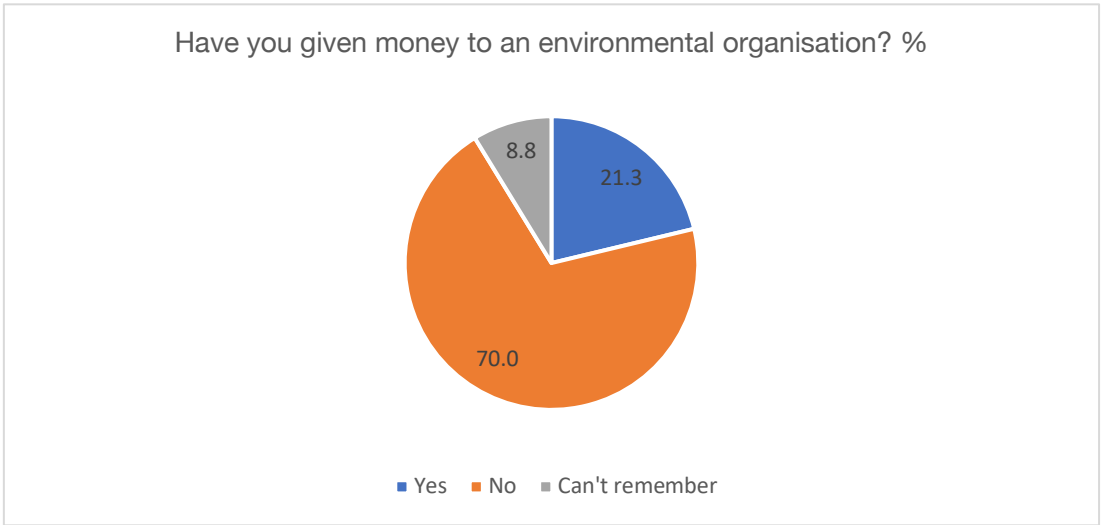


Figure 28. Q.17 philanthropic financial support for environmental organisations is **low**

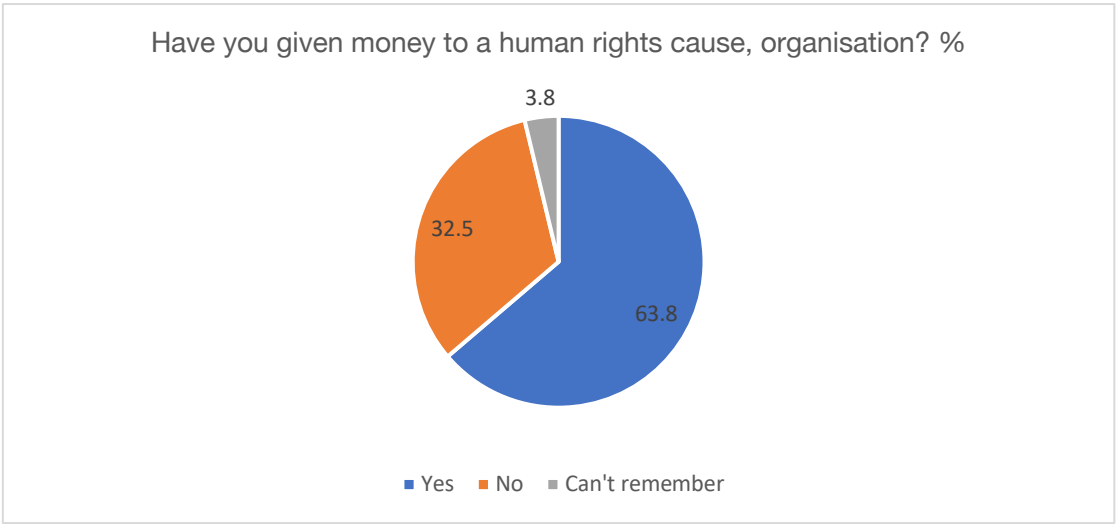


Figure 29. Q.18 philanthropic financial support for human rights causes is **reasonably strong** in contrast to Q17.

Q19 Willingness to pay or accept cuts in standards of living, an orientation test

Table 11. Willingness to pay and accept cuts in standards of living for environmental reasons

		Pay higher prices for environmentally better goods	Pay higher taxes to protect environment & ecology	Accept cuts in standards of living for the environment
N	Valid	80	80	80
	Missing	0	0	0
Median		4.00	4.00	4.00
Std. Deviation		1.153	1.260	1.205

Q.19 orientation to PEB indicated a steady median of 4 out of six across all the tests where 1 is “not willing” and 5 “very willing” with 6 as “can’t choose”. This is considered in discussion section.

See Appendix 4 For histograms representing results against a normal curve for Q.19

Q.20

Q.20.1 attitude *beliefs (too difficult to influence change) and Q20.2 orientation beliefs (I do what is right)*

20.1 was tested with Q.12 worried about climate attitude question. When a Spearman’s rho rank-order correlation was run to determine the relationship between both aspects (Q.20.1 and Q.20.2), a sense of pessimism was indicated on both parts of Q.20 with Q.12. It was found to be *highly* statistically significant at the .01 level (two-tailed):

Table 12 Correlation Q.20 with Q.12 (see discussion section)

	worried about climate change?	worried about ecology?
worried about ecology?	.665**	
too difficult for me to do anything	-.310**	-.298**
I do what is right for environment	.382**	.362**

**. Correlation is significant at the 0.01 level (2-tailed).

N = 78

The second part of Q.20 “*I do what is right for the environment…*” has opposing data from the first part, finding a median of 2 in a 5-point scale choice list, that is disagreement that change can take place, against a pessimistic outlook on personal actions which has a median of 4 in the same scale (Table 13).

Table 13. Q.20 median

	too difficult for me to do anything	I do what is right for environment
Median	2.00	4.00
Std. Deviation	0.954	0.811

Q.22, How often do you do the following?

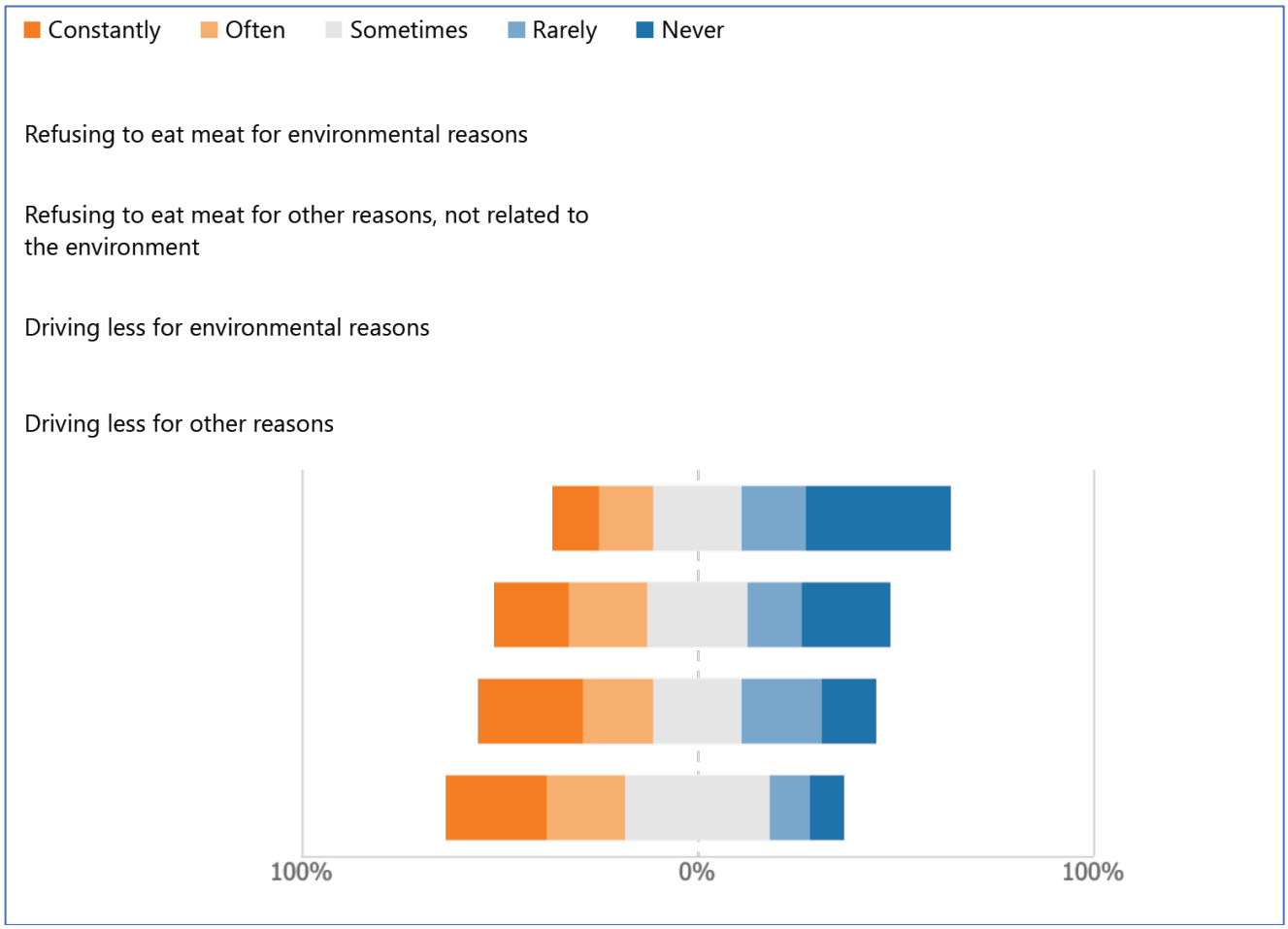


Figure 30. Q.22, PEBs of reduced meat consumption and driving.

For histograms of Q.22 see Appendix 5.

Table 14. Medians for Q.22 PEB

		Refusing eat meat environmental	Refusing to eat meat other	Driving less for environment	Driving less other
N	Valid	80	80	80	80
	Missing	0	0	0	0
Mean		3.53	3.01	2.78	2.58
Median		4.00	3.00	3.00	3.00
Std. Deviation		1.396	1.419	1.396	1.220

Q.23: *Following years of oppression, the Black community is now gaining more equitable access to finance and aspirational lifestyles therefore it is unfair to ask Black communities to take on frugal and low impact actions (eat less meat, don't have a car, take no air travel) to stop climate change and ecological demise.*

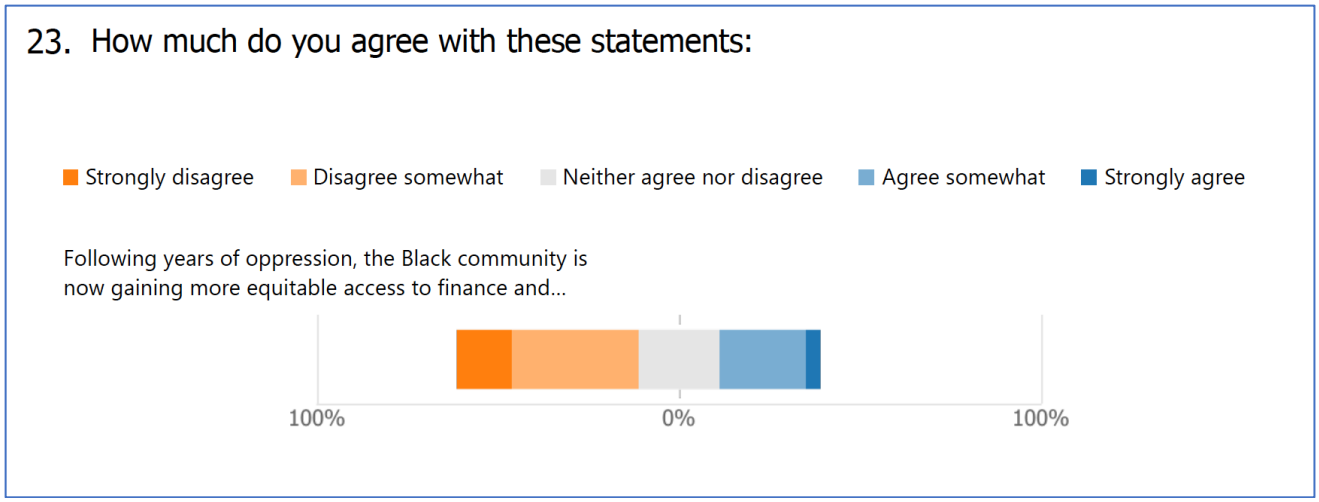


Figure 31. Q.23 results

Q.23 and Q.12.1.
Viewing results in a contingency table (see Table 15.) gave some indication that most of the participants who declared they are 'extremely worried' about climate change, strongly disagreed that Black people should *not* have to take PEBs (Q.23) which is considered in the discussion chapter.

