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Nico Pestel
ROA, Maastricht University and IZA

Andrew Oswald
University of Warwick and IZA

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Why Do Relatively Few Economists Work on Climate Change? A Survey*

Climate change is sometimes viewed as the most serious problem facing modern society. The science behind anthropogenic global warming has been understood for more than half a century. Yet relatively few economists work on topics related to climate change. What explains this (apparent) lack of interest from economists? Here we report the results of a survey to try to understand economists' views and actions. More than 90% of respondents state that they are concerned about climate change. Our survey then asks the respondents why they have not done research on the topic. The most frequent response (given by approximately 80% of economists) is that they do not feel they have enough time and resources to be able to work on climate change. We discuss possible explanations and concerns.

JEL Classification: A11, Q54

Keywords: climate change, economics

Corresponding author:
Nico Pestel
Maastricht University
Research Centre for Education and the Labour Market (ROA)
Tongersestraat 49
6211 LM Maastricht
The Netherlands

E-mail: n.pestel@maastrichtuniversity.nl

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Introduction

Climate change is perhaps the central problem of our time and William Nordhaus recently described it as the "ultimate challenge for Economics" (Stern 2015, Nordhaus 2019). It has been known for more than half a century that the phenomenon of global warming stems from the burning of fossil fuels and is thus intrinsically anthropogenic (eg. Benton 1970, Madden and Ramanathan 1980). To an economist, the rise of global temperatures can therefore be thought of as a classic public good (or 'tragedy of the commons') kind of problem.

There have already been efforts, by various governments, to mitigate the extent of climate change. However, modern climatic data continue to suggest that exposure to extreme events such as heatwaves, floods, and hurricanes will become more prevalent for the world's population. In addition to causing damage to the environment and human health, both the phenomenon of climate change and any adaptation to it pose difficulties for modern societies and economies. There is evidence from natural sciences that if humanity falls short of sufficiently cutting the degree of global warming the ensuing climate change will have severe consequences for many people's livelihood on planet Earth.[1] The key challenge is therefore to coordinate internationally on reducing further emissions of greenhouse gases. Mitigation requires major technological and institutional changes including the upscaling of low-carbon energy supply. This is an area where economists can contribute, but it has been argued that, relative to the importance at stake, the amount of research on climate-change related topics in the leading journals of the economics profession is perplexingly scarce (Oswald and Stern, 2019).[2]

If comparatively few economists do research on an evidently important topic such as climate change, it is natural to ask the question: Why? Are they unconcerned, or is there another reason?

[1] This is underlined by the 2021 Nobel Prize in Physics being awarded half to Syukuro Manabe and Klaus Hasselmann "*for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming*", see: https://www.nobelprize.org/prizes/physics/.

[2] For example, it appears that only recently has the distinguished Quarterly Journal of Economics published its first article on climate change (Shapiro 2021). Goodall (2008) made a related point more than a decade ago. At the 2020 meeting of the American Economic Association there appear to have been only two sessions, out of approximately 180, with titles explicitly containing the words climate change or carbon. However, some advance has been made in understanding and formalizing climate-economy linkages, which was recognized by awarding half the 2018 Nobel Prize in Economic Sciences to William D. Nordhaus "*for integrating climate change into long-run macroeconomic analysis*", see https://www.nobelprize.org/prizes/economic-sciences/2018/summary/.

One idea put forward in Oswald and Stern (2019) was that the subject of Economics might be stuck in a sub-optimal Nash equilibrium. This is the notion that economists might fail to work on climate change because other economists do not (so that, potentially, economists are deeply concerned about climate change but despite that are deterred, perhaps because, on that topic, they think their chances are low of publishing papers in major journals[3]).

