challenges

MDPI

Article

How Gender Influences the Motivation and Action Towards Climate Change: A Qualitative Study of Participants from a UK Construction Company

Fenella Ross, Campbell Middleton and Olivia Remes *

Laing O'Rourke Centre for Construction Engineering and Technology, University of Cambridge, Cambridge CB3 0FA, UK; fr426@cam.ac.uk (F.R.); prof@construction.cam.ac.uk (C.M.)
* Correspondence: ror21@cam.ac.uk

Abstract: Climate change will lead to widespread adverse global impacts on nature, people and economies. The importance of gender in tackling climate change is becoming increasingly evident, with the Paris Agreement highlighting this. According to the evidence base, women typically show higher levels of concern and action towards climate change within the general public, within politics and on company boards. However, few studies have investigated the influence of gender on climate concerns and action within the workforce. The construction industry is one of the biggest emitters of greenhouse gases; therefore, this is a key sector to focus on with respect to decarbonisation. Simultaneously, construction is dominated by men and has significant gender inequity issues. Given the importance of including women in climate change decisions, it is important to assess construction employees' knowledge and awareness regarding this key issue. Quota and snowball sampling techniques were used to recruit UK-based participants (n = 30) from a large engineering/construction company to explore the perceived concern, importance and action towards climate change, and qualitative analysis using NVivo 14 software was employed to identify key themes. This qualitative work provides initial important insights for an industry with one of the largest carbon footprints in the world and that also reports significant gender inequities.

Keywords: climate change; gender; construction; knowledge; concern; action

Academic Editor: Susan Prescott

Received: 7 November 2024
Revised: 18 December 2024
Accepted: 19 December 2024
Published: 31 December 2024

Citation: Ross, F.; Middleton, C.; Remes, O. How Gender Influences the Motivation and Action Towards Climate Change: A Qualitative Study of Participants from a UK Construction Company. *Challenges* **2025**, *16*, 3. https://doi.org/10.3390/challe16010003

1. Introduction

Climate change is a critical global issue, with worldwide adverse impacts on nature and people [1]. If no action is taken to reduce climate change, it is estimated that economic losses will continue to rise, costing 18.1% of the world's GDP in 2050 [2].

The public believes climate change to be a global emergency [3]. The UK has responded the most critically, with 81% of the British public believing that climate change is a global emergency and 77% indicating that we should do everything necessary to tackle this problem [3].

1.1. The Importance of Women in Climate Change Plans and Actions

Women have been shown to play an important role when it comes to climate change plans and actions, and the United Nations advocates for gender equality. In fact, the Paris Agreement, an international climate change treaty highlighted by the United Nations [4], stipulates that "Parties should, when taking action to address climate change, respect, promote and consider. . .gender equality, [and] empowerment of women" [5].

Having more women involved in climate change plans has been shown to be beneficial in a number of ways. For example, political representation of women tends to have a positive impact on the adoption of stricter climate change policies [6] and climate footprints [7]. Also, the presence of woman board members has been linked to increased climate change disclosure [8–10] and improved environmental performance [11,12]. One of the reasons for this could be that woman board members select more environmentally positive companies [13].

Taking all this together, the evidence shows that a holistic consideration of gender—in particular, including women in climate change plans—is beneficial for organisations [14]. There are other reasons, however, as to why women have a positive impact when it comes to this global emergency.

1.2. Women Tend to Be More Concerned About Climate Change

The genders also seem to have differential perceptions related to this phenomenon. In the UK, women are 6% more likely to consider climate change a real issue than men [3]. If people perceive something to be a real issue worth tackling, then this often translates into action. Also, women are more likely to adjust household behaviour to address climate change through behaviours such as decreased or alternative energy use and greater uptake of 'green' methods of transportation [15,16].

To this end, the evidence shows why including women in climate change decisions and intervention development is vital. However, significant challenges remain. Barriers include continued gender inequality [17] and the underrepresentation of women in industries with high carbon footprints [18,19], such as construction. This could slow down the progress of tackling the climate agenda. In fact, the evidence indicates that although gender equity (and having more women involved) increases climate impact, only 50% of employees think that their organisations consider this aspect in climate change decisions [20].

1.3. The Construction Industry Is a Major Contributor to Climate Change

Construction is the largest global industry, contributing 13% of world GDP [21] and 6.3% of UK GDP [22]. Buildings contributed to approximately 21% of global emissions in 2019 [23]. According to the UN Environment Programme, the construction industry is not making sufficient changes to reduce climate impact [23]. Concurrently, the sector lacks gender equality and equity, with women making up only around 14% of the UK construction workforce [24,25]. This may influence how women within the industry act; one of the coping mechanisms for women in male-dominated environments is to adopt typically male characteristics [26].

1.4. Brief Comparison with Other Industries

When it comes to other industries, women in the energy sector show motivation with respect to their sector's role in climate change; this is based on research by POWERful Women, an initiative to increase the representation of women in the latter industry [27]. In contrast, previous research into environments dominated by men (transportation [28] and energy [29]) shows that women do not significantly contribute to climate decision-making, with one hypothesis being that masculine norms prevail in male-dominant environments.

1.5. Gender-Related Norms

The construction industry is an excellent example of masculine norms prevailing in male-dominant environments. This sector is well-recognised for its macho culture [30] and gender inequity issues. The "male-dominated nature" of the sector has been the subject of extant research [31]. In 2020, interviews with industry stakeholders from medium and large firms across the UK highlighted the culture within the construction workplace: it is

characterised by toughness, bravura, and stoicism [31]. Other researchers have described the 'ideal worker' within the construction setting as someone who does not pay particular attention to pain, carries on working despite potential difficulties, and shows stamina [32]. Masculinity, self-reliance, and machismo are defining factors of the industry, and not much appears to have changed over the years. Add to this the fact that 86% of the UK construction workforce is composed of men [24,25]; this can contribute to the propagation of masculine norms (gender-related issues have also been reported in construction). Other male-dominated environments show similar patterns. An example is the military. In fact, researchers at the U.S. Force Academy explored in an academic article "how cadets perpetuate the military masculine-warrior narrative in sense-making and the construction of gender differences" [33].