Table 15 Q.23 and Q.12, contingency table

		Following years of oppression, the Black community is now gaining more equitable access to finance and aspirational lifestyles therefore it is unfair to ask Black communities to take on frugal and low impact actions (eat less meat, don't have a car, take no air travel) to stop climate change and ecological demise.				
		Strongly disagree	Disagree somewhat	Neither disagree nor agree	Agree somewhat	Strongly agree
How worried are you about degradation of ecology?	I am not worried	16.7%		5.6%	5.3%	33.3%
	2nd choice		3.6%	5.6%		
	3rd choice		10.7%	22.2%	31.6%	33.3%
	4th choice	25.0%	25.0%	16.7%	10.5%	
	5th choice	25.0%	28.6%	11.1%	36.8%	33.3%
	I am extremely worried	25.0%	32.1%	27.8%	15.8%	
	don't know	8.3%		11.1%		

1.4% of 4th and 5th choice on the "*extremely worried*" side of the scale, strongly or somewhat disagreed that Black people should not have to take PEB. 27% expressed neither agree nor disagree leaving 29.5% saying they should (after subtracting 2.1% 'don't know' respondents).
In comparing Q12 (test of attitude and concern about climate and ecology) and Q23 (unfair to take on PEB), Spearman's rho correlation was run to determine the relationship which was not found to be statistically significant, see Table 16.

Table 16. Q12 and Q23 correlation

	How worried are you about climate change?	How worried are you about degradation of ecology?
Following years of oppression, the Black community is now gaining more equitable access to finance and aspirational lifestyles therefore it is unfair to ask Black communities to take on frugal and low impact actions (eat less meat, don't have a car, take no air travel) to stop climate change and ecological demise.	-0.069	-0.174

Q.24 improved social justice for the Black community if climate change is halted

Viewing Q.24 and Q.12 results in a contingency table (see Table 17.) gave some indication that most of the participants who declared they are worried or extremely worried about ecology, strongly disagreed that social justice in the Black community would improve if climate change and ecology decline was prevented.

Table 17. Q12 and Q24 contingency table

		Do you think that preventing climate change and ecological degradation will improve social justice in the Black community? (For this research social justice means fairness in all aspects of society)		
		Yes	No	Maybe
How worried are you about degradation of ecology?	I am not worried		12.5%	
	2nd choice		5.0%	
	3rd choice	4.5%	25.0%	16.7%
	4th choice		30.0%	16.7%
	5th choice	36.4%	17.5%	33.3%
	I am extremely worried	59.1%	7.5%	22.2%
	don't know		2.5%	11.1%

In comparing Q.12 (test of attitude and concern about climate and ecology) and Q.24 (will justice improve/attitude), Spearman's rho correlation (Table 17.) was run to determine the relationship which was found to be statistically significant at the .05 level (two-tailed), -.221.

Table 18. Q.12 and Q.24 correlation coefficient

	How worried are you about climate change?	How worried are you about degradation of ecology?
Do you think that preventing climate change and ecological degradation will improve social justice in the Black community? (For this research social justice means fairness in all aspects of society)	-0.209	**-.221***

*. Correlation is significant at the 0.05 level (2-tailed).

Analysis part two – qualitative data

Respondents to the first part of this study, the quantitative questionnaire were asked to confirm if they were content to take part in a further aspect of this work to which 26 affirmative responses were received. A second questionnaire (see Appendix 2.) was then distributed to those people and ten replies were remitted back to the researcher. Respondents answered three open questions and an extra space was allowed for optional comment which all respondents availed themselves of except one. It was decided that giving an example of answers would not help but may prove leading, therefore all answers were self-generated by the respondents. The themes of the replies to the questions linked back to the literature review and are explored further in discussion chapter.

Analysis
To unpack the data, themes of interest were developed by analysing the questionnaire results whilst being mindful to reflect on assumptions that may come from the researcher. What emerged from the data are the following main themes in rank order:

1. Barriers, stumbling blocks and steep hills to taking PEB
2. Solution based themes for climate and ecology protection
3. Education about climate change and PEBs
4. Spirituality, pragmatism and succour

These themes are important in the literature for attempting to understand perception and barriers.

After further exploration deeper themes emerged which manifest as barriers, steep hills or stumbling blocks. *Exclusion or excluded*, both perceived and experienced. This had 81 references in the data; *Racism*, 34 references; *Disenfranchised and disempowered*, 19 references; *Needs modelled*; 16 references; *Justice issues (Environmental and Climate),* 15 references. Themes and connections will be discussed in the discussion section of this paper. A series of graphics are used to illustrate the analysis in this chapter.

The top five themes ordered by aggregate number of references (greatest first) are illustrated in Figure 32. A further visualisation of the whole set of themes is in Figure 33., and the top 20 themes by number of references appear in Table .

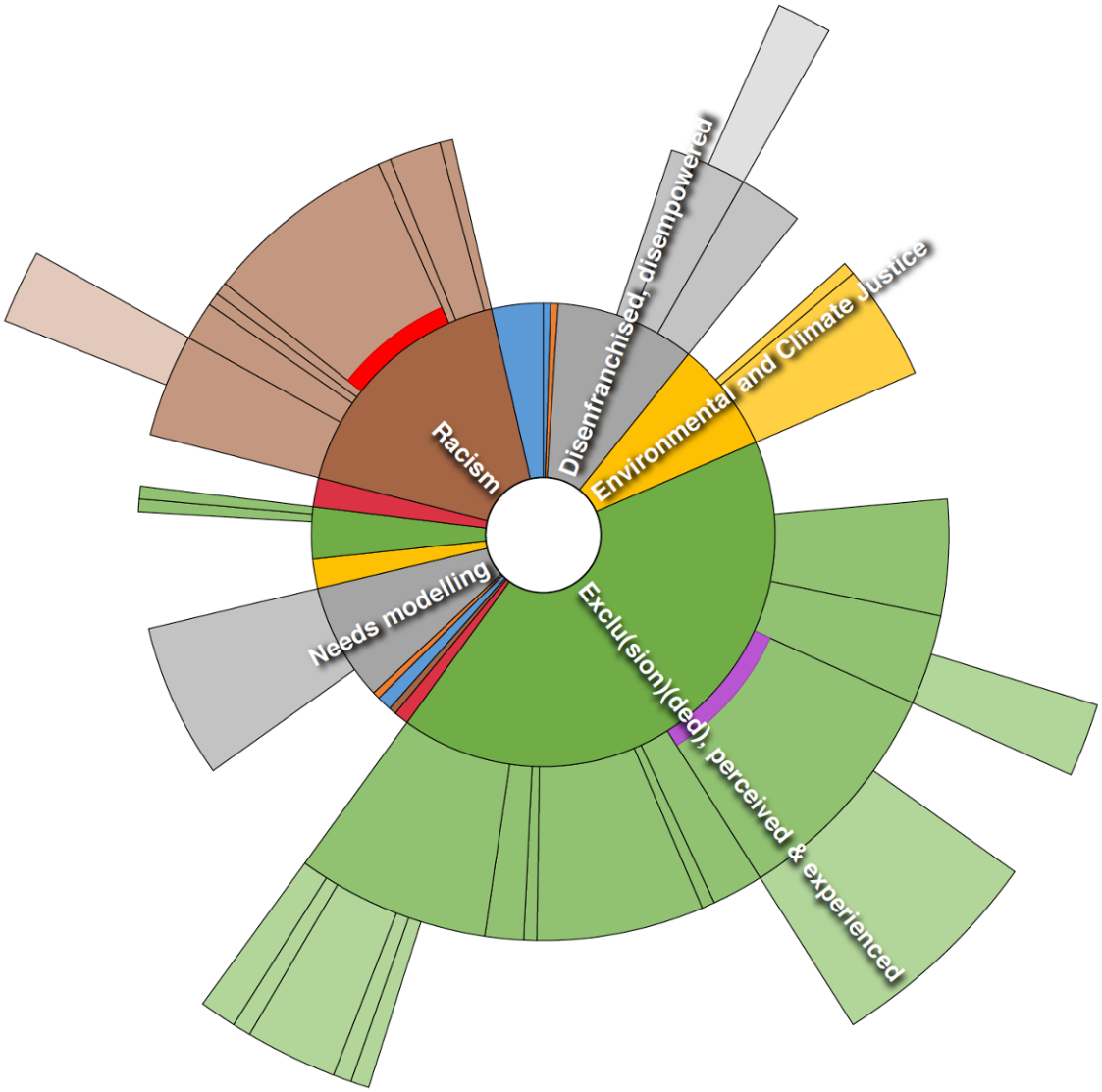


Figure 32. Sunburst illustration showing main themes and connections and number of mentions/references, Exclusion/excluded, both perceived and experienced 81; Racism 34; Disenfranchised and disempowered 19; Needs modelled 16; Justice issues 15.

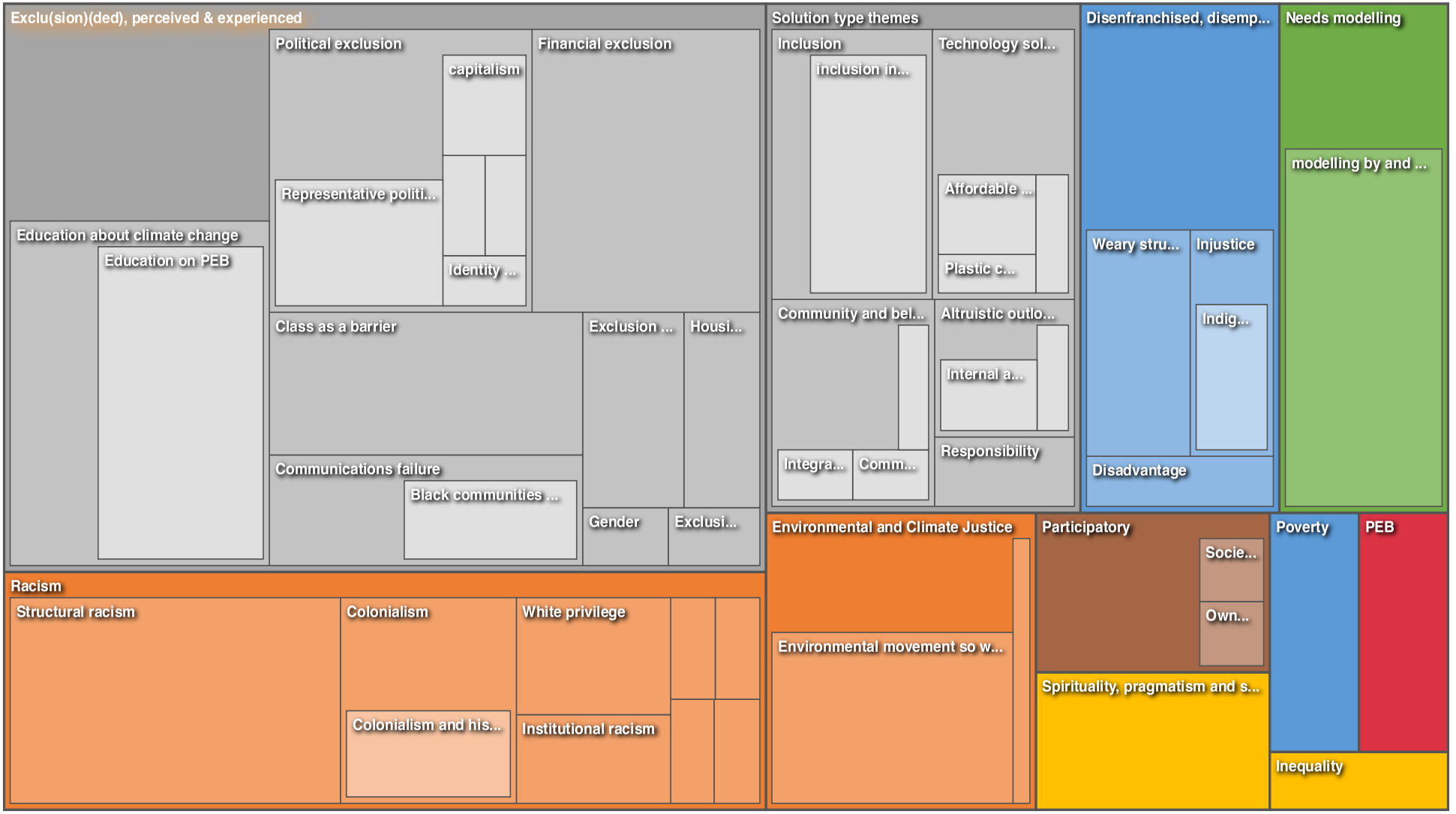


Figure 33. All themes displayed in a hierarchy, see Appendix 6 for full details

Table 19. Top 20 themes by number of references (for full list see Appendix 6)