In order to understand whether there are barriers that hinder economists from devoting more attention to the changing climate, and the impacts of climate policies, we conducted a survey on the world's largest network of publishing economists, the Fellows and Affiliates of the Institute of Labor Economics (IZA). In this, the "IZA Survey on Climate Change and Labor Markets", we elicited whether respondents had done any research related to climate change as well as asking the reasons for having or – more importantly for our purpose – for not having worked on this topic so far.

To summarize the results in later sections, we find that a majority (72%) of survey respondents say they have not done any research related to climate change, although more than 90% of respondents are 'concerned' or 'very concerned' about climate change. When inquiring about the reasons for not having worked on topics related to climate change, the most frequent response (about 80%) is that respondents state they do not have the time or resources.

Data and Descriptives

The data come from the "IZA Survey on Climate Change and Labor Markets", an online survey of Fellows and Affiliates of the Institute of Labor Economics (IZA). We conducted this over the period from 4 to 14 October 2021.[4] Overall, we sent out 1,754 email invitations in the survey. In the end, 281 participants responded to the survey questions, which gives a response rate of 16%. We are deeply grateful to those who did so.

The core demographics of respondents by and large reflect the composition of the IZA network.[5] About 26% of respondents are female; almost two thirds (65%) are in the age range between 35 and 54; respondents to the survey are predominantly from Europe (57%) and North America (31%); and 65% of respondents are senior academics at the level of Associate or Full Professor. Our very short questionnaire comprised questions on whether the respondents have

[3] Such a forecast by a young economist might be a rational one given the few papers they will have seen on climate change in major journals.
[4] IZA is a nonprofit research institute and the leading international network in labor economics, comprising more than 1,600 scholars from around the world. See https://www.iza.org/research/network for details.
[5] See, e.g., for the geographic spread of IZA network members: https://www.iza.org/apps/fellows/geo.php.

done or are currently conducting any research work related to climate change and asked what the main reasons are for doing or not doing work on this topic. We also elicited to what extent respondents are concerned about climate change, and what climate change effects they expect for a range of labor market outcomes.

Main Results

We were interested in whether respondents had done research related to climate change. Our wording in the invitation email to respond to our survey mentioned that it was trying to find out about research on climate change, so it seems important to bear in mind that some respondents may have self-selected out of filling in the survey.

One question in the survey was worded as follows:

"*Have you done any research related to climate change (incl. ongoing work)?*"

Approximately 28% of respondents answered "Yes" and 72% responded "No" to this question (see Figure A.1 in the Appendix). As explained above, given that participation in the "IZA Survey on Climate Change and Labor Markets" was voluntary, we may expect that those network members intrinsically interested in the topic, and therefore more likely to have done any research related to climate change, are overrepresented in the sample.[6] Therefore, we would interpret the share of 28% having worked on climate change as an extreme upper bound.

The fact that a minority of respondents have devoted any research to climate change stands in interestingly stark contrast to the extent of their own feelings about climate change. We know that, because the survey also asked respondents:

"How concerned are you about climate change?"

The great majority of the respondents stated that they are "concerned" (30%) or "very concerned" (61%) about climate change. Only one in ten economists gave the answers "somewhat concerned" (7.5%), "a little concerned" (1.4%), or "not concerned at all" (less than 1%).

We attempted to probe the main reasons for either having worked or not having worked on climate change. We did so by presenting a list of options where respondents could indicate "Does apply" or "Does not apply". In this part of the inquiry, we are mainly interested in the

[6] As an indication, Figure A.2 in the Appendix shows that among those respondents who state that they are "very concerned about climate change" the share having devoted research work to climate change is somewhat higher (31%), while it is just above 20% among those who are only "concerned" or less.

reasons for the majority of respondents who indicated *not to have worked* on climate change so far.[7]

The results on this are presented in Figure 1. Surprisingly (in our personal view), by far the most common reason – stated by about 80% of people – for not having worked on topics related to climate was having "not enough time/resources".