The same thing can happen when it comes to climate change decision-making and action in contexts dominated by one gender group. While each gender brings valuable characteristics to the table, workplace environments with a low proportion of women can make it hard to have women's voices and opinions heard. In addition, qualities such as compassion and empathy—which research tends to associate with women—may not be as evident in male-dominated contexts. This is important, as empathy is often a key ingredient when it comes to driving social change and taking environmental action. In fact, a piece published by the Oxford University Press [34] has alluded to the fact that positive environmental action is not only driven by public education—this is not enough. We also need to think about ways of incorporating empathy within awareness strategies. Additionally, Oliver Wyman presented customer research that showed that women are more likely to consider that action against climate change is motivated by being "a decent human being" [35]. Given that women are more likely to display altruism and empathetic decision-making, it is crucial to incorporate this gender group in key societal decisions, actions and plans [36]. This is even more essential in traditionally macho workplace cultures, such as construction.

1.6. The Gaps in Evidence

It is clear that women need to be involved in climate-related work, and in particular, in construction. However, to inform further action in this domain, it is important to first determine people's level of knowledge, awareness and attitudes related to climate change—but using a gender lens. This is important as awareness and attitudes are key determinants of action. At present, there are no known studies on this in the construction sector.

Objective: To address the gaps in the literature, the objective of this study is to assess attitudes, knowledge and awareness related to climate change within the construction context among women and men.

2. Materials and Methods

The research undertaken used snowball and quota sampling techniques to recruit participants from a large multinational engineering/construction and project management organisation. The company of 36,000 employees comprises multiple divisions and practices, with the infrastructure design practice selected due to the variety of infrastructure projects. The practice consists of 630 UK-based employees, with 22% being female. Therefore, quota and snowball sampling techniques were adopted to ensure a relatively equal gender and experience representation.

Also, as mentioned earlier, in order to effectively understand the human experience [37]—which includes deep-seated values and beliefs [38]—qualitative analysis is needed. The optimal sample size for a qualitative study is 9–17 participant interviews (with only some studies recruiting more than 17 participants) [39]; this allows the researcher to

reach data saturation and explore themes in depth. To be sure of data saturation and ensure the highest level of rigour, we recruited a larger sample size than would have typically been needed for qualitative work. As such, we conducted 30 in-depth interviews with participants in a variety of roles, with different levels of experience and equal representation of genders. We reached data and theme saturation after 24 interviews—this confirmed that our sample size (n = 30) was sufficiently large.

Data Collection and Qualitative Content Analysis

Thirty individual, in-depth, semi-structured interviews were conducted in February and March 2024. The interview guide was developed by a senior engineer at the company with feedback from a mental health researcher at the University of Cambridge; it focused on participants' perceptions, knowledge, and awareness of climate change and zeroing in on five main areas: (1) concern (towards climate change), (2) importance in working for a company that positively contributes to net zero, (3) personal understanding of climate change, (4) company action towards this issue, and (5) personal action (i.e., are women or men more likely to take personal action?). These areas were selected in accordance with the extant evidence base (Table 1). Interviews with participants were audio-recorded and transcribed; data analysis was organised according to these five main areas, and the responses to interview questions were coded to main themes using NVivo 14 [40]. An inductive approach guided the data analysis, and stratification by gender allowed the research team to explore insights for each of the five main areas. Steps that took place in our research included data familiarisation, coding, theme development, charting, mapping, and interpretation, as well as retaining links to the data at each phase.

Table 1. Interview Questions.

Five Climate Change Areas Assessed	Question	Literature Basis
Concern	Are you worried about climate change?	[16,41–43]
Importance	Is it important to work for a company that positively contributes to net zero?	[44]
Understanding	What is your understanding of climate change?	[16,42,43]
Company Action	Is your company doing enough to tackle climate change?	-
Personal Action	Are women or men more willing to act when it comes to climate change?	[15,16]

The questions asked by the survey are presented in Table 1. Demographic data was also collected, and this included gender, job role, the length of time spent in the construction industry, and country of nationality.

Qualitative content analysis was used to explore the transcribed interviews.

3. Results

The characteristics of the participants who took part in this qualitative study are presented in Table 2. In total, 15 women and 15 men were involved, ranging in experience and having worked in the sector for 0.5 to 25 years. Thirty interviews were held: this number was considered appropriate in accordance with similar qualitative studies [45] and enabled the capture of equal numbers of men and women to allow comparison between genders. Saturation occurred after 24 interviews. Participants self-reported as being of different nationalities, with most respondents self-identifying as British.

Table 2. Participant Characteristics (n = 30).

	Men (M)	Women (W)
Participant Number	15	15
Experience Range (years)	1.5–25	0.5–25
Mean Experience (years)	11.0	9.6
British	10	9
Other European	1	2
Asian	3	2
African	1	2

The qualitative analysis revealed key themes within each of the five climate change areas.

3.1. Concern

Key findings highlighted that 83% of participants (12 men, 13 women) reported being 'very worried' about climate change.