Themes ordered by aggregate number of references (greatest first)	Number of coding references	Aggregate number of coding references
Exclu(sion)(ded), perceived & experienced	10	**81**
Racism	0	**34**
Solution type themes	0	**30**
Disenfranchised, disempowered	8	**19**
Exclu(sion)(ded), perceived & experienced\Education about climate change	6	**18**
Needs modelling	4	**16**
Racism\Structural racism	15	**15**
Environmental and Climate Justice	5	**15**
Exclu(sion)(ded), perceived & experienced\Political exclusion	5	**15**
Exclu(sion)(ded), perceived & experienced\Financial exclusion	13	**13**
Exclu(sion)(ded), perceived & experienced\Education about climate change\Education on PEB	12	**12**
Needs modelling\modelling by and within Black community	12	**12**
Environmental and Climate Justice\Environmental movement so white	9	**9**
Exclu(sion)(ded), perceived & experienced\Class as a barrier	9	**9**
Solution type themes\Inclusion	2	**9**
Racism\Colonialism	4	**8**
Solution type themes\Technology solutions	4	**8**
Solution type themes\Inclusion\inclusion in campaigns	7	**7**
Participatory	5	**7**
Solution type themes\Community and belonging as a building block	4	**7**

Solution based themes or alleviators

Whilst not initially direct answers to the study question, solutions are very helpful in the way of praxis to the problem of barriers to PEB and are visited further in the discussion section.

Discussion

Introduction

This paper sets out to query the Black community's position on environmental behaviour, seeking to gain an important understanding for how it plays its part and responds to one of the most significant problems of our time. Whilst the study's first objective was to understand the perception and levels of PEB in the community, the second sought to discover what barriers may exist to increasing change.

Objective a).

What is the Black community's perception of pro-environmentally responsible behaviours?

The results of the quantitative phase of this study finds Black people in the UK present in a similar extent to the wider general community on perceptions and beliefs about climate and ecology. This is with extension in some areas, mostly connected to justice and in attitudes and behaviours. Many older studies tend to find Black people are significantly less attuned to environmental and ecological concerns (Newell and Green, 1997) but this has been disproved in the later literature (Adeola, 2004; Song *et al.,* 2020) and by the findings here which answer the first objective. This study suggests high concern and awareness of climate change and ecology in the target segment of the population.

Demographic controls – heritage, income, education

The sample demographic aligns with UK census data on ethnicity with results slightly biased to an increase in African heritage response.

Table 20. ethnicity of respondents as % of total and UK equivalent (source: ONS, 2018)

	Respondents %	**2011 UK census % of total Black**
Black African	64	59 (1.86m)
Black Caribbean	21	32 (0.98m)
Black other	15	9 (.28m)

Income was relative to the national average. Education and income have a positive relationship and influence on PEB (Hegvedt, 2019; Kollmuss and Agyeman, 2002), with which the results here concur (see Table 8. Income and PEB).

However, this does not solve the challenge of an *ability* to pay for environmental improvements, goods or protections versus a *willingness* to pay. Referring back to the point made in the analysis about capacity to act and the willingness to pay for PEB. This study is not able to uncover if lower incomes have that same willingness, because lower incomes could be more focused on survival and liberation than PEB. The themes uncovered in the second part of this study point to this, which is an area for further research.

The cohort has slightly more formal education attainment than the general population as measured using achievement on the UK's Regulated Qualifications Framework. This research shows that education on environmental matters has little effect on PEB as opposed to general educational attainment or length of education exposure which does have an effect (Kollmuss and Agyeman, 2002) which is somewhat paradoxical. Where higher education is said to imply more environmental concern and behaviours, no clear demarcation stood out, but a slight preponderance was noted towards higher attainment as more likely to drive PEB to reduce climate change. Respondents were very aware of climate matters and impacts and we find a strong relationship between education and income driving PEB. This supports the argument of Tam and Chan (2017) that education, income and heritage are drivers of PEB or environmental concern, which is contrary to the premise Newell and Green first posited in 1997 that lower incomes and low education do have an effect. Their theory is that Blacks are less sensitive to environmental and ecological concerns at low income levels but findings in this research indicate that it is not as clear as they suggest. There is some correlation in the data for lower income brackets and low educational attainment having lower PEB, but the difference is not significant. We find higher attainment has stronger environmental concerns and PEB, but our cohort is well educated so further work is needed at a granular level on impact of low incomes and low educational attainment on PEB.

Gender

Gender was measured as a control factor to test sampling and is reflecting of wider UK society which in 2011 had 51% female, 49% male, with Black at 52:48 respectively (Office of National Statistics, 2018). Our respondents defined their gender as 54% women and 44% men with 2% preferring not to say (*N*=80). The absence of discussion on gender related impacts is very noticeable in the data despite the subject being critical and with wide coverage in the literature (Chaudhury, *et al.*, 2012; Codjoe, Atidoh and Burkett, 2012; Aguilar, Granat and Owren, 2015; Ockwell *et al.,* 2018; Fortnam *et al.,* 2019). This is certainly an interesting area for further study.

Question 4, values to behaviour test

A test was designed to indicate environmental values on a scale of 1-9, with 1 being the most enviro-conscious choice and 9 the least. This is based on the premise that the impact of an environmental behaviour is what defines a behaviour (Stern, 2000, p. 907), and that people who take at least some actions are more likely to be induced to take more (Kollmuss and Agyeman, 2002). The threat from activities related to food, household operations and transportation are greater than others (Markle, 2013). Depending on the order the choices were placed in, respondents would show their enviro-consciousness in behaviour terms. Spending time in nature was set against consumerist choices, shopping, vehicle use and gadget acquisition. We see in the results the medians indicate an environmental attitude in the whole cohort with "*spending time in nature*" consistently appearing as one of the top ranking choices. Learning new skills, doing things with the community and making home improvements were all at the natural median. Three consumer/transport related choices which are the least environmentally friendly ranked consistently below the natural median as least chosen options. Rankings reflected an average to moderate propensity to pro-environmental values across the whole cohort which is common in this community (Adeola, 2004). This is evidence of validity of likely PEBs and ergo, the Black community can be said to be environmentally minded. Social demographics can only explain part of the picture in the general population (López-Mosquera and Sánchez, 2012) but

attitudes, values and beliefs are considered to be drivers too with the rational or reasoning aspect of the Theory of Planned Behaviours completing the picture.

Nature relatedness (NR) (Nisbet *et al.,* 2009) and nature connectedness (NC) (Taylor, 2018) both examine an experiential and cognitive view of nature. Whether this data shows how strong NR or NC is in the Black community is unclear, moreover, apprehension about the countryside which possibly has an impact in this respect, is not tested.

Beliefs
Questions (Q) 5, 6 and 7 were used to compare perceptions and beliefs about climate change, against the outcomes from the European Social Survey (ESS) Round 8, which had a focus on climate change (Poortinga *et al.*, 2019). Belief in a changing climate is substantial amongst the study respondents in line with Poortinga *et al*'s results. The trend scepticism "*probably not changing", "definitely not changing"* and "*don't know"* is very low at 6.25% . UK trend scepticism in Poortinga *et al.,* is 6.4% (p. 28).

This research finds statistically significant results for "*worried about changing climate"* (Q.13) (see Table 7, Q.7 and Q.12) that indicates a higher level of concern against the ESS results showing concern is "around the midpoint" (Poortinga *et al.,* 2019, p. 29). However, ESS looks at other factors and regions and not just ethnicity

None of the respondents believed natural processes alone are causing climate change, but one believed it has other unspecified causes. However, there is a strong belief amongst the surveyed community that the risks and impacts from a changing climate in Africa, Caribbean, and to a lesser extent here in the UK, will be severe. The impacts question (Q.7) gives good indication of expectations of a recognition that there is a problem and that it impacts heritage origin countries. A statistically significant correlation was found between belief in severe impacts and a worry about future change. This is useful knowledge, for example for adaptation planning or communication and campaign tools.

Attitudes
It was found there is a positive correlation to support for the environment and a concern that change is happening which is human induced. Despite this, 42.5% never or rarely held conversations about climate against 25% that did. It is unknown why there is this skew to reticence but in future studies, this question could be explored further by asking, if it is about day to day survival, expecting a technology fix or a feeling of helplessness and despair or that it is not considered "cool" or relevant to discuss?

In the literature there is discussion about the level of restraint to talk about environmental matters, repeating the examples in the previous sentence (survival, technology, helplessness) and adding others like physical distance to climate impacts and the subject or how it is framed to that community (Becker and Sparks, 2018). Defensiveness driven by cultural practice or climate deniers using their parallel narratives, or the facing of potential loss induces anxiety (Nordgaard, 2011; Adams, 2015). Whatever the reason for reticence to talk, this study is limited in exploring this area of interest but recommends it as important future research. The respondents in this data show they have a level of worry about the environment:- there was a statistically significant correlation between talking about climate and being worried about it, so whilst

maybe the discourse is reaching the community, it is not surmounting the problem of talking about it, hence the call for further research.

Environmental identity is a self-assessment feature that it has been suggested drives PEB as it represents the identity an individual wants others to perceive in them. How much of this is impacted by Black identity needs further research.

Worrying and thinking about the environment encourages a political mindset to feel strongly towards investment in environmental protections. A *highly* statistically significant correlation was found in these areas of attitude (see Table 6.). Whilst still statistically significant, it is slightly less so for participants who wish to see environmental protection for rural areas. This could be down to the cohort being mainly urban (see Table 21.).

Table 21. Ethnicity of urban population (source Race Disparity Unit data.gov.uk, 2019)

	African	**Caribbean**	**Mixed white & either African, Caribbean or mixed other**
England	1.8%	2.1%	≤ 7.7%*
Wales	6.7%	16%	≤ 19.5%

* *Aggregated across England regions as mean average*

PEB – consumer, conservation, citizenship choices, socio-political
No statistically significant correlations were found between limiting energy use, and either income, ethnicity or educational attainment, but median of PEB was found to be high in the community with a skew towards taking action on limiting energy use. This was seen across household income brackets below £15k and £15k-£30k. £45-60k had the most belief that the Black community would limit energy use to reduce climate change. £30-£40k and +£100k income ranges were evenly split. The sample size was probably too small to make firm predictions, but the data matches ESS results in Poortinga *et al.,* (2019). This result could be investigated by asking questions such as whether energy saving equals financial savings or some other factors.

Limiting energy use Q.8, and active travel, energy water conservation Q.22 were tested with "*worried about climate/ecology"* Q.12, and when a Spearman's rho rank-order correlation was run to determine the relationship no relationship was found for energy conservation, but it was found to be statistically significant on both active travel and water conservation, see Table 9. This finding matched the overall position of Hegtvedt *et al.,* (2019) in that framing and feeling cause PEB.

Seminal work in behavioural studies on attitude and behaviour by Fishbein and Ajzen (1975), and Ajzen and Fishbein (1980) claim that driving a vehicle is not directly affected by the attitude to climate change, therefore other measures are needed to explore this. However, the data in this research has a statistically significant correlation for reducing car use/increased active travel and environmental attitudes and belief which updates the knowledge base from these previous studies.