This answer has a strongly paradoxical aspect. Two thirds of the sample of respondents are senior academics in tenured positions at the level of Associate or Full Professor. One might expect that research time could be freely devoted to almost any topic (especially if a vast majority of respondents say they are concerned about it). Very few researchers seem, from the data, to view climate change as a minor problem for the planet. Fewer than 4% of respondents stated that they have not worked on climate change because they do not see societal or policy impact of such research. Also, only a minority of 23% stated that they have "no interest" in the topic, while lack of publication potential (12%) or discouragement by the employer (6.7%) were also of minor importance.

Does this mean that, put loosely, economists are too busy to work on climate change?

It should be emphasized that the category refers to time *or* resources. We did not specify any finer sub-divisions within the wording of the questionnaire. Hence, the mention of 'resources' might be interpreted as lack of funding or access to data, etc. Nevertheless, our judgment would be that it is not easy to see how this could be a complete explanation.

The second most important category of reasons for not having worked on climate change (54%) is the catch-all answer box of "other". While this category is, by definition, not further specified, some of the free-hand responses in the Comments section we entered at the end of the survey indicate that perceived lack of expertise related to the topic of climate change, as well as fixed costs of entering this as a new field, are considered to be obstacles for work in this area. Since the sample of respondents is mainly comprised of labor economists, it is maybe not surprising that the topic of climate change is frequently not considered as one where they view themselves to have a comparative advantage. For example, a similar survey as ours among a network of environmental economists could plausibly be expected to show a higher

[7] Appendix Figure A.3 shows that for the subset of respondents who had already worked on climate change the main reasons are "personal interest" as well as "societal and policy impact" with more than 90% responding "Does apply" to each of these options. Also, publication potential and the availability of time/resources with each more than 60% appear to be important motivations for working on climate change, while "encouragement by the employer" and "other" reasons are of lesser importance (less than 50%).

share of researchers working on climate change, which raises the question whether there are sufficient incentives to collaborate across sub-fields within economics. Further, some may argue that labor economics is nowadays a field particularly concerned with cleanly identified empirical work[8], which requires access to data from the (recent) past, and that climate change is something happening in the future for which there is no data. However, this argument is at odds with the insights from climate science, which clearly documents that global warming does already have major implications for many domains of life, including a variety of outcomes related to labor markets and human capital formation. Therefore, labor economists may be interested in the impact of climate change itself (e.g., think of heat as one aspect of working conditions) as well as the consequences of mitigation of (e.g., employment effects of a carbon tax) and adaptation (e.g., changes in working arrangements) to global warming.

In order to understand labor economists' notion of the nexus between climate change and the outcomes typically studied in their field, we elicited respondents' expectations how they thought climate change might affect a range of broad labor market outcomes. Specifically, we asked whether these outcomes were expected to "increase/improve" or "decrease/deteriorate" due to climate change, whether there is "no impact" or whether respondents "don't know". Of course, the effects of climate change and its consequences – higher average temperatures, rising sea levels and more frequent extreme weather events – depend on a number of circumstances. Especially with respect to future impacts, climate change effects will depend on the global development of greenhouse gas emissions, which crucially hinges on coordinated global policy action, which remained unspecified in the questionnaire. Also, there will be heterogeneous effects with some population groups being more or differently affected than others, particularly across world regions and climate zones or across sectors of the economy. Nevertheless, we were interested in the broad expectations of respondents.

The results are summarized in Figure 2. There appears to be a consensus that global warming has negative impacts on the health of workers. Respondents also believe it increases the likelihood of migration of workers as well as relocation of firms. This is in line with existing research findings from the field of economics.[9] Also, a majority of more than 50% of respondents expects the productivity of blue collar workers, typically performing physical tasks

[8] This has been illustrated by awarding the 2021 Nobel Prize in Economic Sciences to David Card "*for his empirical contributions to labour economics*", and to Joshua D. Angrist and Guido W. Imbens "*for their methodological contributions to the analysis of causal relationships*", see: https://www.nobelprize.org/prizes/economic-sciences/2021/summary/.