Themes that arose included concern about the impact of climate change, the future impact of this global emergency on humanity and current action not being sufficient to address the issue. One engineer (a woman) noted that climate change is the issue of the future and alluded to the fact that being made aware of the consequences of this global emergency instils a sense of responsibility to act:

> *"It's the future isn't it? As an engineer, I sort of have things in my control that I can influence. So I think that's probably why I'm more worried about it [more] than if I wasn't in the industry. I think you hear about the bad side of it more, and then you've got more of a responsibility to do something about it."* Civil Engineer (woman)

A minority of participants reported being only 'slightly worried' about climate change (3 men, 2 women); they saw this issue as having more to do with the future rather than an immediate concern, and they did not perceive climate change to have a personal impact.

3.2. Importance

Most participants (87%) placed high importance on tackling climate change: 14 women and 12 men thought it was very important to work for a company that positively contributes to net zero (Figure 1). The remaining participants placed some (minor) importance on the issue; no participants responded that the issue was not important. Themes that arose included the value derived from positively contributing to climate change, the influence of the construction sector in the climate change agenda and the importance of tackling climate change on an organisational scale rather than an individual scale. For example, in response to this question, one participant touched on deriving meaning as a result of working for a company that values such aspects:

> *"It's really important [to work for a company that positively contributes to net zero] and I actually feel that it gives fulfilment and meaning to my job."* Senior Civil Engineer (man)

While another brought in the fact that construction is a big contributor to climate change, so employees of the sector have a responsibility to act:

> *"Yes, 100%, especially as [construction makes] a big impact in net zero. So. . .if we're not doing our bit, then who's going to?"* Graduate Civil Engineer (woman)

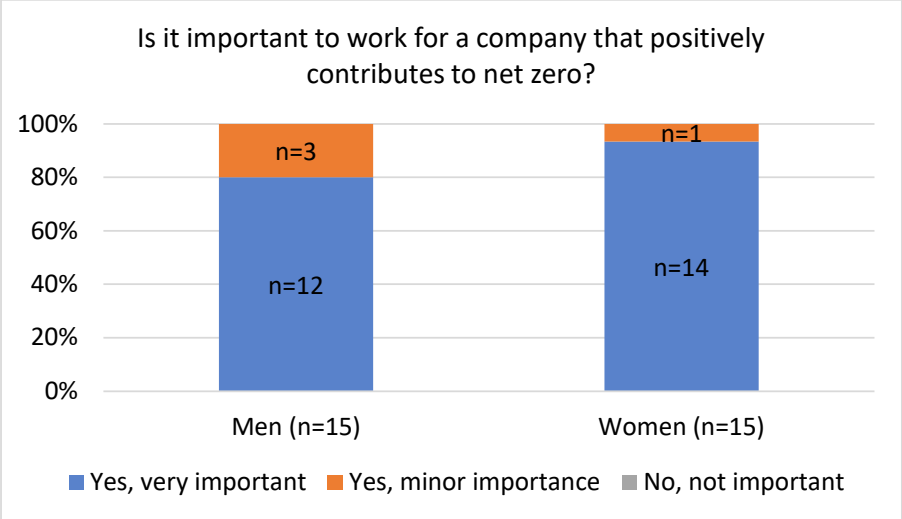

Figure 1. Participant responses to survey questions on importance of tackling climate change.

The remaining participants (3 men, 1 woman) thought it was of minor importance to work for a company taking steps towards this societal issue (Figure 1); the following theme was apparent: climate-related work was perceived as a bonus rather than something essential. One participant simply did not want to work for a company that negatively contributed to the issue (instead of seeking to work for an organization that actively took steps to combat it).

3.3. Understanding

Compelling evidence shows that about half of the men (7 men) rated their knowledge of climate change as 'excellent' or 'good', while only three women did so (Figure 2). Moreover, there were more women who believed their knowledge on the topic was lacking compared to men; in fact, four women in this sample rated their understanding of climate change as 'unsatisfactory' or 'poor' in comparison with only one man who did so. One woman associate engineer reflected on why she considered her knowledge to be unsatisfactory, stating:

> *"My general knowledge is reasonable, but I can't quote numbers."* Associate Engineer (woman)

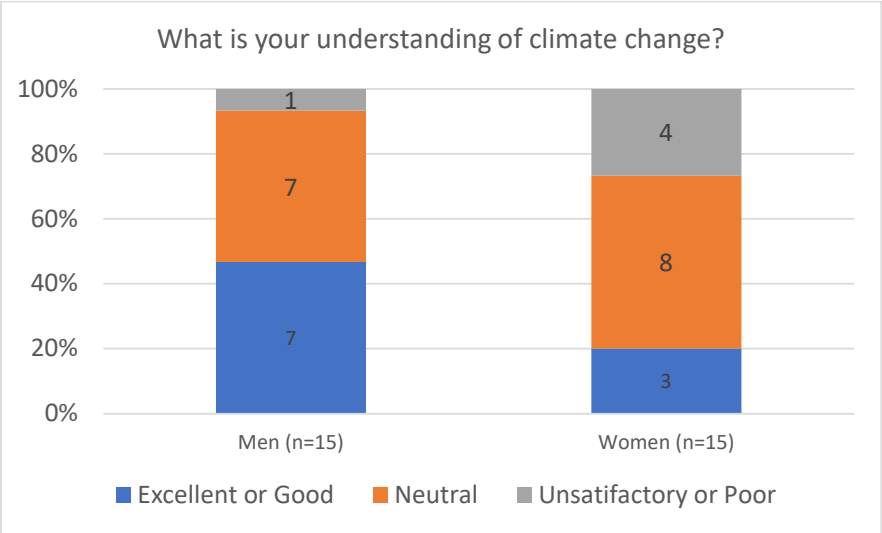

Figure 2. Participant responses to survey questions on climate change understanding.

