



Businesses' perceptions of risk of reduced employee productivity due to higher working temperatures and infrastructure disruption in working environments

Executive Summary

1. Research aims and methodology

- 1.1 This report summarises the findings of research carried out by Wavehill, an independent social and economic research company, on behalf of the Welsh Government. The immediate context of this research is 2017 Climate Change Risk Assessment (CCRA) Evidence Report published by the UK Committee on Climate Change. The report identified "Risks to businesses from reduced employee productivity, due to infrastructure disruption and higher temperatures in working environments" as a research priority for Wales.
- 1.2 The aims of this study were to identify:
 - Businesses' perceptions of the risk of a decline in worker productivity due to infrastructure disruption and higher working temperatures and demographic differences in responses.
 - Whether, or to what extent businesses in Wales have adequate business adaptation plans in place to manage this risk and reasons why businesses do not have adequate adaptation plans in place.
 - Whether additional support is required to aid businesses in developing robust business adaptation plans.
- 1.3 Research was primarily carried out via a business survey, which received 243 responses. The same survey was distributed both online and carried out as a telephone survey. A sample frame was developed to ensure that survey responses reflected demographics of businesses in Wales, those sectors considered most exposed to issues associated with climate change and those where potential policy interventions could have the most tangible effect.

- 1.4 In addition to the survey, 10 follow-up telephone interviews were carried out to provide a more in-depth understanding of businesses' approaches to assessing and acting on risks due to extreme heat events resulting from climate change. All research activities were available bilingually.
- 1.5 As a consequence of the COVID-19 pandemic, which caused a UK-wide lockdown, the survey was taken out of the field before the initial target of 350 survey responses and 20 follow-up interviews had been completed. As a result, there are potential issues around the robustness of findings and caution must be taken about drawing conclusions based on these findings.
- 1.6 Owing to the small sample size, statistical testing of the results has not been carried out. It should therefore be understood that where this executive summary comments on differences being apparent, these differences are not indicative of statistical significance.
- 1.7 It also appears that the data collected is of variable quality. The focus of the research has been on perceptions of risks to business continuity and the mitigation of risk due to heat, but it is not clear that businesses have always understood the precise nuances of the research questions. For example, some responses to the survey suggest confusion around the difference between climate change mitigation and climate change adaptation issues. Likewise, some businesses responded in relation to non-heat related risks, such as flooding. Issues with the consistency and coherence of the data was particularly prominent among responses collected via online modes of distribution.

2. Research Findings

Businesses' Perceptions of Risk Due to Climate Change

- 2.1 The majority of businesses responding to the survey identified some perceived risk due to climate change, including specific risks due to higher working temperatures and infrastructure disruption. However, most businesses responding to the survey perceived these risks to be neither severe nor pressing. Only a very small number of businesses surveyed identified great risks from higher working temperatures (4 per cent, 9/242) or infrastructure disruption (5 per cent, 11/242). A potential factor influencing this assessment is that while many businesses are concerned about potential risks, they are unclear about what the specific risks to their business are, including specific sectoral risks and risks affecting different areas of Wales.
- 2.2 It is notable that a small but minority of businesses do not perceive any risks to their business at all due to climate change (17 per cent of respondents, 39/227), more businesses perceive risks in other areas but do not perceive risk either due to higher working temperatures or infrastructure disruption.
- 2.3 There are some sectoral differences between perceptions of risk, although no clear pattern emerges. For example, businesses whose workers primarily work outside perceive the greatest risk of reduced worker productivity due to higher working temperatures. Office-based businesses also perceive higher-than-average risks of reduced productivity due to higher working temperatures. However, manufacturing businesses perceive below-average risks due to climate change in this area.

Businesses' Approaches to Assessing and Acting on Risk

- 2.4 Although businesses do perceive there to be risks due to climate change, including around higher working temperatures and infrastructure disruption, relatively few are taking action to fully understand and mitigate these risks. Most businesses responding to the survey expressed an intention to act in order to adapt to the risks posed by climate change, but most have not yet taken action. A number of businesses (54 per cent, 101/185) reported an interest in adopting a climate change adaptation plan but have not yet done so. Only 11 per cent (21/185) of businesses responding to the survey have implemented or are in the process of implementing a climate change adaptation plan.
- 2.5 Only 32 per cent (76/241) of businesses surveyed reported assessing risks through a formal risk assessment process. Similarly, although 32 per cent of businesses surveyed reported carrying out a formal risk assessment, only 11 per cent (21/185) reported having put in place a climate change adaptation plan as a result.