Socio-political/external framing and mindset, most notably subsidising renewables, also encouraged taking PEB, in this instance by being a member of an environmental organisation, and had a statistically significant correlation. The socio-political framing was also statistically significantly correlated with environmental citizenship. When

comparing the same test of socio-political/external framing and mindset, but for reduced meat consumption and being a member of an environmental organisation, Spearman's rho correlation was found to be *highly* statistically significant. There is further evidence that attitude drives PEB on limiting energy use and concern or worry about the environment. The correlation was statistically significant in both cases of active travel and conservation PEB which are consistently strong. In these tests in this research we find further proof that an environmental mindset drives PEB (Hegtvedt *et al.,* 2019, p.617) in the Black community.

However, when considering barriers, a statistically significant correlation was found, between worry for the environment and the lack of social justice, which indicates a pessimism that social justice will not improve despite further environmental decline (see Tables 15. to 18.).

A *highly* statistically significant correlation (at the .01 level) was found between belief/orientation that environmental decline is inevitable, with the pessimistic view of helplessness and that it is too difficult to do anything about it (see Table 12, correlation of Q.20 with Q.12). Adeola (2004) finds a similar frustration and helplessness (p. 932). Aside from the fact discussed above that there is a reticence to talk about it, this does give some evidence that barriers exist, which are most likely in exclusion and structural forms as is exposed in the latter part of this research. The two drivers of belief in problems along with a pessimistic feeling of helplessness are not mutually exclusive and it is the barriers proposed for objective b. (what are the barriers), in this research that need surmounting.

Respondents are politically inclined towards pro-environmental interventions and subsidies and to a slightly lesser degree on taxes. The median on a seven point scale of 4.0 and 5.0 respectively are high, matching tendencies as seen in other studies such as Adeola (2004).

No strong representation was shown for citizenship or political attitude as expressed in membership of environmental organisations. This is not a contra-indicator of PEB as espoused by Adeola (2004, p. 919). It is clear from the qualitative analysis that there is a strong feeling the environmental movement is white and exclusionary, but which can be assumed is socio-cultural (Chanin, 2018; Poortinga *et al.,* 2019) and an adjunct of abolition ecology (Heynen, 2016).

A campaigning or activist mindset in the data confirms that whilst active involvement is low for this external framing (Hegtvedt *et al.*, 2019) it is not fully absent with participants willing to sign environmental petitions. Philanthropic financial support for environmental organisations is low too but it may have other reasons that have not been explored in this research, such as matters more likely associated with exclusion and whiteness of the movement. This is further qualified by willingness to make donations to human rights causes that shows altruism is not contrary to participants' citizenship drive and likely driven by reasoning/rational aspect of Theory of Planned Behaviour (see Figure 6.).

It is argued that spirituality (both religion and non-religion) based is seen to drive behaviour (Briguglio *et al.,* 2020) and is present in the data. PEBs of active travel and conservation are taken by those who "*strongly agree"* or "*agree*" humans should respect the spirituality of nature (see Figure 24. and Figure 25.).

The tests for willingness to pay for environmentally better goods, higher taxes for policy and protections, and to accept cuts in living standards showed the Black community is advanced in environmental orientation with the same median result across all three of these tests (See Table 11).

"Willingness to pay higher taxes" for policy and protections was less strong with the biggest standard deviation of 1.260. Adeola (2004, p 914) too finds a similar willingness across the same test, verifying this study's findings that the community has slightly less willingness to pay higher taxes. Society tends to prioritise the wellbeing of 'ourselves' and family including in environmental matters, (Stern *et al.,* 1993), which is aligned in this research - values drive PEB actions to take place. The data on willingness to pay, along with value ranking in Q4 indicating a strong family and community orientation, suggests this may be a factor.

"Too difficult to do anything about climate." was tested with "worried about…[environment]" as an attitude test. When a Spearman's rho rank-order correlation was run to determine the relationship between both aspects (Q20.1 and Q20.2) it was found to be highly statistically significant at the .01 level (two-tailed). A sense of pessimism was therefore highlighted on both parts of each test.

The second part of the question "Too difficult to …" has reverse (negative) data from the first part, finding a median of 2 in a 5-point scale. This shows a general disagreement of Blacks who find it frustrating that change will take place, against a pessimistic outlook on personal actions which has a median of 4 in a five (5) point scale (Table 13).

Justice and fairness

Respondents who said they strongly disagree that it is unfair to ask Blacks to be frugal, that is they believe Black people *should* do more PEB, and shoulder the burden of preventing change despite improvements in liberation, were more likely to say they did not believe social justice would improve if environmental impacts were lessened. Over 50% of the cohort, said they did not think justice will improve with impacts (see Tables 16 and 17). This indicates a sense of responsibility and civic duty for the Black community to play their part, whilst also indicating a feeling of futility that justice would not prevail even if impacts were reduced. Pessimism is a recurring theme not least in the qualitative data for objective b on barriers.

There were tendencies towards environmental values as a mindset, but contrary to some studies, it was unclear if environmentalism matters more than an environmental justice frame in driving PEBs (Parris and Johnson, 2019). It is puzzling that justice is claimed to be only a weak driver of PEB (Hegtvedt *et al.,* (2019, p. 615) but this is a limitation of this research and an area for further research.

Objective b).

To determine what barriers prevent the reception or uptake of pro-environmentally responsible behaviours.

The second phase of the study was a qualitative questionnaire that investigated barriers to PEB. Results give an indication for a feeling of disenfranchisement or disempowerment from environmentalism, plus exclusion and of a lack of justice. Specificity was given to inadequacy of communications and campaigns, which together with the other findings portray an overarching feeling of oppression. The quote in Figure 34., encapsulates this particular sentiment, excluded despite capability and knowledge, which is not unusual in communities that are Black or marginalised (Anguelovski, 2015; Woroniecki, Wamsler and Boyd, 2019).

> *"We don't see ourselves in the picture except when we're reading about environmental justice issues, so the participatory aspect goes over our heads. We're responsible too and are capable of helping, show us what our role can be."*
>
> *Respondent 3*

Figure 34. Quote from a survey respondent

There is a clear recognition from respondents that those who will be most affected by a changing world, are least responsible for climate change and environmental damage. Some unlooked for and intriguing additional findings emerged in area of solutions which will be discussed below.

The data
Research by *The Climate Outreach Information Network* chose not to focus on race for studying barriers to climate communications in UK society, but instead selected values as key influencers of behaviour (Wang *et al.,* 2020). The data in this study critiques with proof that when seeking barriers to change, enquiry must widen from values to include community and heritage aspects for improving PEB take-up.

The Themes in the data
Initial themes revolved around stumbling blocks and steep hills, solution-based themes, education about climate change and PEBs, with spirituality, pragmatism and succour an interesting adjunct. Relating these themes back to the literature review facilitated a more concise breakdown of deeper referenced feelings which cascaded down from the main headings.

1. Exclusion or excluded, both perceived and experienced 81 references
2. Racism 34 references
3. Spirituality, pragmatism and succour 30 references
4. Disenfranchised and disempowered 19 references
5. Needs modelled 16 references
6. Justice issues (Environmental and Climate) 15 references

See also Figure 33., all themes hierarchy.

1. Exclusion or excluded, both perceived and experienced; 81 references

This theme encapsulated exclusion from wider society as denial of access or participation (Levitas, 2005; Levitas *et al.,* 2007; Thomas, 2012; Crenshaw *et al.,*1996). 81 separate references indicated a wide scope of feeling on exclusion, certifying it as a specific barrier. Exclusion from rural Britain is a common problem amongst minority communities (Garland and Chakraborti, 2006) and was referred to by two out of the 80 respondents.

Figure 35 gives a visual presentation of the list. A full breakdown of all themes appears in Appendix 6.

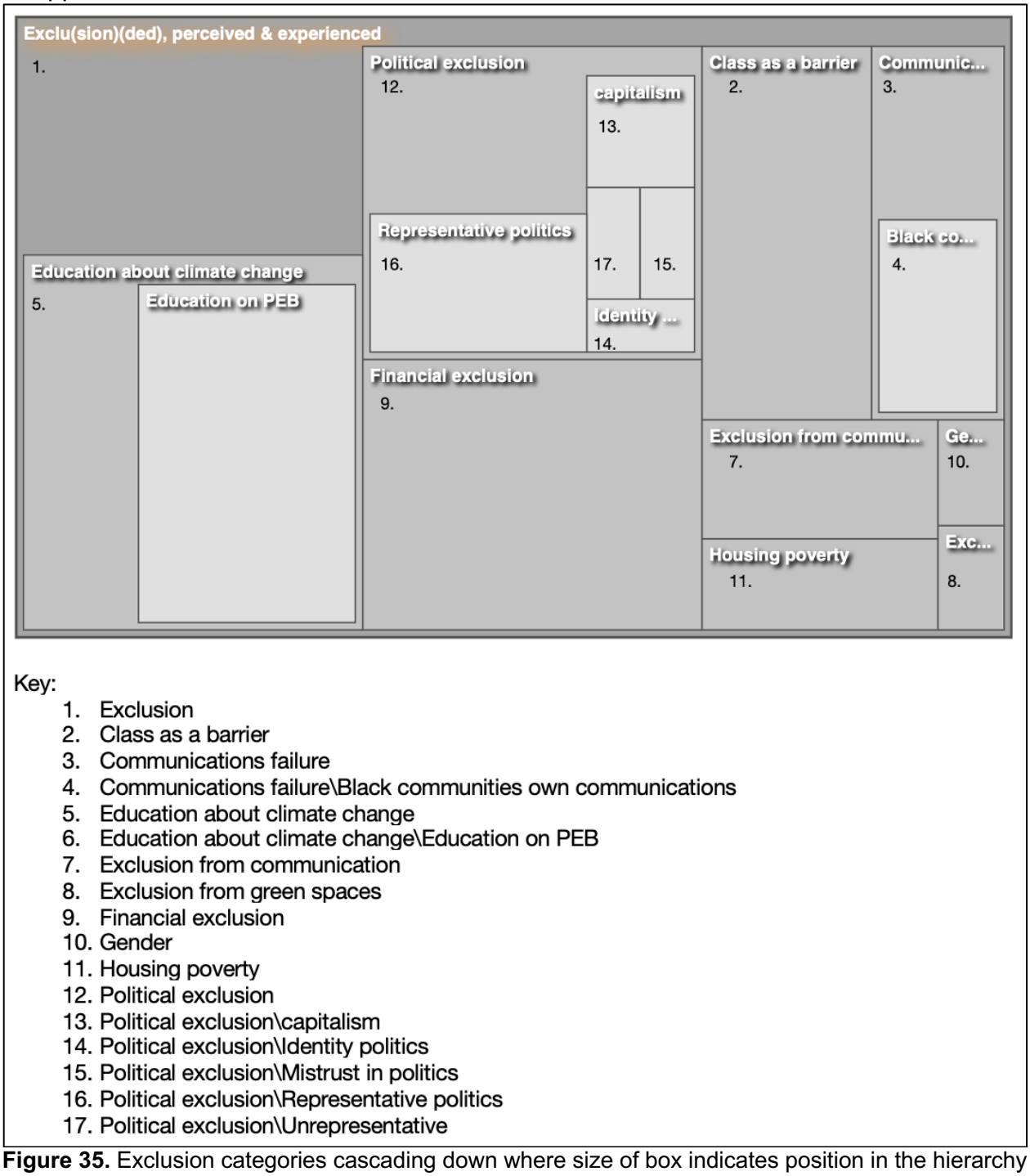


Figure 35. Exclusion categories cascading down where size of box indicates position in the hierarchy

The political aspect of exclusion was well represented with a clear expression of disenfranchisement and lack of agency alongside a call for better political engagement

and representation. Identity politics emerged along with a mistrust in general politics, a mandated declaration that trust must be regained (was it ever present at all one may ask?). A number of references were made to capitalism in relation to its exploitative bent, but also as a temptation towards consumption and anti-PEB activity

> "*Structural racism impacting stress levels and income resulting in more convenient consumptions behaviours that tend to be less sustainable".*
> *Respondent 5.*

Education occurred frequently for informal or institutional provision, which in itself is recognised as problematic with a wide literature exposing an institutionally racist education system (Demie *et al.*, 2017; Hutchinson, Reader and Akhal, 2020). Education on PEB, climate and ecology was expressed as missing or inadequate and with a lack of targeted solutions including campaigns from the environmental community.