[9] See, e.g., Mbaye (2017) and Mullins and Bharadwaj (2021) for impacts on migration, as well as Barreca et al. (2016), Deschênes and Moretti (2009), Deschênes and Greenstone (2011) on the effects of heat on mortality.

that are more exhausting under higher temperatures, to decrease due to climate change (see, e.g., Somanathan et al. 2021). With respect to labor supply and labor demand, the relative majority of respondents indicated that they "don't know" (more than 40%) as well as large shares expecting "no impact", which may be due the expectation of heterogeneous effects going in opposite direction and yielding zero effects on aggregate. However, there is some evidence from economics that increasing temperatures reduce labor supply and have an impact on time use (Graff Zivin and Neidell 2014, Connolly 2018, Somanathan et al. 2021). Similarly, the expectations for productivity of white collar workers or educational achievements, both associated with cognitive performance, are rather inconclusive, while there have been a number of recent economics papers that show strongly deleterious impacts of exposure to heat (Park 2020, Park et al. 2020, Graff Zivin et al. 2020, Park et al. 2021). This may indicate that many labor economists among our survey respondents underscore what their field can potentially contribute to our understanding of the impacts of global warming itself as well as the consequences of mitigation and adaptation policies for the functioning of labor markets, productivity and human capital formation.

Conclusions

This paper explores the relative lack of research by economists on the topic of climate change (where our use of the word 'relative' is chosen in relation to the scale of the problem facing the human race). Our paper reports the results of a survey – of 1,751 researchers in the IZA network – to try to understand economists' views and actions. First, more than 90% of respondents state that they are concerned about climate change. Second, the data reveal that only a minority have been involved in work on it, and we suspect the numbers answering yes may overstate the actual percentage in the population of researchers.[10] Third, our survey asks the respondents why they, personally, have not done research on that topic. The most frequent response, given by approximately 80% of the economists, is that they do not feel they have enough time and resources to be able to work on climate change.[11]

[10] Because the introduction to our survey mentioned that it would be about climate change.

[11] As this paper was being written up, we came to realize that IZA currently stands out as a potential exception to the idea that relatively few articles are being written. Although in the history of the IZA discussion paper series only approximately 80 out of 15,000 papers have addressed the economics of climate change (as assessed by a word search of the Abstracts on the IZA discussion paper website), the flow of very recent work is impressive. It includes Afridi et al. (2021), Andre et al. (2021), Beine et al. (2019), Bento et al. (2021a, 2021b), Berlemann et al. (2021), Bose et al. (2020), Clay et al. (2021), Da Mata et al. (2021), Frijters et al. (2021), Gibson and Mullins (2020), Konrad and Lommerud (2021), Hanifi et al. (2021), Marchetta et al. (2021), Nowakowski and Oswald (2020), Powdthavee (2020), and Unfried et al. (2021).