Another quote by a civil engineer (a woman) summed up the sentiment in the sample of women: "*Probably not as good as it should be*", when asked about her level of knowledge on climate change.

There were roughly equal numbers of men and women who rated their knowledge of climate change as 'neutral'. A theme that arose was that participants are not 'experts' on climate change and, therefore, should not be required to know more on the topic.

3.4. Company Action

There was considerable variation in participants' opinions of the company's action towards climate change.

All thirty participants believed the company was doing something to contribute to climate change. The majority of participants considered that the company was either outperforming (7 men, 5 women) or on par (6 men, 8 women) with the industry average.

A central theme was that climate change reduction strategies needed to be integrated into projects. Barriers to implementing such strategies were inaction from government and clients, and high cost of strategy implementation; these were sub-themes that emerged.

Additional themes included the prominence of the company's messaging around strategies to combat climate change, climate targets on projects (such as reduction in carbon emissions) and the sectors that the company is operating within (with particular mention of reduced work in the oil and gas sector). With respect to the company's messaging on organisational action for climate change, one participant observed:

> *"I think our messaging is getting better. . .we're moving in the right direction. However, I don't think we're doing enough, and I especially think [this to be the case] on an operational level."* Senior Civil Engineer (man)

'Doing more' is something that emerged in this study—whether in the context of individual steps or wider organisational action:

> *"Everyone always needs to do more. We're clearly not doing enough globally, nationally. I'd say the same of the company."* Civil Engineer (woman)

3.5. Personal Action

Half of the participants (8 men, 7 women) believed there was no difference in action towards climate change by gender. However, a number of participants (7 men, 6 women) believed that women were more likely to act on the issue than men, whilst no participants thought men were more likely to act (Figure 3).

> *"I genuinely think that women will take more action on it because they will see the human side of the impact quicker than the males."* Director (man)

Where participants discussed that women were more likely to act, a key theme that arose included empathy as being a key ingredient in driving action to address climate change, which is a humanitarian issue. Men and women were also seen as having skills that complemented each other, which could positively contribute to the tackling of climate change.

> *"Women, on the whole, approach problems like this [climate change] with more . . .potentially more empathy; [they] see climate issue as [having] an impact on humanity. Men might approach this as a practical problem. We, as an industry, need to make sure that both women and men are involved in the problem-solving because. . .if you leave it up to just men, we will have. . .[a] non-human response to this very human crisis. But if you leave it up to just women, we might not have the practical solutions."* Senior Engineer (woman)

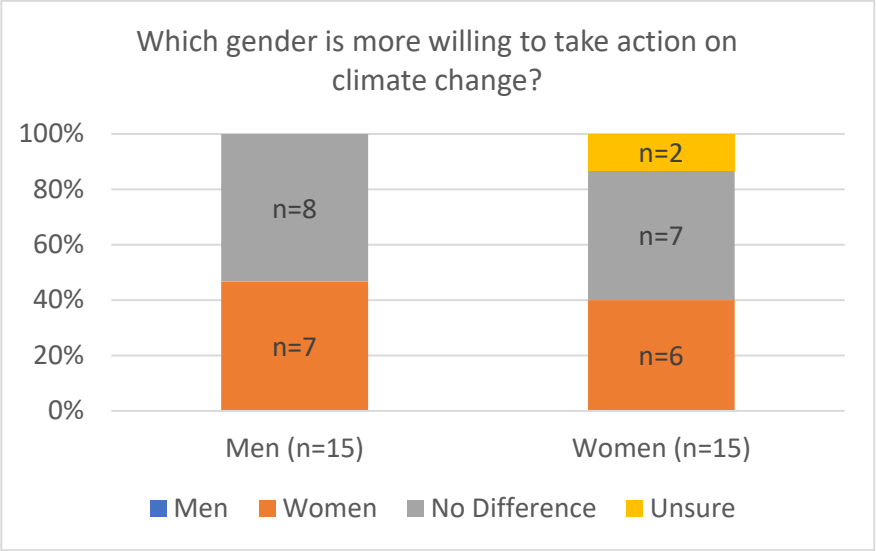

Figure 3. Participant responses to personal action by gender.

Additionally, participants noted that women might be more likely to approach the problem holistically or there tended to be more women in environmentally positive roles.

"Environmentalists tend to be women, more so than men", one participant (a man) noted, who was in a management role.

Another participant highlighted the skillset of women as important in tackling the climate change agenda:

> *"When you're talking about policy creation and thinking outside the box in different ways that we can do things . . .that is normally within the standard female skillset."* Engineer (man)

Nevertheless, as a previous participant quote suggested, it is worth reiterating that men and women can both bring important skill sets to the table to address this global emergency.

4. Discussion

For the first time, we show that women and men working in an engineering/construction context tend to have differential attitudes and self-perceptions of literacy around climate change, as well as potentially different awareness levels regarding their company's actions towards climate change and related issues.

One of the key findings of this study was that women tended to respond with a higher level of concern and importance towards climate than men. This is consistent with studies of the UK public, which showed that women were more likely to be concerned about environmental issues [46] and think climate change is a severe problem [41] compared to men. While such gender-based research has previously been conducted, no such studies have been undertaken in the engineering/construction context; this is a gap addressed by the current work. Our finding is also noteworthy, as women make up only a small fraction of construction employees (or, for that matter, STEM employees in general)—and this study adds to the evidence base on the topic.