> *"More access to environmentally responsible behaviours through education".*
> *Respondent 5.*

Professional training in the field was deemed to be lacking for entrepreneurs and business people. 12 respondents commented on benefits of PEB within and by the Black community itself, claiming a need for accessibility and to build capacity to express itself as socially responsible and aware.

> *"We're responsible too and are capable of helping, but please show us what our role can be".*
> *Respondent 4*

An expression of exclusion on communications is encapsulated within a failure to create a lack of specific narrative for the Black community. Attempts at normalisation of PEB such as plant-based diets and benefits for heritage countries is absent. Recognition by the community validates these statements for example,

> *"…campaigns that talk specifically to us to educate us on how we can participate"*
> *Respondent 3*
>
> *"education to normalise things like plant-based diets"*
> *Respondent 5*

The class system was repeated with frequent complaints about PEB and environmentalism per se as "*middle-class*" and "*white-middle class*" coming from seven respondents, citing a creation of oppressed under representation and taking place on different levels (figure 36.). The word "class" appears in 44 separate sentences.

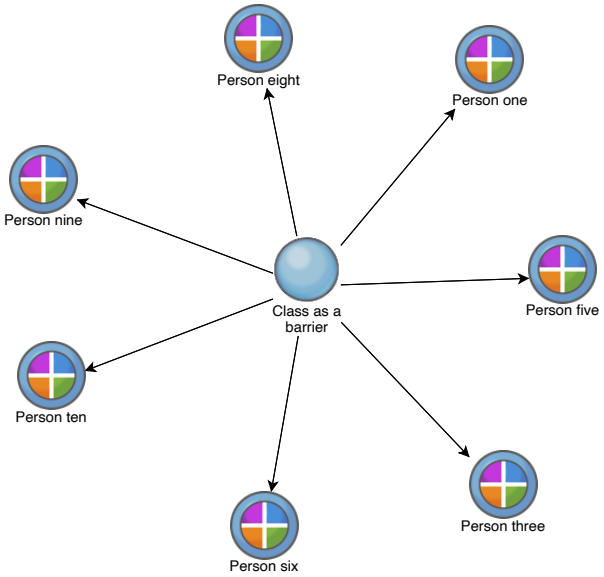


Figure 36. 7 respondents claimed “class” as an exclusionary barrier

The case of un-affordability of PEBs and imagery of PEB as being class based and exclusionary is therefore symbolic racism *à la mode de* Zižek (2008). The fiscal (government) aspect of finance and more general economic deprivation through exclusion was definitively expressed as a fault or outcome of structural racism and class systems.

2. Racism; 34 references

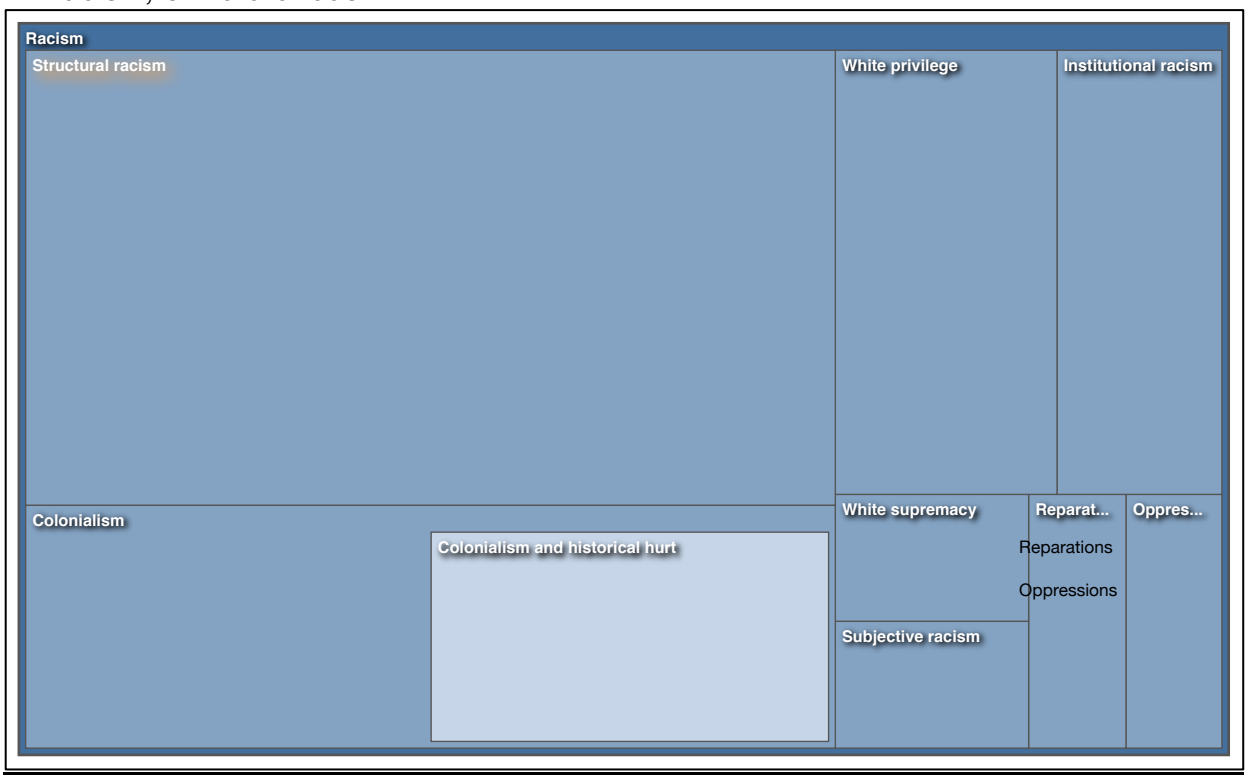


Figure 37. Racism categories cascading down where size of box indicates position in the hierarchy

Racism as a theme of systemic, unequal power and privilege (Collins, 2002; Vaught and Castagno, 2008) appears as accusation of oppression, white-supremacy, institutional,

white privilege, colonialism and structural with a call for reparations. As with exclusion it is a refrain in some form across all nine out of ten respondents (see figure 38.).

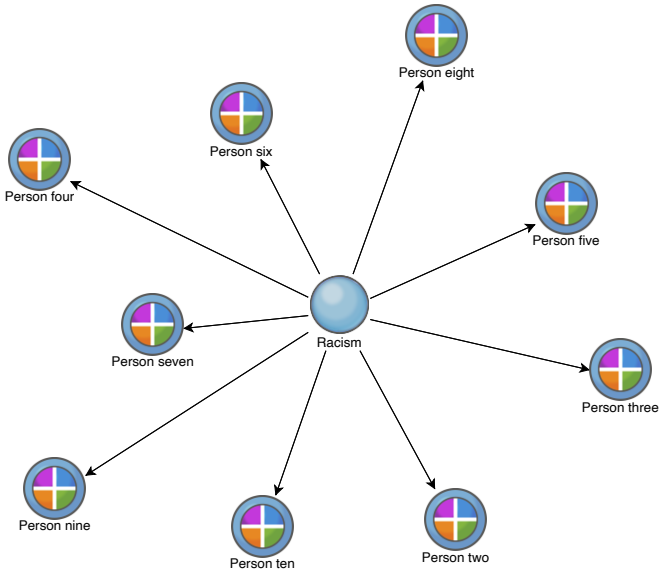


Figure 38. Nine respondents referred to racism as a barrier

Specific claims were made that,

> *"we live in a racist society that doesn't acknowledge it's colonial history"*
> *Respondent 2*

and how,

> *"it is responsible for climate change that hurts Black countries"*
> *Respondent 2.*

"*Middle class suburbanites*" are eloquently blamed twice for perpetuating exclusion and with citings of specific heritage country impacts, named specifically as scions of colonialism,

> *"There should be statistics, evidence and guidance to help them fight against carbon emissions, using more efficiently in energy, green power advocacy, etc. Also, they should be more narratives shared within the Black community on what happened to the late Ken Saro-Wiwa and the Ogoni protesters in Niger Delta 25 years ago after they discovered Shell's greed for oil is environmentally damaging the state."*
> *Respondent 9*

> *"how environmentally irresponsible attitudes and behaviours harm Black communities around the world…e.g. The Coltan controversy and how the toxic acquisition of mineral resources causes conflicts and social and environmental damage, e.g. the Agbogbloshie waste dump in Ghana, … how waste from environmentally irresponsible behaviour is shipped to Black communities globally, thereby weakening Black communities in the long run."*
> *Respondent 10*

3. Disenfranchised and disempowered; 19 references

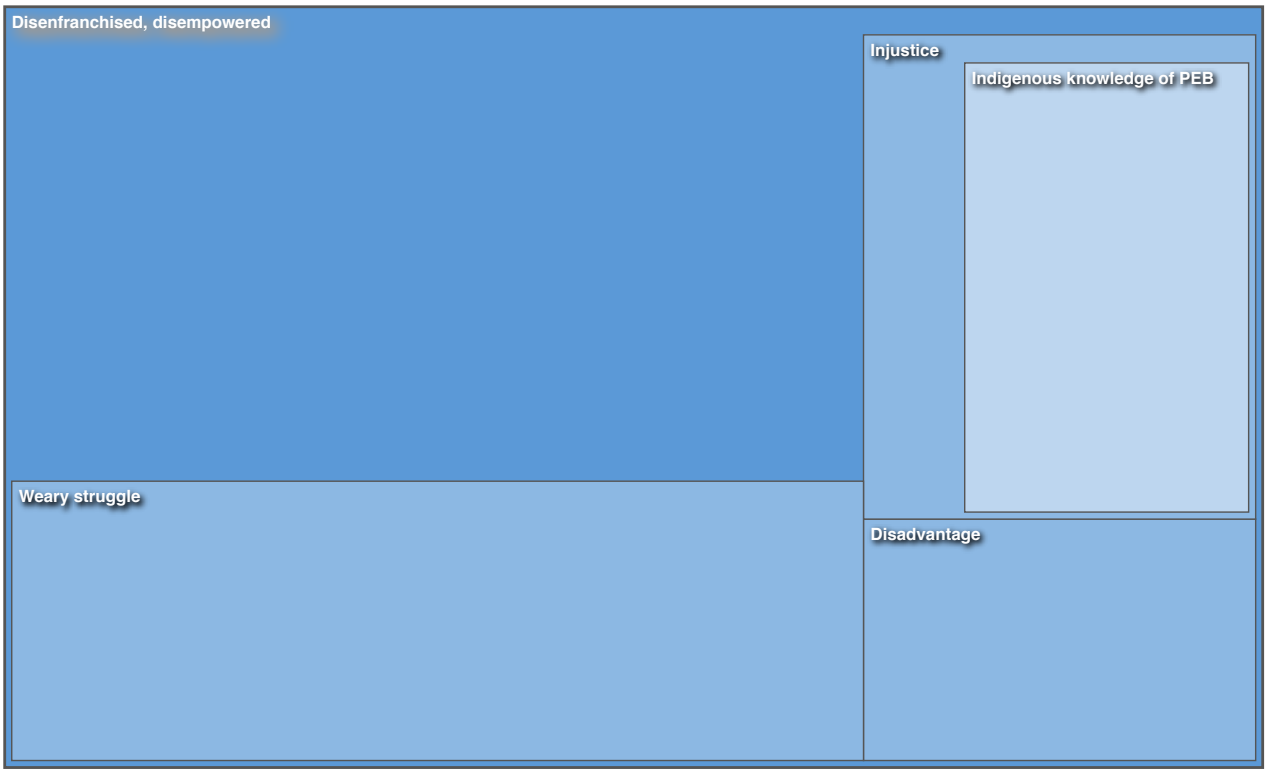


Figure 39. Disenfranchised and disempowered categories cascading down, where size of box indicates position in the hierarchy

Community voice is felt to have been taken away, stolen by structural racism, and builds the theme of imposed, ineffective participation compounded by a lack of agency.