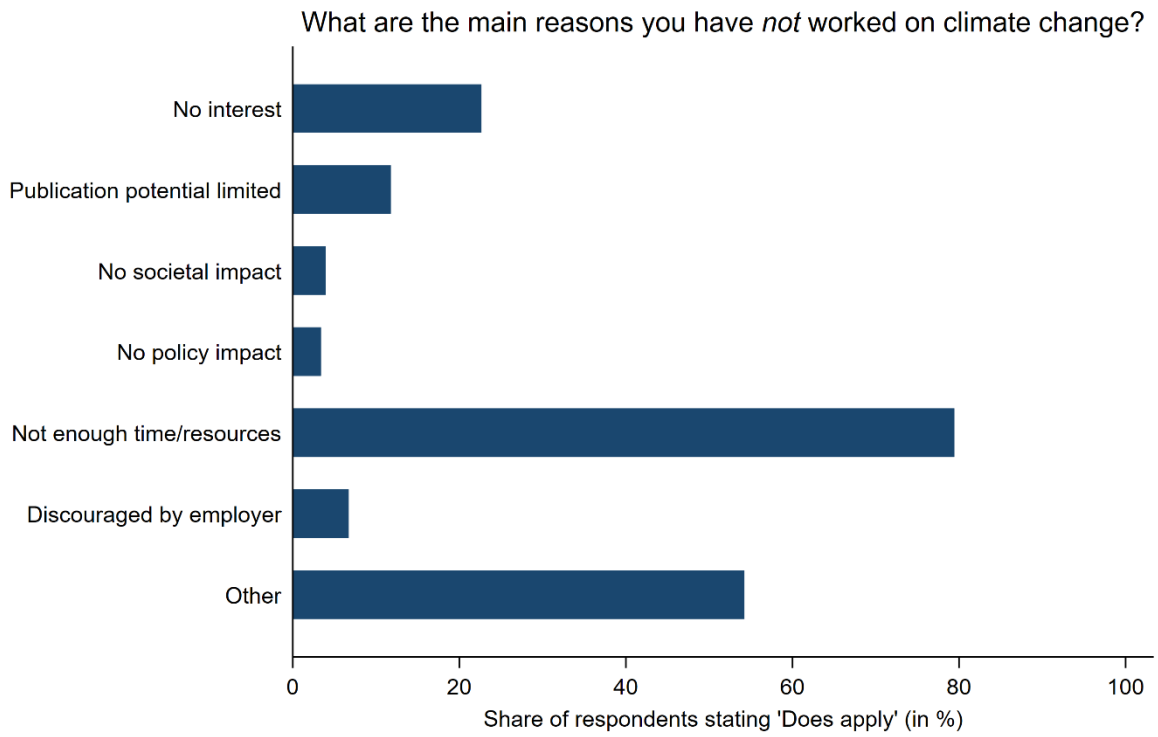
How should we interpret such an answer? One might view it as a deeply puzzling one. Most of the men and women who generously filled out our survey (nearly 300 talented economists) are tenured professors in either Europe or the USA. Those individuals are free to do research on almost any topic of their choosing. They typically live in the developed countries that were the principal source of the carbon emissions that have raised the globe's temperature – and in the two continents where there is probably more publicity about climate change, and about concomitant fires and floods, than in any other continent. Existing research has already proven that economists can bring important insights to the table when it comes to the impacts of climate change on a variety of outcomes they traditionally study – without entirely entering a new field or learning previously unknown methods. More research on the effects of climate change and climate policies on labor markets and human capital formation (or any other subfield of economics) would contribute to society's understanding of the consequences of not achieving sufficient reductions of greenhouse gas emissions.

It is not easy to test the conjecture of Oswald and Stern (2019) that economists may be stuck in a sub-optimal Nash equilibrium where most economists do not work on climate change predominantly because others do not. The data in our survey could be interpreted in that way but the idea remains an unproven conjecture. If the conjecture were true, it would presumably not reflect well on the economics profession, and might call for efforts to improve individual researchers' incentives to devote more attention to a topic of existential importance for humanity.

In overall conclusion, we are not sure why the answer 'not enough time/resources' was the main reply in our survey. It seems plausible to believe that it should be read in short hand as 'I'm simply way too busy to work on climate change'. Why tenured professors – many with children or even grandchildren – feel that way, on an overheating planet, is an issue that seems to us to demand further attention. It is potentially concerning.