Similar to the gender-based findings of this research, National Grid—a UK electricity and gas company [44]—showed that women were more likely than men to agree that it is crucial to play a role in the UK's journey to net zero. However, in contrast to our work, National Grid [44] found no gender differences in terms of working for a company that contributes to achieving net zero. Women in our research, however, believed it was very important to work for a company that positively contributes to net zero. One

of the reasons for the discrepancy in findings between our work and National Grid's, could be that people are more likely to respond positively to this question when they work for companies/industries that have a significant impact on climate change (such as the participants of our study who work for the construction industry, a large emitter of greenhouse gases).

Although half of the participants in this study believed that there were no gender differences in actions towards climate change, it is noteworthy that 43% of respondents thought that women were more likely to act than men. Studies of the public support this and show that women are, in fact, more likely to take personal actions towards climate change mitigation, such as changing travel patterns [15,16].

The gender differences observed could be a result of fundamental differences between the behaviours and reactions of women and men. Women may be more concerned in general about the environment and the role they play in it; they may also show greater willingness to help (whether that pertains to helping the planet and positively contributing to climate goals or helping others). For example, women are more likely to donate to charitable causes than men; also, empathy and compassion tend to be more pronounced in women [47]. In fact, the recently-launched report by OfCom, the UK government-approved authority of communications services, showed that women were more likely to worry about online harm compared to men [48]. In June 2024, women showed greater concern about various online harms, such as suicide content and human trafficking, compared to men [48].

Women's heightened levels of concern not only pertain to their social environment, but also their own welfare. Harvard Health Publishing of Harvard Medical School has highlighted that women are more likely to eat healthier and seek medical care compared to men [49]. A study published by researchers at the Department of Internal Medicine at Lausanne University Hospital showed that women tended to have healthier diets than men [50]. In addition, researchers from the Department of Internal Medicine and Clinical Nutrition at the University of Gothenburg showed that women were more likely to avoid eating food additives because of perceived unhealthiness [51].

Taken together, the extant evidence base shows that women and men may exhibit different levels of concern about many factors, including their own welfare and that of the people around them. This can explain why the genders also appear to have different attitudes and motivations to act on goals related to climate change.

4.1. Other Key Themes from Our Research

In our research, the main themes that arose for women being more likely to act were 'perceived characteristics' (women thinking more laterally and showing more empathy compared to men) and 'observed behaviours' (women being more prominent in environmental positions). These themes highlight the importance of gender equity in tackling climate change to ensure that fair solutions are developed. Some of the observed differences are shown in the other question responses. For example, when asked about company actions towards climate change, women were more likely to discuss external barriers (including cost, as well as government and client inaction), while men were more likely to discuss internal factors (including company messaging and project sectors).

In terms of general findings that emerged from our research, this study observed much higher engagement towards climate change than the general public. In fact, 83% of participants in this study reported being 'very worried' about climate change compared to 51% of the UK public, who think climate change is a serious problem [41]. Also, 87% of participants said that they thought it was very important to work for a company that positively contributes to net zero compared to only 57% of the UK public [44]. This may

indicate a higher awareness and responsibility of those in the construction industry towards climate change, particularly as this issue has increasingly become a key target for the construction agenda [52]. There is also increasing media attention on climate change [53], which can drive awareness.

Another key finding of our work was that most respondents (83%) reported their knowledge of climate change as being 'neutral' or 'good'. To provide a point of comparison, 73% of the UK public reported that they felt well-informed about climate change (however, this research is somewhat older, and we expect self-reported knowledge levels in the general public to be even higher at present) [41]. Climate change media coverage could be one of the factors driving levels of awareness and knowledge, among other factors [53]. Also, the industry's focus on climate change as a key target on the construction agenda is expected to have played an important role in driving awareness levels among its employees [52].

It is worth mentioning that self-reported data may be subject to recall bias; however, valuable insights can still be obtained from the research. Our work showed similar trends to McCright [42] and Salehi et al. [16] in that the men from this survey showed a slightly higher perceived knowledge of climate change than women. One of the reasons for this may be systematic gender inequalities driving lower self-belief in the level of one's knowledge among women. In other words, it may be that women's and men's actual knowledge of climate change is on par, but women have less confidence in what they know because of chronic exposure to harmful determinants across the life course (e.g., early life educators and caregivers contributing to gender inequality through messaging, teachings, and role modelling). However, this is an area of work that deserves further exploration.

There were other compelling themes that arose in this research. Participants tended to believe that their company was doing insufficient work towards tackling climate change. Conversely, the opinion on the extent of the company's progress towards climate change varied significantly among respondents. This is surprising as all participants work within the same division and for the same company. This suggests that participants may have different exposures and awareness of what the company is doing towards climate change or have different expectations of what is required. This flags an important point: companies may need to place greater effort in making their employees aware of the actions it is taking to address this important issue. If people feel proud to work for a company (because they believe that the company is contributing positively to society), then this may also increase retention—something future research could disentangle and explore further.

In order to reach the conclusions for this work, the following steps took place: as is common practice in research, an overview of the literature informed the selection of our objective and questionnaire design (please see Table 1 in Section 2 for the questions asked of participants with cross-referencing to the relevant literature); and NVivo software was used to undertake the qualitative analysis of the interview transcripts. Following data saturation and thematic analysis, the themes were finalised and conclusions reached.

4.2. Limitations

This research has a limitation that deserves mentioning. Findings from this work are based on a sample of participants in the UK from one company, thus leading to possible issues with generalizability. Nevertheless, this work is based on qualitative—not quantitative analysis—and the overarching purpose of the work was to understand participant views from a major company that is representative of the UK construction sector. While new insights were obtained from this work, future research should repeat this study in other companies, industries, geographical locations and other settings to identify if similar patterns are observed. We would like to emphasise that our sample, drawn exclusively from a single British construction company, may be limited in scope and does

not sufficiently justify broad or categorical claims about women's greater awareness and concern regarding climate change. The exploratory nature of the research and its restricted context warrants further investigations.