> *"It sucks that colonization and capitalism have taken away from what was already an established sustainable culture of living"*
> *Respondent 5*

The stress and struggle of marginalised living leads to what can be interpreted in the data as a living weariness, a lack of control and stolen agency. The poignant expressions of disempowerment in this research are strong and incisive:

> *"when one is unable to control one's immediate environment, achieve one's goals, it's very hard to think about trying to solve massive world issues"*
> *Respondent 7*

This recognition of the damage of empire and imperialism and of denied indigeneity is an acute recognition of situational barriers. Disadvantage was indicated as a problem with a recognition of denied equality and equity extant. One tempering comment expressed a need for honesty of Black community to recognise shortcomings.

> *"Some kind of a wake-up call, and a movement to show how some of us (in black communities) are part of the problem that is destroying our communities and our futures."*
> *Respondent 10*

4. Needs modelled; 16 references

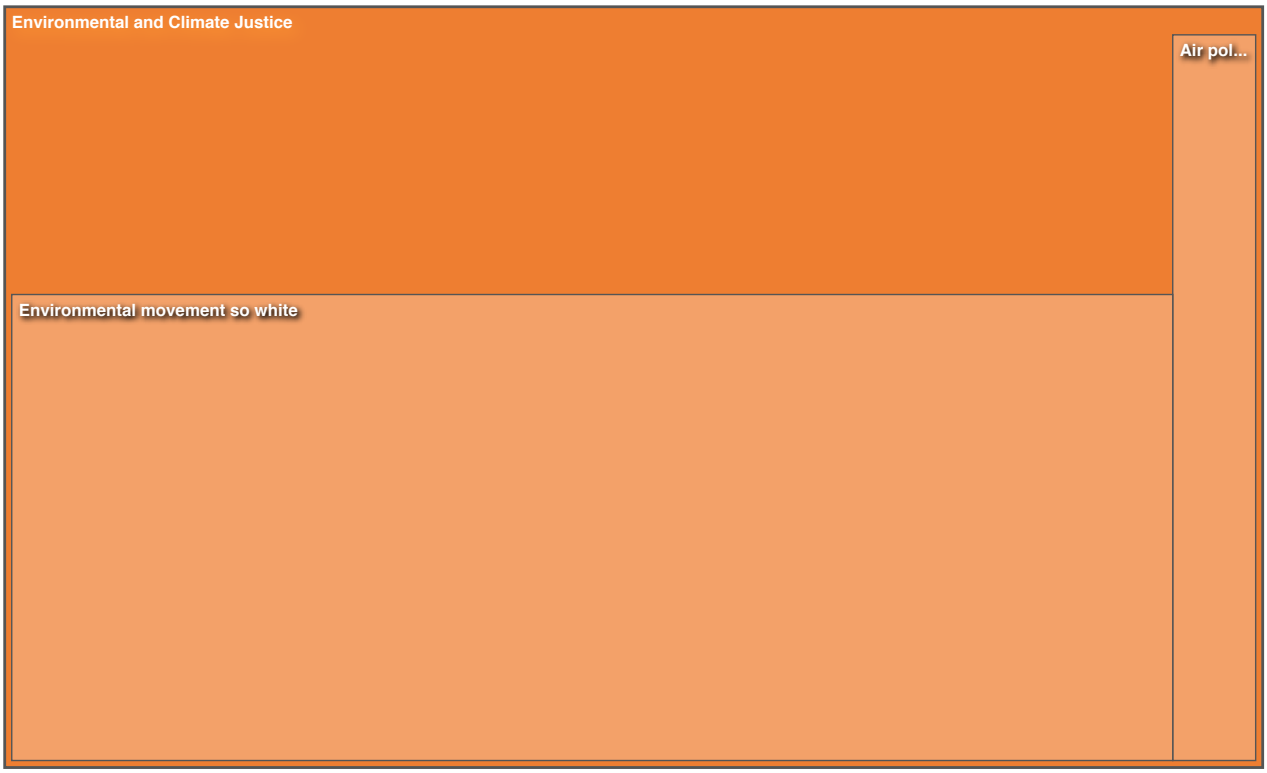
Figure 40. Modelling categories cascading down where size of box indicates position in the hierarchy

A particularly interesting thread occurred 16 times (6.68% of coverage) that encapsulated a recognition of the need for modelling within and by the Black community, where modelling equates to positive examples motivating good behaviour, in essence promoting of role models (Brown and Ogden, 2004; Steg and Vleg, 2009).

This is not a blocking barrier but an access matter in that it calls for beneficial actions and specific counters to exclusion and disempowerment where capacity is lacking but the will/desire and maybe even knowledge is present. It speaks about erasure of a valid voice.

A rejection of capitalist consumption and damaging behaviours, and a return to "traditional" living practices was requested along with a strategy to utilise skills, people-resource and spirituality within the Black community to drive PEB. Internal support and (role) modelling of behaviours, intra-community training and support was requested. The eloquence and detail from respondents here probably reflects the higher education levels of the whole cohort of respondents but is a definite area for further research and enquiry. For example it would be interesting to know how much recognition of oppression or lack of justice drives this insight.

5. Justice issues (Environmental and Climate); 15 references



**Air poll = air pollution*

Figure 41. Justice categories cascading down where size of box indicates position in the hierarchy

The data had clear expressions that Black community is only brought into climate matters when it's a justice issue. Symbolic racism (Zižek, 2008) as an infantilisation of the community, subjugation to a white saviour/white supremacy paradigm is frequent in colonialism (Wilson, 2012, p 47-52) and covered abundantly in development literature. Knowledge of climate and environmental injustice taking place in various heritage countries is expressed as noted above. Impacts that are not just overseas, but in the UK like air pollution in poor and marginalised communities is aired.

> *"If we're part of a community that has only ever lived in […inner city…], the ways in which we personally can benefit from pro-environmentally responsible behaviours needs to be spelled out to us. …if you're personal environment has never had any of these things it's a leap to imagine a specific action will lead to these benefits for you rather than for middle class surburbanites."*
> *Respondent 3.*

This latter may partly be due to the prominence during 2020 in the media and judicial arena of the case of a Black child Ella Addo-Kissi-Debrah, who has in a historical precedent, had air pollution recorded as the cause of death (Harrabin, 2020).

6. Solution based themes or alleviators

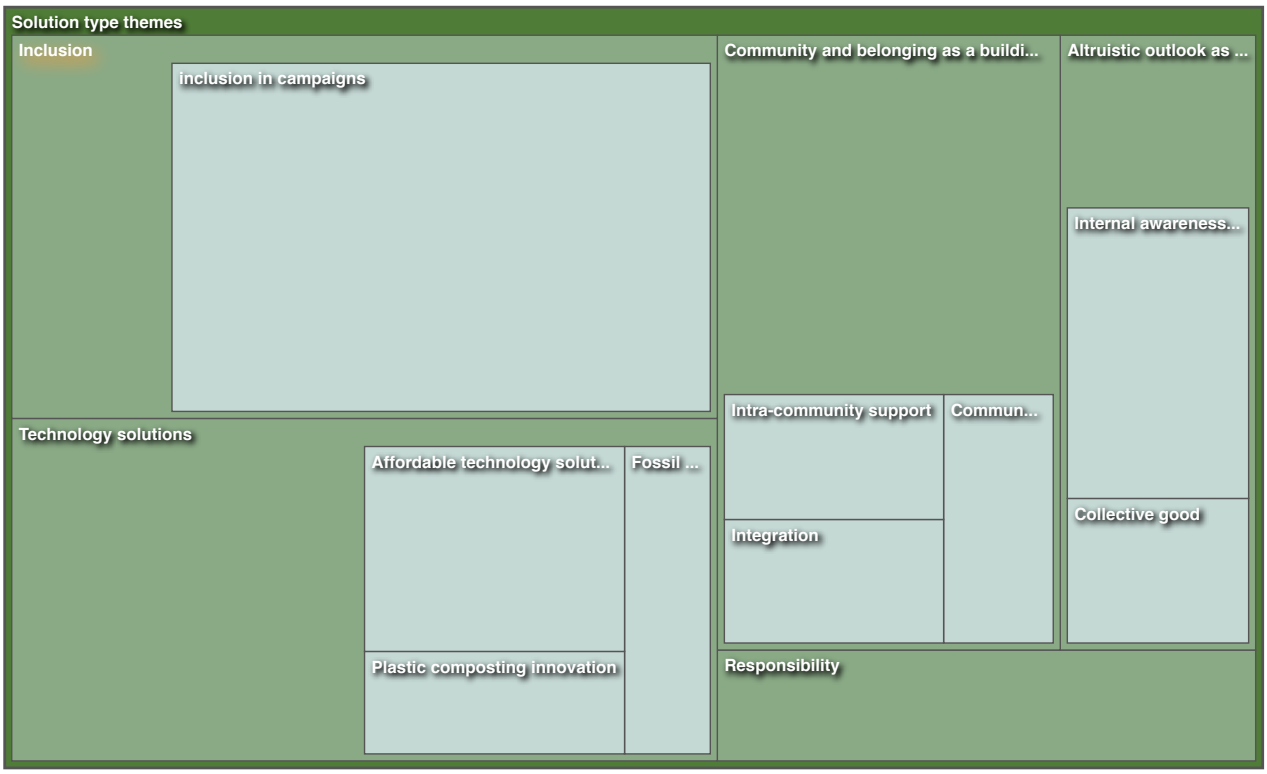


Figure 42. Solution categories cascading down where size of box indicates position in the hierarchy

If barriers are only sensed as negative, then potential for positivity in adaptation to environment problems risks being neglected. The increasing challenge of mitigating for climate change, global heating and ecological degradation is going to impact strongly in countries of heritage. Themes of innovation and technology solutions as proposed by respondents imply a joint sense of resilience and a positive outlook. Community in and of itself is a robust tool for promoting desirable behaviours including PEB (Baldwin, 2010) and the sense of community from respondents was palpable. Community appeared on 22 occasions in the data as either a linking word/concept or alone as the subject of statements, 12 of which were on modelling need within the Black community (see appendix 6.).

> *"Active engagement within the Black community, demonstrating that they are also stakeholders and can be participants in their environment."*
> *Respondent 4*

Engagement, integration and intra-community support as a strong thread in the data could be expected as commitment and community are mutually supportive (Kelley and Thibaut, 1978). Other solution based quotes from the respondents are shown in Table 22.

Table 22. Solution based responses

Perceived themes as solutions	Qualitative responses
Altruistic outlook as a driver	*"How to surmount barriers? With maturity"* *"Looking beyond oneself and one's community"* *"Maturity, looking beyond oneself and ones needs"* *"To first have an internal realisation and to have mental, social and financial space to act in one's beliefs"*
Responsibility	*"We're responsible too and are capable of helping"* *"Access to the things we can participate in or with - e.g. recycling bins where many of us live in council housing etc, recycling campaigns don't seem to reach those housing blocks as ther aren't any recycling bins there."*
Technology / Affordable technology solutions	*"Plastic composting innovation"* *"Fossil fuels extraction"* *"environmentally-friendly chemical decomposes household plastic into a biodegradable product I think that would be a gamechanger"* *"independently decompose their plastic"* *"Recycling bins where many of us live"* *"Recycling food waste and/or buying a pot plants displayed outside"* *"The black community love to eat all sorts of foods. If the black community start to recycle food waste that can used as fertilizer for plants then that helps to reduce energy usage, reduce the consumption of fresh raw materials, reduce air pollution and water pollution from landfilling. This practical move will reduce the need for "conventional" waste disposal and also reduces greenhouse gas emissions".* *"Buying one or two pots of plants can also help as a critical resource because of the many ways they support life on Earth. They release oxygen into the atmosphere, absorb carbon dioxide, provide habitat and food for wildlife and humans, and regulate the water cycle."*
Community and belonging as a building block	*"Community engagement"* *"Integration"* *"Intra-community support"*
Inclusion	*Inclusion in campaigns and the movement"* *"talk to us"* *"Outreach to places where Black communities usually meet"* *"Some kind of a wake-up call, and a movement to show how some of us (in Black communities) are part of the problem that is destroying our communities and our futures."*
Spirituality, pragmatism and succour	*"There should be spiritual narratives for the Black community to be pro-environmentally by following teachings in the Torah, Bible, Quran, Pagan, Rasta, etc etc that would actually give them a purposes to protect our world"* *"Some kind of a wake-up call"* *"God given us a purpose to preserve what he has created for us and that needs to be addressed in our community otherwise we would be hypocrites"*
Modelling,	*"relatable people", "exposure", "engagement", "access", "normalisation", "taken seriously", "representative", "traditionally responsible practices"*

Discussion summary

Modelling, living or leading by example and relatable people is possibly a responsive act of self-preservation that manifests itself in marginalised communities. It is likely traditionally or customarily influenced practice (Martin and Martin, 1985; Gyekye, 1997; Adjei and Sika-Bright, 2019) .