Figure 1

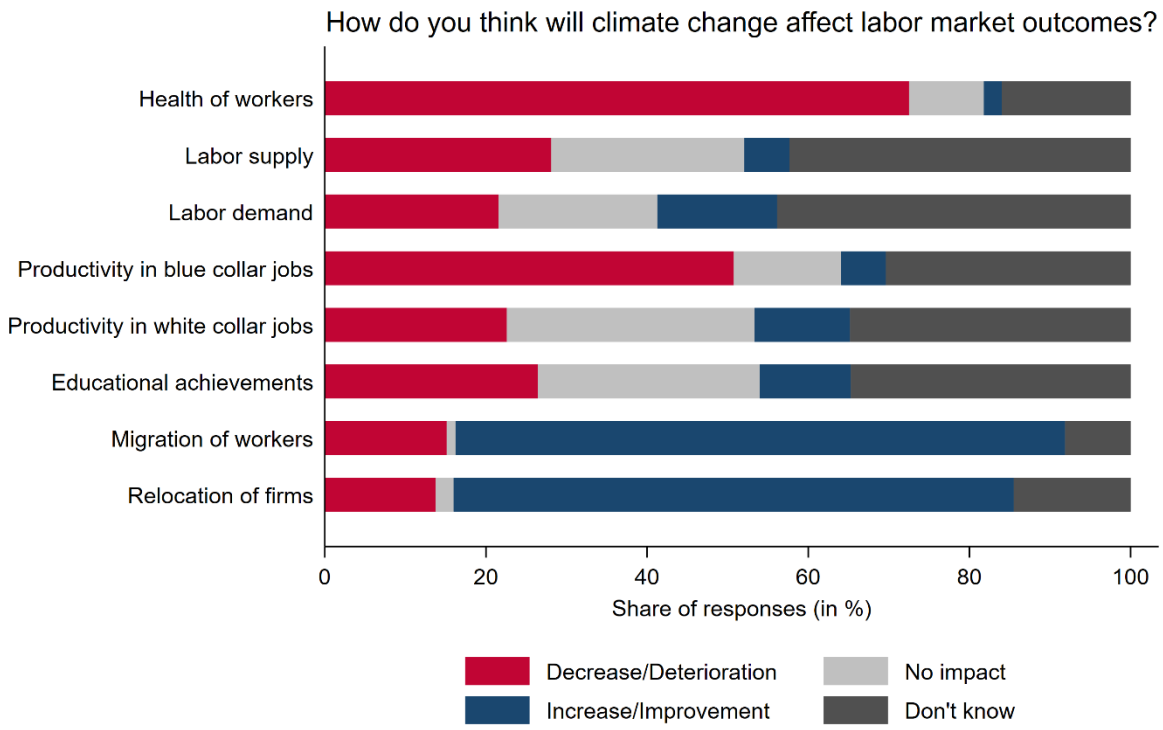
The explanations that economists give when asked why they have not worked on climate change



Source: IZA survey, October 2021. Number of respondents = 203 (subsample of respondents who stated not having worked on climate change).

Figure 2

Economists' views on the likely impacts of climate change on labor market outcomes



Source: IZA survey, October 2021. Number of respondents = 281.

