Data Science for Policy: Independent Project

Are rising energy prices disproportionately affecting disabled people and their families?

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## Intro

The ongoing cost of living crisis affects us all. People from all walks of life are contending with rising food and energy prices. Of those who reported a rising cost of living to the Opinions and Lifestyle Survey (OPN) in January 2022, 79% cited higher gas and electricity bills as a cause. These rising energy prices will likely affect most households in the UK, but those on the lowest incomes are likely to be disproportionately affected as they spend a higher proportion of their income on utility bills and are more likely to be in fuel poverty.

This report attempts to explore the title question by exploring relevant datasets and literature. Will disabled people be disproportionately impacted by the rising costs of living as they are more likely to be unemployed and to have low incomes? The support designed for disabled people to ease the cost of living is an award of £150 in the form of a non-means tested payment. But when energy bills alone cost £300, is £150 a fair amount?

## Methods

**Data Cleaning**

-Reading in and pre-processing multiple datasets, handling multiple sheets and unused rows with pandas, slicing the data to only the required rows and columns, handling null values

**EDA**

-Seaborn barplots, lineplots, Matplotlib subplots to plot insights on multiple categories of same value, Seaborn heatmap to show CPIH annual changes (percentage change over 12 months), SKlearn standard scaler, fit the explanatory variable and normalise the data, customise display and style of the heatmap

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**Model Building and Interpretation**

-Investigated relationship between explanatory and target var using a scatter plot, check the explanatory var for outliers using seaborn box plot, remove outliers using slicing, fit the OLS model using statmodels package, print model summary and evaluate, interpret the fitted regression equation, quality check the residuals of explanatory variable to check the heteroscedasticity (are the values roughly centred around 0?)

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## Summary Report

Studies on disability and energy poverty show that a combination of high energy needs and low-income results in more disabled people struggling or unable to afford adequate energy services. As a result, the disability can often be exacerbated because of inadequate energy resource. (Snell et al., 2015)

Disabled people's experiences of course vary a lot from person to person; disabled people will live very different lifestyles and have different needs. The concept of disability can include a wide range of impairments ranging from autism spectrum conditions, long-term health conditions, mental health conditions, physical or mobility impairments, sensory impairments (for example, deafness and blindness) and learning difficulties (Lockwood et al., 2012)

Despite the differences among disabled people's lifestyles, there are some common trends present that have clear energy implications. Disabled people on average earn less than non-disabled people (Litullo, 2019) which automatically puts them in more risk of being in energy poverty. Many disabled people find it harder to gain employment and education, further impacting on their energy use. People with disabilities tend to have higher health-care expenditure and health needs, yet they are also less likely to access health services and are more likely to have worse health and wellbeing outcomes.

Ofgem has announced an increase in energy price cap by 80 percent from 1st October, leaving average household energy bills hitting £3459 a year. The energy price cap has almost tripled since last October. Disabled people who need to use a lot of energy will be facing up bills which are even higher. These are costs that often times cannot be cut back -- energy for breathing machines, powered wheelchairs, hoists, heating for those who struggle to regulate their body temperate and other necessary energy-hungry uses that are needed to live day-to-day.

Personal Independence Payment (PIP) is the main benefit for disabled people that is meant to help cover extra costs. This has never been enough to cover everything, but PIP is now falling further behind where it needs to be. PIP has increased by 3.1 percent based on inflation rates from September last year, but with inflation predicted to go as high as 11% this year, it's clear that the increase will not be enough to contend with inflation, nor costs of energy -- especially at a time where energy prices are at an all-time high, and are subject to ongoing volatility exacerbated by cost of living crisis and the invasion of Ukraine by Russia. Currently 12-month inflation rates for gas and electricity are at their highest level since early 2009, with gas at 28.1% and electricity at 18.8% (ONS).

According to independent research carried out by disability charity Scope, disabled people face extra costs of £581 a month (as of a report published in 2019). The same report describes how disabled people’s money does not go as far; on average £100 for a non-disabled person is equivalent to £68 for a disabled person (Scope)

## Key Points

* Disabled people will be disproportionately impacted by the rising costs of living as they are more likely to be unemployed and to have low incomes.
* Disabled people spend proportionately more on energy than non-disabled people and are more likely to be in fuel poverty.
* A combination of high energy needs and low-income results in more disabled people struggling or unable to afford adequate energy services
* In the last two years economically inactive disabled people numbers are rising, and employment rates of disabled people is dropping

## Policy Recommendations

* Increase the £150 cost-of-living payment to disabled people to cover extra costs faced by disabled people
* Increase disability payments – at least in line with inflation
* Reform the PIP assessment to accurately capture extra costs faced by disabled people
* Reform core components of the warm home discount to be more effectively targeted at disabled people
* Develop an early intervention fund for families so that emotional support can be provided to the whole family at the point of diagnosis.
* Transition to clean energy should remain high priority as a way of mitigating against the highly volatile energy import market

## References

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