While this work provides a foundation for research on the way gender influences motivation and action towards climate change, additional studies are needed to cover the topic in different geographical and workplace settings. While every effort was made to ensure random selection of participants, it is possible that healthy volunteer effect was present in our study—however, this tends to be the case in all research studies that recruit participants. Further limitations of our work might include social desirability and recall bias—again, these tend to be common limitations in interview-based research. As such, we suggest replication of our work with other samples and in other settings.

4.3. Strengths

This study has several strengths. In-depth interviews were conducted with participants in a range of roles. Quota and snowball sampling techniques were used to recruit a sizeable proportion of women (and men) for this in-depth qualitative work; this overcomes the limitations of previous research [54], which recruited insufficient women for analyses.

5. Conclusions

This is the first known study looking at the implications of gender on tackling climate change within the construction industry. Within the interview sample, women showed higher concern and perceived action, which reflects the gender trends in the general public despite the gender imbalance in the construction industry. The rationale for more women showing higher levels of action is linked to approach (women considering the problem more holistically), empathy (women being more likely to see the human impact) and observed positions (women more prominent in climate-positive roles). The survey also showed that there is significantly more importance and concern placed on climate change in this sample of construction/engineering professionals than in the UK public, but the level of knowledge is aligned.

This study highlights the key role of gender equity in tackling climate change in the industry. Most extant studies focus on gender equality at the board level. However, this study highlights that differing opinions and behaviours differ among women and men throughout the sample, which may impact a company's climate change performance. Therefore, these findings should be considered when identifying measures to better respond to climate within the construction sector.

As the study measures perceived knowledge and action, additional research to measure the actual knowledge and action would evaluate the validity of the respondents' perceptions and inform future work. Additionally, further research is recommended to understand if the reported differences are reflected across the industry alongside quantitative research to identify if the trends identified by the participants in this study are observed in practice. These can help to inform how the identified differences in the behaviour of women can maximise the potential gender equity benefits to tackle climate change. Additional studies investigating the influence of other measures (such as age, education, and nationality) could improve climate change strategies.

Without action, climate change will significantly impact future generations. A gender-equitable construction sector may be an essential key step towards meeting the challenge.

Author Contributions: O.R. designed this study with approval by C.M.; F.R. conducted the literature review, data collection, analysis, and write-up of the first version; O.R. revised the paper. For further details: conceptualisation, O.R. with a review of the topic by C.M.; formal analysis, F.R.; investigation, F.R.; writing—original draft preparation, F.R.; writing—revision of various parts and editing, O.R.;

supervision, O.R.; funding acquisition, C.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research is funded by the University of Cambridge Laing O'Rourke Centre for Construction Engineering and Technology (grant number: NMZL/184.G102179).

Data Availability Statement: The original contributions presented in the study are included in the article.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. IPCC. Summary for Policymakers. In *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*; IPCC: Geneva, Switzerland, 2023; pp. 1–34. [CrossRef]
2. Guo, J.; Kubli, D.; Saner, P. *The Economics of Climate Change: No Action Not an Option*; Swiss Re Management, Ltd.: Zurich, Switzerland, 2021. Available online: https://www.swissre.com/publication-form~ifr~.html?t=1132&id=59447909-6693-4e07-9af2-336c20b79b35#PublicationForm (accessed on 9 March 2024).
3. Flynn, C.; Yamasumi, E.; Fisher, S.; Snow, D.; Grant, Z.; Kirby, M.; Browning, P.; Rommerskirchen, M.; Russell, I. Peoples' Climate Vote Results. United Nations Development Programme and the University of Oxford. 2021. Available online: https://www.undp.org/sites/g/files/zskgke326/files/publications/UNDP-Oxford-Peoples-Climate-Vote-Results.pdf (accessed on 9 March 2024).
4. UNFCCC. The Paris Agreement. No Date. Available online: https://unfccc.int/process-and-meetings/the-paris-agreement (accessed on 9 March 2024).
5. UNFCCC. The Paris Agreement. United National Framework Convention on Climate Change. 2016. Available online: https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf (accessed on 9 March 2024).
6. Mavisakalyan, A.; Tarverdi, Y. Gender and climate change: Do female parliamentarians make difference? *Eur. J. Political Econ.* **2019**, *56*, 151–164. [CrossRef]
7. McKinney, L.A.; Fulkerson, G.M. Gender Equality and Climate Justice: A Cross-National Analysis. *Soc. Justice Res.* **2015**, *28*, 293–317. [CrossRef]
8. Abd Majid, N.; Jaaffar, A.H. The Effect of Women's Leadership on Carbon Disclosure by the Top 100 Global Energy Leaders. *Sustainability* **2023**, *15*, 8491. [CrossRef]
9. Ben-Amar, W.; Chang, M.; McIlkenny, P. Board Gender Diversity and Corporate Response to Sustainability Initiatives: Evidence from the Carbon Disclosure Project. *J. Bus. Ethics* **2017**, *142*, 369–383. [CrossRef]
10. Kurosaki, M.; Gao, K. Gender Diversity and Climate Innovation. BloombergNEF Sasakawa Peace Foundation. 2020. Available online: https://www.spf.org/en/global-image/units/upfiles/144550-1-20211027133148_b6178d634d67e1.pdf (accessed on 4 February 2024).
11. Al-Najjar, B.; Salama, A. Mind the gap: Are female directors and executives more sensitive to the environment in high-tech us firms? *Technol. Forecast. Soc. Chang.* **2022**, *184*, 122024. [CrossRef]
12. Gambacorta, L.; Pancotto, L.; Reghezza, A.; Spaggiari, M. *Gender Diversity in Bank Boardrooms and Green Lending: Evidence from Euro Area Credit Register Data*; European Central Bank: Frankfurt, Germany, 2022. [CrossRef]
13. McElhaney, K.A.; Mobasseri, S. Women Create a Sustainable Future. UC Berkeley Haas School of Business. 2012. Available online: https://www.eticanews.it/wp-content/uploads/2012/11/Report-Women_Create_Sustainable_Value.pdf (accessed on 4 February 2024).
14. Great Britian. Work and Opportunities for Women. Women and the Net Zero Economy, a Transition Toolkit for Business with Global Supply Chains. Work and Opportunities for Women with PwC, Business Fights Poverty & Harvard Kennedy School. No Date. Available online: https://assets.publishing.service.gov.uk/media/6188f2d28fa8f52980d932ab/Women-Net-Zero-Economy-toolkit-businesses2.pdf (accessed on 4 February 2024).
15. Kwon, S.A. Where Does an Individual's Willingness to Act on Alleviating the Climate Crisis in Korea Arise from? *Sustainability* **2022**, *14*, 6664. [CrossRef]
16. Salehi, S.; Pazuki Nejad, Z.; Mahmoudi, H.; Knierim, A. Gender, responsible citizenship and global climate change. *Women's Stud. Int. Forum* **2015**, *50*, 30–36. [CrossRef]
17. Randstad. Gender Equality in the Workplace 2022. Randstad. 2022. Available online: https://www.randstad.co.uk/s3fs-media/uk/public/2022-09/Gender%20equality%202022%20(HR).pdf (accessed on 15 March 2024).
18. Cohen, M.G. Gendered Emissions: Counting Greenhouse Gas Emissions by Gender and Why it Matters. *Altern. Routes J. Crit. Soc. Res.* **2013**, *25*, 55–80. Available online: https://alternateroutes.ca/index.php/ar/article/view/20595 (accessed on 4 February 2024).