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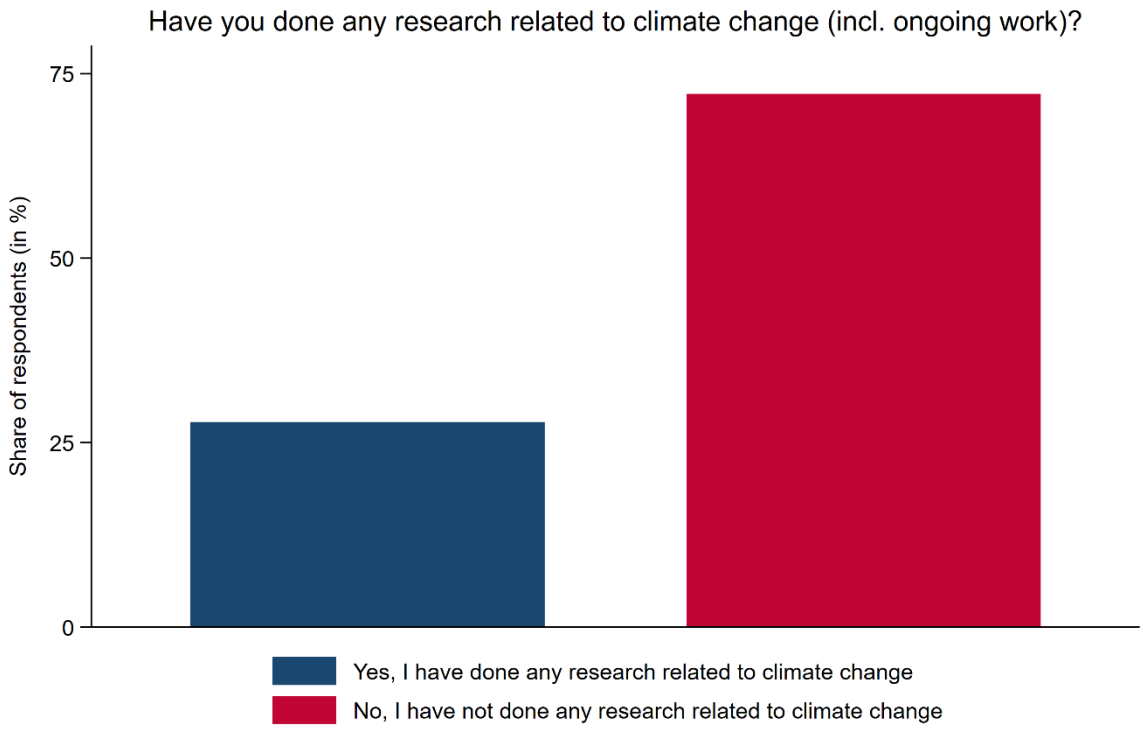
APPENDIX

Figure A.1

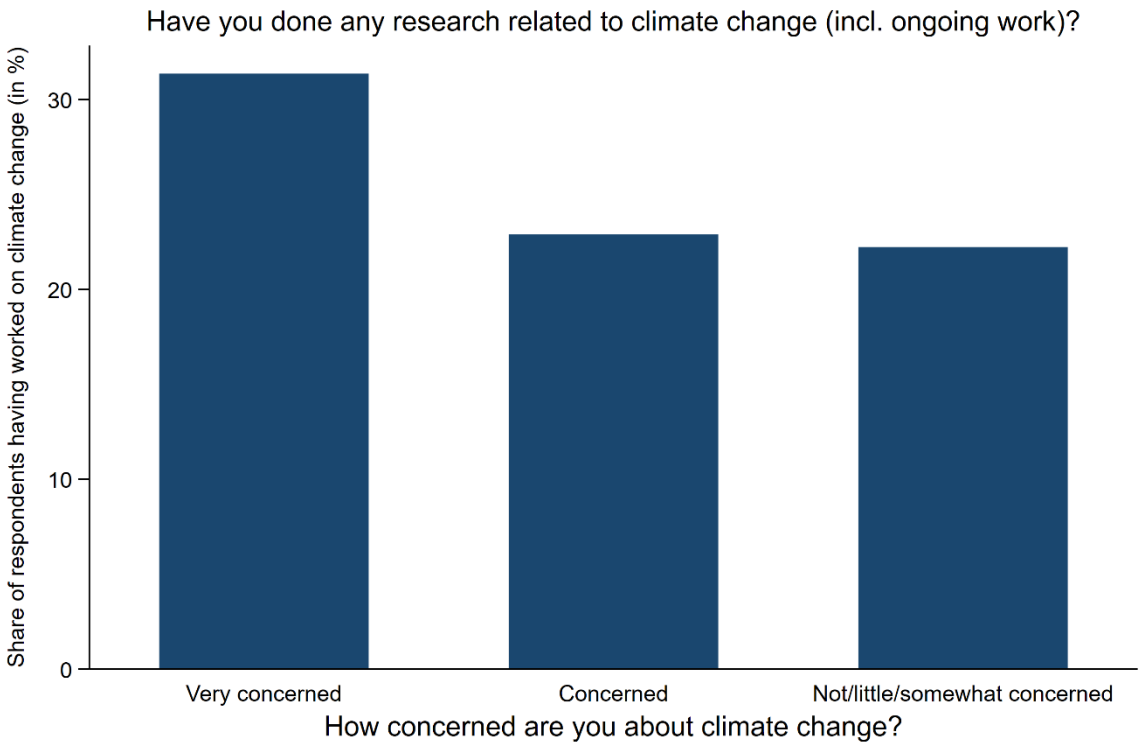
The share of survey respondents having worked on climate change