This study indicates that environmental attitude causes PEB lifestyle choices but also unpacks that other factors will also be playing a causal role in the development of environmental consciousness. We cannot neatly determine that one is independent and the other dependent. Regression analysis are linear assumptions and part of the limitations - but nevertheless show a relationship. Values are defined as cognitive patterns that help us orient ourselves, and which become our ideals or principles (Grunert and Jhul, 1995, p. 39). Values reflect how we interact, they can be both individualistic or collectivist and therefore can have a group identity (Eom *et al.,* 2016). It is assumed values are shared culturally which is a theme across Dunlap and Van Liere (1978), Stern, Dietz and Kalof (1993), the latter who suggest values can be egocentric, anthropocentric (social-altruistic) or eco-centric in relation to environmental concerns.

According to Žižek (2008), systemic problems are not due to a lack of understanding and awareness in a community, but to a modern-colonial mindset. The way of being for modern western society causes what is named *systemic* violence, defined as "*the catastrophic effects of economic and political systems*" (Žižek, 2008) and where intentions are secondary to outcome. The fact that *our* comforts, securities and enjoyments are subsidised by expropriation and exploitation '*somewhere else'* (over both time and space) is significant for understanding drivers of PEB by those who have a connection to that '*somewhere else*'. There is a small essence of internalised oppression in the data (for example respondents who said "we could be doing more" or hints at consumerism), but it is surmounted overall by a feeling of systemic restraints. Black feminism is clear about how the intersections of oppression become a frame to explain this view (Lorde, 1987; Collins, 2009; Crenshaw, 1991) which in context of environmentalism brings a unique experiential framing (Ford and Norgaard, 2020) that is desiring of targeted solutions, not least in how barriers will be overcome.

The Black community's perspective on climate change and ecology decline and how its actions can reduce, mitigate or adapt to a less problematic future is found to be significant in this research. It is clear an understanding of impacts is extant in the community which perceives environmentalism for how its relevance impacts on that community and on wider society.

Exclusion and the scourge of structural racism is recognised as a driver of climate injustice (Heynen, 2016) with specifics like institutional racism in policy preventing further Black liberation (Agyeman and McEntee, 2014) and as this study has uncovered, is one of the barriers to PEB.

Conclusions

Summary of the case made

Results from the first part of this work show the Black community in the UK is on a par with the rest of society in environmental values and attitudes, and possibly advanced in a few areas which could be down to sampling or environmental justice driving community concern. The second part of the study, the qualitative exercise produced evidence of a series of barriers to PEB including structural and systemic racism and deconstructs how the Black community expresses its feelings about marginalisation and exclusion in context of environmentalism.

That values, attitudes and beliefs are driven in similar ways but extended by heritage and socio-cultural framings is uncovered by this research and belies the concept that these are important to understand when investigating change. As a contribution to knowledge, this research brings insight into behaviours and deciphers what barriers may exist and moreover, why it is necessary to look at how culture and heritage are interrelated aspects of values and orientations. These factors along with identity must be centralised in researching the Black community or indeed, any other grouping.

The resilience or rather transformative adaptation to constant oppression, presented a series of unlooked for solutions in the data. An interesting aspect of the second part of the research was that respondents suggested solutions to PEB to partake in, as opposed to barriers. These were manifest in actions at both an individual and community level. Needs modelling was an interesting perspective, in that it was felt Black people have strength within themselves and within their community that just needs to be showcased - needs modelling was an upscaling of role modelling.

It is certain that exclusion holds back policy development.

Environmental identity is a self-assessment feature that has been suggested drives PEB as it represents the identity an individual wants others to perceive in them. How much is this impacted by Black identity is an exciting topic for future study.

Limitations

Whilst undertaking this work a paucity of research was seen on PEB in the Black community and where it was present it tended to contain either a victim framing or had a locus of study in the USA. Environmentalism work per se had similar boundaries. Therefore it is clear that the literature in this field must look to how it can gain depth and breadth by considering Black heritage communities attitudes, values and beliefs across different countries and regions. Future research suggests a focus on what else could influence PEB such as Lifestyle Theory.

A lack of data in both parts of the research on gender risk, which is a big concern in planning for adaptation, and on barriers was very noticeable. It is unknown why this emerged, but it is a clear area for further research.

Where a reticence to talk about climate change was uncovered in the data, valuable knowledge could be achieved by studying this aspect of psyche. Black identity impacts

upon values and pro-environmentally responsible behaviours as does income and education. It would be interesting to consider how the pyscho-social value of a reticence or willingness to pay financially or in-kind for environmental improvements effects pro-environmentally responsible behaviour. These are important socio-economic and socio-cultural questions, but the study did not have the scope to contain detail related to economic decisions and behavioural change.

Caron (1989) suggests age to be consistent in PEB research, but this control feature was not included in either of the surveys. However, in retrospect it would have been good to test how age impacted in the results. It is disappointing that gender based solutions were not proposed.

This study brought in too many differing variables in an attempt to gain a wider picture. A focus on fewer variables related to the specific research would have meant more scope to unpick detail. The work was not broken down into political or ideological segments which though interesting and reflective of actual society, was too big a scope.

To recap, viewing the world from a Black perspective includes breaking free from a traditional western ontology and it means understanding where power and privilege sit. If we hope for transformational adaptation we need to envision a future that is pluriversal and reflects many worldviews and which has to be both inclusive and free from structural racism.

A bleak picture is painted for the world's climate and ecology if transformative change does not occur, with the need encapsulated in the Global Environment Outlook-6 (UN Environment, 2019), IPCC's 5th Assessment Report (IPCC, 2014) and the Global Assessment on Biodiversity and Ecosystem Services (IPBES, 2019). These all agree that change must include societal behaviours at the individual level and across all communities. Understanding those communities and how they respond to behaviours could prove key.

Wider societal debate on barriers for the public covers democracy and representation (Willis, 2020) which relate to all of the implications found in this research not least for agency or rather the lack of it. If we are to see a change in behaviour we must not only understand the drivers better but also seek to be inclusive and therefore specific in how we surmount barriers. Maybe it is not solely about finding solutions to barriers to how the Black community increases involvement, but a reframing of the ontology of the whole structure of society. To solve any challenges, it must be about working in collaboration as equal partners (Anderson *et al.,* 2009), with fair and equitable sharing of the means to develop further knowledge together.

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Appendices

Appendix 1.

Capitalising ‘Black’

This study does not have scope to fully address the matter of terminology and how best to describe the community of focus, a matter which has been contested for a number of years and is still being debated. It has been cited as a way of asserting the self-identity of this grouping of African descent people, but this researcher recognises that it may be offensive to some and an incorrect identifier for others.

When used in political and probably a social context it has become widespread to capitalise ‘Black’, for example as had been agreed by the Associated Press in 2020, maybe due to the prominence of the Black Lives Matter Movement in the media. Black has become a signifier of identity for a grouping of African descent people, the very identity of whom are often moulded by colonialism and oppression.

Race is not strictly biological so ‘Black’ has taken on a mantle of identity. It is a debate which cannot be fully addressed here, therefore, ‘Black’ in this research means of African origin/heritage as described in the introduction.

Until the debate is resolved by the community itself and indeed the nuance reflected by wider society, this researcher apologies for these shortcomings in the nomenclature.

How race is conceptualised is also beyond this work.

Black Communities in the UK: Barriers to Pro-Environmentally Responsible Behaviour*

Thanks for your continued support for this research.

*Pro-environmentally responsible behaviour includes such things as eating less red meat, influencing political decisions on the environment, cutting down on use of fossil fuel vehicles, flying less, doing more active travel (cycling/walking etc), retrofitting homes to use less energy and reduce emissions, taking part in campaigns against local pollution and many other actions.

* Required

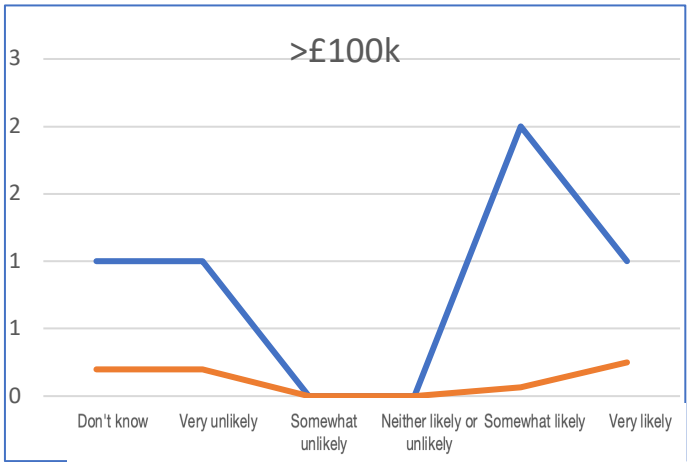
* This form will record your name, please fill your name.

1. What do you feel would help reduce barriers to the Black community in the UK taking on more pro-environmentally responsible behaviours? *

2. How do you feel racism, structural or institutional, plays a part in whether the Black community are able to take on pro-environmentally responsible behaviour? *

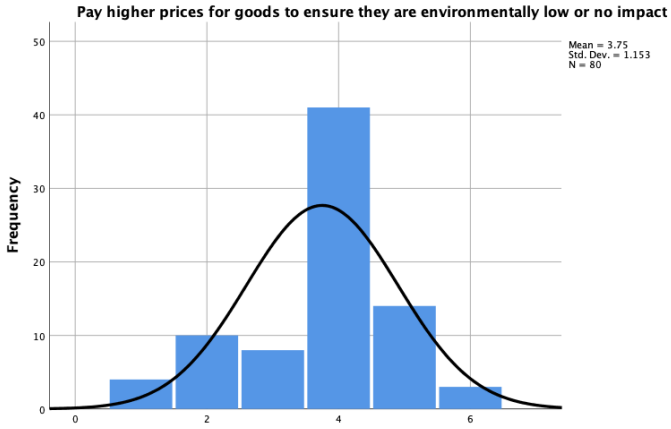
Appendix 3.
Income brackets and limiting energy use

Q.8, likely or unlikely that Black people will limit energy use to help the climate

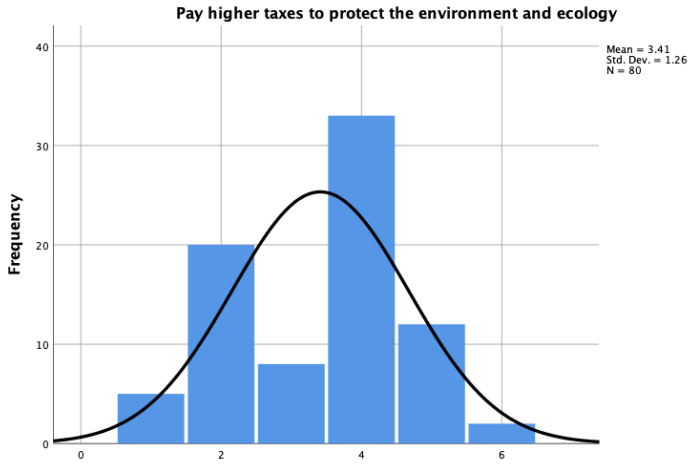


Q.8, likely or unlikely that Black people will limit energy use to help the climate