19. Ferroukhi, R.; Renner, M.; Nagpal, D.; García-Baños, C. *Renewable Energy: A Gender Perspective*; International Renewable Energy Agency (IRENA): Masdar City, United Arab Emirates, 2019. Available online: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Jan/IRENA_Gender_perspective_2019.pdf (accessed on 4 February 2024).
20. McCalla-Leacy, J.; Dorrington, C.; Rasool, S.; Forshaw, M.; Jarvis, G. *Leaders 2050: Diversity for Net Zero Report*; KPMG: London, UK, 2022. Available online: https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2022/10/diversity-net-zero-report.pdf (accessed on 24 January 2024).
21. João Ribeirinho, M.; Mischke, J.; Strube, G.; Sjödin, E.; Luis Blanco, J.; Palter, R.; Biörck, J.; Rockhill, D.; Andersson, T. *The Next Normal in Construction: How Disruption is Shaping the World's Largest Ecosystem*; McKinsey & Company: New York, NY, USA, 2020. Available online: https://www.mckinsey.com/~/media/McKinsey/Industries/Capital%20Projects%20and%20Infrastructure/Our%20Insights/The%20next%20normal%20in%20construction/The-next-normal-in-construction.pdf (accessed on 9 March 2024).
22. Great Britain. House of Commons Library, Industries in the UK. 2023. Available online: https://researchbriefings.files.parliament.uk/documents/CBP-8353/CBP-8353.pdf (accessed on 9 March 2024).
23. United Nations Environment Programme. *Global Status Report for Buildings and Construction: Beyond Foundations: Mainstreaming Sustainable Solutions to Cut Emissions from the Buildings Sector*; United Nations Environment Programme: Nairobi, Kenya, 2024. [CrossRef]
24. Office for National Statistics. LFS: In Employment: Construction: UK: Women: Aged 16 and Over: Thousands: NSA. 2024. Available online: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/i4ej/lms (accessed on 9 March 2024).
25. Office for National Statistics. LFS: In Employment: Construction: UK: Men: Aged 16 and Over: Thousands: NSA. 2024. Available online: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/i4ek/lms (accessed on 9 March 2024).
26. Martin, P.; Barnard, A. The experience of women in male-dominated occupations: A constructivist grounded theory inquiry. *S. Afr. J. Ind. Psychol.* **2013**, *39*, 1–12. [CrossRef]
27. POWERful Women; Bain & Company. *Cultivating Female Talent in Energy: What the Sector Can Do to Resolve the Barriers Faced by Women in Middle Management*; POWERful Women: London, UK, 2022. Available online: https://powerfulwomen.org.uk/wp-content/uploads/2022/04/Cultivating-Female-Talent-in-Energy_PfW-Bain_April-2022-FINAL_2-1.pdf (accessed on 24 January 2024).
28. Kronsell, A.; Smidfelt Rosqvist, L.; Winslott Hiselius, L. Achieving climate objectives in transport policy by including women and challenging gender norms: The Swedish case. *Int. J. Sustain. Transp.* **2016**, *10*, 703–711. [CrossRef]
29. Lazoroska, D.; Palm, J.; Bergek, A. Perceptions of participation and the role of gender for the engagement in solar energy communities in Sweden. *Energy Sustain. Soc.* **2021**, *11*, 35. [CrossRef]
30. McBride-Wright, M. *Masculinity in Engineering, Perceptions in Engineering Culture*; EqualEngineers: London, UK, 2022. Available online: https://equalengineers.com/wp-content/uploads/2022/10/Masculinity-in-Engineering-Research-Report-October-2022.pdf (accessed on 5 December 2024).
31. Hanna, E.; Gough, B.; Markham, S. Masculinities in the construction industry: A double-edged sword for health and wellbeing? *Gend. Work. Organ.* **2020**, *27*, 632–646. [CrossRef]
32. Ajslev, J.Z.; Lund, H.L.; Møller, J.L.; Persson, S.R.; Andersen, L.L. Habituating pain: Questioning pain and physical strain as inextricable conditions in the construction industry. *Nord. J. Work. Life Stud.* **2013**, *3*, 195–218. [CrossRef]
33. Do, J.J.; Samuels, S.M. I Am a Warrior: An Analysis of the Military Masculine-Warrior Narrative Among U.S. Air Force Officer Candidates. *Armed Forces Soc.* **2021**, *47*, 25–47. [CrossRef]
34. Gladwin, D. Why Climate Change Education Needs More Empathy. Oxford University Press's Academic Insights for the Thinking World. 28 July 2021. Available online: https://blog.oup.com/2021/07/why-climate-change-education-needs-more-empathy/ (accessed on 5 December 2024).
35. Kantaria, R.; Hoyler, E.; Cairns, A.; Glynn, S.; Hobart, J.; Knipe, D.; Mayer, D.; Nedd, R.; Tsim, J. The Climate Action Gender Gap. Oliver Wyman Forum. 2021. Available online: https://www.oliverwymanforum.com/climate-sustainability/2021/nov/the-climate-action-gender-gap.html (accessed on 5 December 2024).
36. Christov-Moore, L.; Simpson, E.A.; Coudé, G.; Grigaityte, K.; Iacoboni, M.; Ferrari, P.F. Empathy: Gender effects in brain and behavior. *Neurosci. Biobehav. Rev.* **2015**, *46*, 604–627. [CrossRef] [PubMed]
37. Cleland, J.E. The qualitative orientation in medical education research. *Korean J. Med. Educ.* **2017**, *29*, 61–71. [CrossRef]
38. Allen, L.P.; Kelly, C.; Hatala, A.R. Answering tough questions: Why is qualitative research essential for public health? *Aust. New Zealand J. Public Health* **2024**, *48*, 100157. [CrossRef]
39. Hennink, M.; Kaiser, B.N. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Soc. Sci. Med.* **2022**, *292*, 114523. [CrossRef]