Source: IZA survey, October 2021. Number of respondents = 281.

Figure A.2

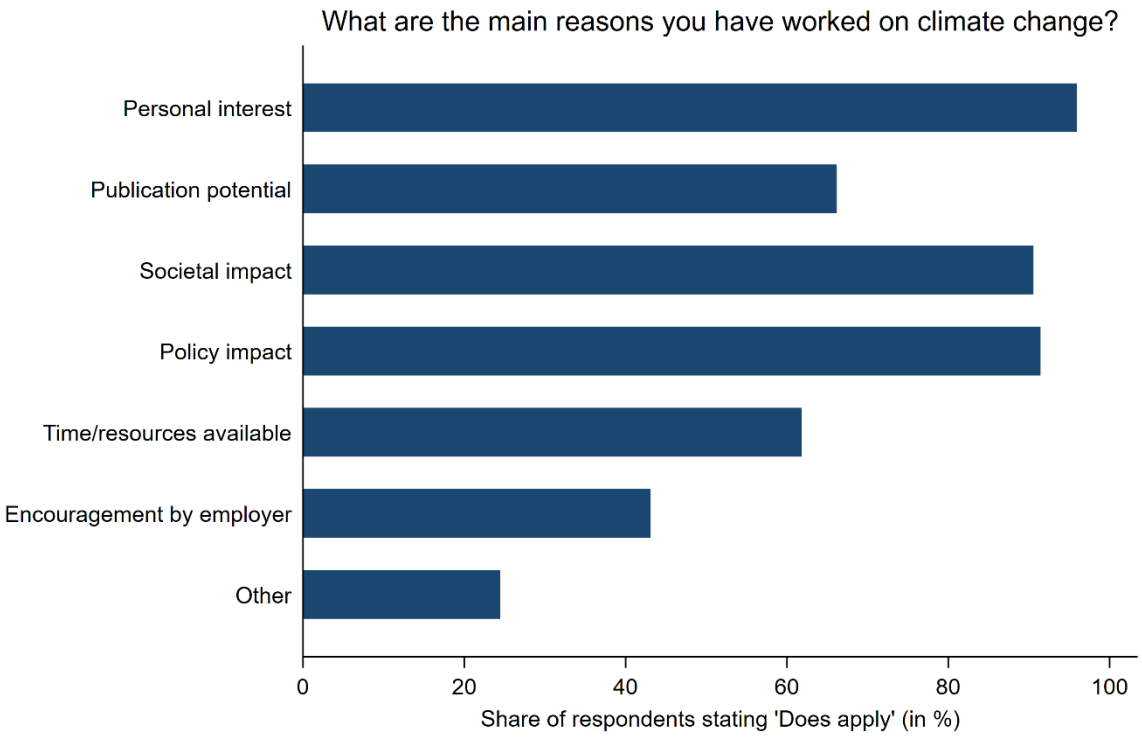
The share of respondents having worked on climate change by the extent of their concern



Source: IZA survey, October 2021. Number of respondents = 281.

Figure A.3

The main reasons given for having worked on climate change among those economists who have done so



Source: IZA survey, October 2021. Number of respondents = 78 (subsample of respondents who stated having worked on climate change).