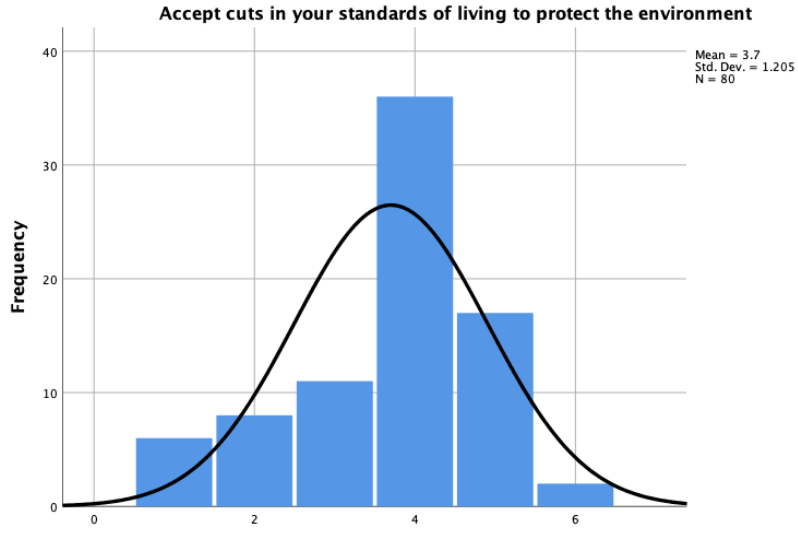
Appendix 4. Q19



Q19 willingness to pay higher prices for environmentally sound goods, median average showing against normal curve

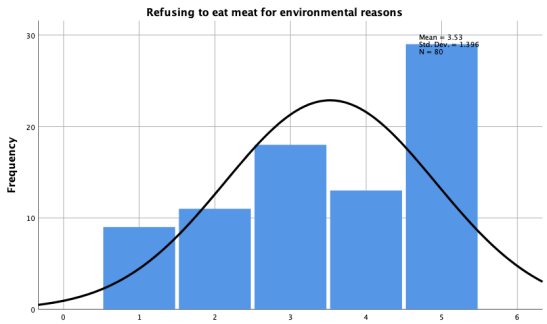


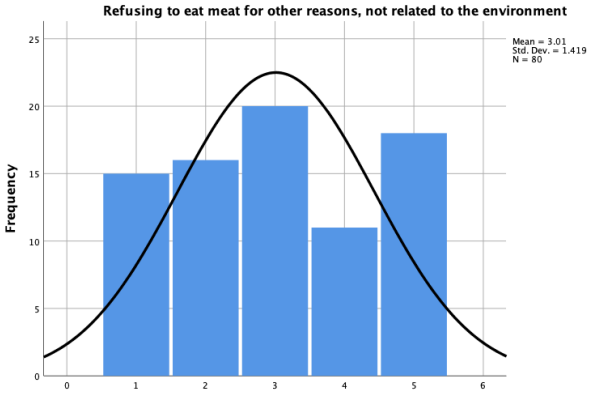
Q19 willingness to pay higher taxes to protect the environment showing against normal curve

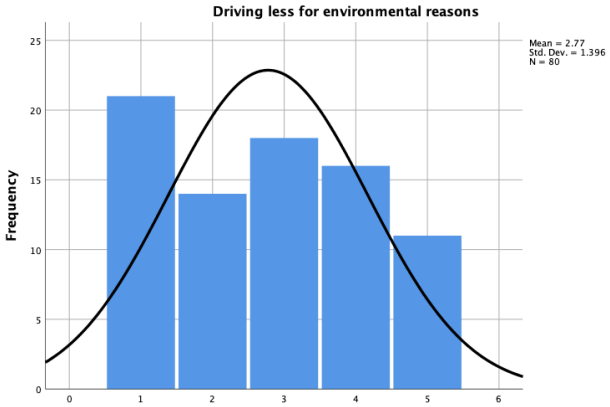


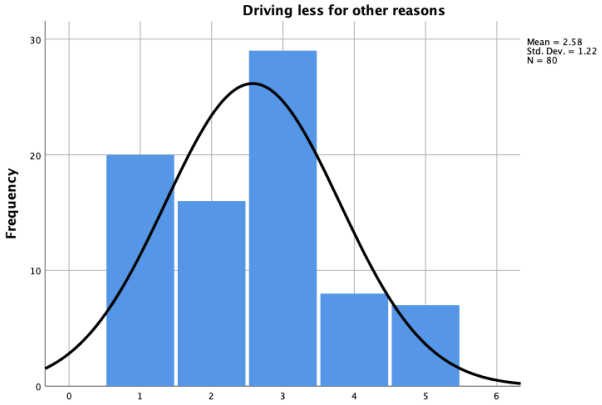
Q19 willingness to accept reduced living standards to protect the environment, median average showing against normal curve

Appendix 5. Q22 histograms









Appendix 6 themes grouped, and in rank order

Grouped theme cascades	Number of coding references	Aggregate number of coding references
Disenfranchised, disempowered	8	19
Disenfranchised, disempowered\Disadvantage	2	2
Disenfranchised, disempowered\Injustice	1	4
Disenfranchised, disempowered\Injustice\Indigenous knowledge of PEB	3	3
Disenfranchised, disempowered\Weary struggle	5	5
Environmental and Climate Justice	5	15
Environmental and Climate Justice\Air pollution	1	1
Environmental and Climate Justice\Environmental movement so white	9	9
Exclu(sion)(ded), perceived & experienced	10	81
Exclu(sion)(ded), perceived & experienced\Class as a barrier	9	9
Exclu(sion)(ded), perceived & experienced\Communications failure	3	7
Exclu(sion)(ded), perceived & experienced\Comms failure\Black communities own comms	4	4
Exclu(sion)(ded), perceived & experienced\Education about climate change	6	18
Exclu(sion)(ded), perceived & experienced\Education about climate change\Education on PEB	12	12
Exclu(sion)(ded), perceived & experienced\Exclusion from communication	4	4
Exclu(sion)(ded), perceived & experienced\Exclusion from green spaces	1	1
Exclu(sion)(ded), perceived & experienced\Financial exclusion	13	13
Exclu(sion)(ded), perceived & experienced\Gender	1	1
Exclu(sion)(ded), perceived & experienced\Housing poverty	3	3
Exclu(sion)(ded), perceived & experienced\Political exclusion	5	15
Exclu(sion)(ded), perceived & experienced\Political exclusion\capitalism	2	2
Exclu(sion)(ded), perceived & experienced\Political exclusion\Identity politics	1	1
Exclu(sion)(ded), perceived & experienced\Political exclusion\Mistrust in politics	1	1
Exclu(sion)(ded), perceived & experienced\Political exclusion\Representative politics	5	5
Exclu(sion)(ded), perceived & experienced\Political exclusion\Unrepresentative	1	1
Inequality	2	2
Needs modelling	4	16
Needs modelling\modelling by and within Black community	12	12
Participatory	5	7
Participatory\Ownership	1	1

Participatory\Societal cohesion	1	1
PEB	4	4
Poverty	4	4
Racism	0	34
Racism\Colonialism	4	8
Racism\Colonialism\Colonialism and historical hurt	4	4
Racism\Institutional racism	3	3
Racism\Oppression	1	1
Racism\Reparations	1	1
Racism\Structural racism	15	15
Racism\Subjective racism	1	1
Racism\White privilege	4	4
Racism\White supremacy	1	1
Solution type themes	0	30
Solution type themes\Altruistic outlook as a driver	1	4
Solution type themes\Altruistic outlook as a driver\Collective good	1	1
Solution type themes\Altruistic outlook as a driver\Internal awareness (beliefs, values)	2	2
Solution type themes\Community and belonging as a building block	4	7
Solution type themes\Community and belonging as a building block\Community engagement	1	1
Solution type themes\Community and belonging as a building block\Integration	1	1
Solution type themes\Community and belonging as a building block\Intra-community support	1	1
Solution type themes\Inclusion	2	9
Solution type themes\Inclusion\inclusion in campaigns	7	7
Solution type themes\Responsibility	2	2
Solution type themes\Technology solutions	4	8
Solution type themes\Technology solutions\Affordable technology solutions	2	2
Solution type themes\Technology solutions\Fossil fuels extraction	1	1
Solution type themes\Technology solutions\Plastic composting innovation	1	1
Spirituality, pragmatism and succour	6	6

Themes ordered by aggregate number of references (greatest first)	Number of coding references	Aggregate number of coding references
Exclu(sion)(ded), perceived & experienced	10	**81**
Racism	0	**34**
Solution type themes	0	**30**
Disenfranchised, disempowered	8	**19**
Exclu(sion)(ded), perceived & experienced\Education about climate change	6	**18**
Needs modelling	4	**16**
Racism\Structural racism	15	**15**
Environmental and Climate Justice	5	**15**
Exclu(sion)(ded), perceived & experienced\Political exclusion	5	**15**
Exclu(sion)(ded), perceived & experienced\Financial exclusion	13	**13**
Exclu(sion)(ded), perceived & experienced\ Education about climate change\Education on PEB	12	**12**
Needs modelling\modelling by and within Black community	12	**12**
Environmental and Climate Justice\Environmental movement so white	9	**9**
Exclu(sion)(ded), perceived & experienced\Class as a barrier	9	**9**
Solution type themes\Inclusion	2	**9**
Racism\Colonialism	4	**8**
Solution type themes\Technology solutions	4	**8**
Solution type themes\Inclusion\inclusion in campaigns	7	**7**
Participatory	5	**7**
Solution type themes\Community and belonging as a building block	4	**7**
Exclu(sion)(ded), perceived & experienced\Communications failure	3	**7**
Spirituality, pragmatism and succour	6	**6**
Disenfranchised, disempowered\Weary struggle	5	**5**
Exclu(sion)(ded), perceived & experienced\Political exclusion\Representative politics	5	**5**
Exclu(sion)(ded), perceived & experienced\Comms failure\Black communities own comms	4	**4**
Exclu(sion)(ded), perceived & experienced\Exclusion from communication	4	**4**
PEB	4	**4**
Poverty	4	**4**
Racism\Colonialism\Colonialism and historical hurt	4	**4**
Racism\White privilege	4	**4**
Disenfranchised, disempowered\Injustice	1	**4**

Solution type themes\Altruistic outlook as a driver	1	**4**
Disenfranchised, disempowered\Injustice\Indigenous knowledge of PEB	3	**3**
Exclu(sion)(ded), perceived & experienced\Housing poverty	3	**3**
Racism\Institutional racism	3	**3**
Disenfranchised, disempowered\Disadvantage	2	**2**
Exclu(sion)(ded), perceived & experienced\Political exclusion\capitalism	2	**2**
Inequality	2	**2**
Solution type themes\Altruistic outlook as a driver\Internal awareness (beliefs, values)	2	**2**
Solution type themes\Responsibility	2	**2**
Solution type themes\Technology solutions\Affordable technology solutions	2	**2**
Environmental and Climate Justice\Air pollution	1	**1**
Exclu(sion)(ded), perceived & experienced\Exclusion from green spaces	1	**1**
Exclu(sion)(ded), perceived & experienced\Gender	1	**1**
Exclu(sion)(ded), perceived & experienced\Political exclusion\Identity politics	1	**1**
Exclu(sion)(ded), perceived & experienced\Political exclusion\Mistrust in politics	1	**1**
Exclu(sion)(ded), perceived & experienced\Political exclusion\Unrepresentative	1	**1**
Participatory\Ownership	1	**1**
Participatory\Societal cohesion	1	**1**
Racism\Oppression	1	**1**
Racism\Reparations	1	**1**
Racism\Subjective racism	1	**1**
Racism\White supremacy	1	**1**
Solution type themes\Altruistic outlook as a driver\Collective good	1	**1**
Solution type themes\Community and belonging as a building block\Community engagement	1	**1**
Solution type themes\Community and belonging as a building block\Integration	1	**1**
Solution type themes\Community and belonging as a building block\Intra-community support	1	**1**
Solution type themes\Technology solutions\Fossil fuels extraction	1	**1**
Solution type themes\Technology solutions\Plastic composting innovation	1	**1**

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צדק

תרדוף

אין שלום ,בלי צדק