Barriers and Drivers for Businesses Assessing and Mitigating Risks

- 2.6 The data collected in this research identifies that the primary barriers to adaptation facing businesses in Wales are insufficient information regarding specific sectoral risks and how higher working temperatures and infrastructure disruption are anticipated to affect specific business sectors in Wales.
- 2.7 Businesses also reported requiring more information about the steps they can take to mitigate risks. This could include how to assess risks, potentially in the context of modelled climate change scenarios, and measures that businesses could take to mitigate the risks. Other barriers identified by businesses included the financial costs of adaptation and having internal capacity to dedicate to drawing up and maintaining a climate change adaptation plan.
- 2.8 Businesses were also asked about who they perceive to have the responsibility for ensuring that businesses in Wales adapt to the effects of climate change. The data collected indicates a perception that businesses have ultimate responsibility for ensuring that they adapt to the effects of climate change. At the same time, businesses recognise a role for Welsh Government in supporting adaptation, particularly around solving information deficits.
- 2.9 It was hypothesised that experience of previous disruption due to extreme heat may be a driver of adaptation. Data collected in this research suggests that in general, businesses do not perceive higher working temperatures and infrastructure disruption as problems that have affected productivity during the last five years. However, the data also suggests that there is a potential relationship between perceptions of these issues previously having affected productivity and businesses assessing risks and introducing adaptation plans. However, there is no evidence that this is a statistically significant relationship.
- 2.10 It appears that individual senior staff are often responsible for driving adaptation within small and medium businesses. Survey responses also suggest that passionate individuals have often been key in driving climate change adaptation efforts forward. For some businesses, there appears to be a link between climate change mitigation and adaptation. Taking action to reduce greenhouse gas emissions has encouraged businesses to do more to reduce the risks they face from the effects of climate change.

- 2.11 In order to encourage other businesses to take heat related climate change adaptation more seriously, examples of businesses which are likely to be opinion formers could potentially be used to demonstrate the benefits of introducing an adaptation plan to other businesses in Wales.

3. Conclusions and Recommendations

- 3.1 The research has identified that while many businesses in Wales are thinking about the ways that climate change may affect them, assessing and mitigating risks due to higher working temperatures and infrastructure disruption is not a pressing priority for many of them. From this, it can be concluded that businesses may need support, primarily around understanding specific risks, and then understanding what measures they can take to reduce the risks, to move towards action on mitigating these risks.

Engaging Businesses with Climate Change Adaptation

- 3.2 The difficulty that businesses found engaging with this issue is potentially another barrier. Businesses are not used to engaging with this area, and there was confusion about the difference between climate change mitigation and climate change adaptation.
- 3.3 Some respondents reported that they had thought about the risks due to climate change but considered their existing risk management strategies sufficient, as they already included heatwaves and infrastructure disruption. This potentially suggests that risk management and business continuity may be, for some businesses, a more effective way of engaging with this issue than approaching it through the lens of climate change adaptation.
- 3.4 Risk and business continuity management may also be a good way of engaging businesses in future research of this nature. The focus on climate change potentially confused some businesses responding to the survey, who it appears were thinking about climate change mitigation rather than adaptation. That is, they were thinking about the actions a business might take to reduce their impact on the climate, rather than the actions a business might take to adapt to climate change, when responding to the survey.
- 3.5 **Recommendation One:** When approaching issues of climate change preparedness, specifically issues surrounding the mitigation of higher temperatures, the Welsh Government may wish to consider reframing the issue. Based on the research carried out in this project, it appears that this is an issue with which businesses in Wales are unfamiliar. For a significant number of businesses, there is confusion surrounding what climate change adaptation is and how it differs from climate change mitigation. For others, they perceive no need to consider specific adaptation activities for threats related to climate change because they consider them to be covered by more general risk management frameworks, which already include factors such as heatwaves and infrastructure disruption. Consequently, it is difficult to engage businesses with this issue when framed as one of climate change adaptation. **Framing the issue as a more general issue of risk preparedness and business continuity may be a more effective way of engaging with businesses in relation to this area.** The disruption due to COVID-19 has forced businesses to think more about business continuity and this might be a successful angle from which to engage businesses after the experience of COVID-19.

Support Needs for Businesses in Wales

- 3.6 Despite some reservations about the possibility of legislation and differing advice from different agencies, businesses see a role for Welsh Government in supporting them to adapt to the effects of climate change. The most pressing support need that could be addressed by Welsh Government is the need for accurate and up-to-date information about the risks of climate change. There is a role for Welsh Government in informing businesses of what the risks are, which could potentially be achieved by providing modelled scenarios outlining specific sector risks.
- 3.7 **Recommendation Two:** The primary climate change adaptation business support need for businesses in Wales appears to be in relation to providing information. The main information deficit appears to be in relation to what the precise risks for specific sectors and regions are. The Welsh Government should consider filling this information deficit by modelling some sector-specific scenarios with which to engage businesses.
- 3.8 As a secondary need, businesses require examples of adaptation plans in order to understand what measures they could put in place to mitigate the effects of climate change. The Welsh Government could potentially explore the model of provision implemented by Adaptation Scotland when developing its own support.
- 3.9 **Recommendation Three:** The Welsh Government should consider working with 'early adopters' to identify how businesses have put strategies in place to assess and mitigate risks due to higher working temperatures and infrastructure disruption. Working with 'early adopters' to identify what their businesses have included in adaptation plans could lead to a series of examples that could be provided to businesses thinking of introducing an adaptation plan.

Report Authors: Tom Marshall & Oliver Allies (Wavehill)



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Available at: <https://gov.wales/business-perceptions-risks-due-heat-related-climate-change>

Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government

For further information please contact:

Isabella Malet-Lambert

Social Research and Information Division

Knowledge and Analytical Services

Welsh Government, Cathays Park

Cardiff, CF10 3NQ

Email: Isabella.Malet-Lambert@gov.wales

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