40. Lumivero. NVivo 14 (Version 14.23.2 (41)) [Computer Program]. 2023. Available online: https://lumivero.com/products/nvivo/ (accessed on 25 February 2024).
41. European Parliament. *Europeans' Attitudes Towards Climate Change, Special Eurobarometer 313*; European Parliament: Brussels, Belgium, 2009. Available online: https://www.europarl.europa.eu/pdf/eurobarometre/12_07/report_eb711_climat_change_en.pdf (accessed on 4 February 2024).
42. McCright, A.M. The effects of gender on climate change knowledge and concern in the American public. *Popul. Environ.* **2010**, *32*, 66–87. [CrossRef]
43. McCright, A.M.; Dunlap, R.E. Cool dudes: The denial of climate change among conservative white males in the United States. *Glob. Environ. Chang.* **2011**, *21*, 1163–1172. [CrossRef]
44. National Grid. *Building the Net Zero Energy Workforce*; National Grid: Warwick, UK, 2020. Available online: https://www.nationalgrid.com/document/126256/download (accessed on 24 January 2024).
45. Saunders, M.N.K.; Townsend, K. Reporting and Justifying the Number of Interview Participants in Organization and Workplace Research. *Br. J. Manag.* **2016**, *27*, 836–852. [CrossRef]
46. Tranter, B.; Booth, K. Scepticism in a changing climate: A cross-national study. *Glob. Environ. Chang.* **2015**, *33*, 154–164. [CrossRef]
47. McDonald, B.; Kanske, P. Gender differences in empathy, compassion, and prosocial donations, but not theory of mind in a naturalistic social task. *Sci. Rep.* **2023**, *13*, 20748. [CrossRef] [PubMed]
48. Ofcom. Online Nation. 2024. Available online: https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/online-research/online-nation/2024/online-nation-2024-report.pdf?v=386238 (accessed on 5 December 2024).
49. Havard Health Publishing, Havard Medical School. Mars vs. Venus: The Gender Gap in Health. Available online: https://www.health.harvard.edu/newsletter_article/mars-vs-venus-the-gender-gap-in-health (accessed on 5 December 2024).
50. Marques-Vidal, P.; Waeber, G.; Vollenweider, P.; Bochud, M.; Stringhini, S.; Guessous, I. Sociodemographic and Behavioural Determinants of a Healthy Diet in Switzerland. *Ann. Nutr. Metab.* **2015**, *67*, 87–95. [CrossRef]
51. Bärebring, L.; Palmqvist, M.; Winkvist, A.; Augustin, H. Gender differences in perceived food healthiness and food avoidance in a Swedish population-based survey: A cross sectional study. *Nutr. J.* **2020**, *19*, 140. [CrossRef]
52. Ellis, T.; Manidaki, M.; Pantelidou, H. Good Progress But Not Fast Enough. Green Construction Board. 2021. Available online: https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2021/04/Infrastructure-Carbon-Review-seven-years-on_March-2021.pdf (accessed on 25 February 2024).
53. Shukla, P.R.; Skea, J.; Slade, R.; Al Khourdajie, A.; van Diemen, R.; McCollum, D.; Pathak, M.; Some, S.; Vyas, P.; Fradera, R.; et al. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, UK; New York, NY, USA, 2022. [CrossRef]
54. Organo, V.; Head, L.; Waitt, G. Who does the work in sustainable households? A time and gender analysis in New South Wales, Australia. *Gend. Place Cult.* **2013**, *20*, 559–577. [CrossRef]