

Discriminatory pricing

Exploring the 'ethnicity
penalty' in the insurance
market



Tilly Cook
Aiden Greenall
Emer Sheehy

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Foreword

James Plunkett, Citizens Advice

New technologies often bring new risks for consumers; there's no shame in that. The question is, how do companies and regulators respond when evidence of harm starts to mount? Do they act with curiosity and try to understand the problem so they can put it right? Or do they go on the defensive, putting off action as long as they can?

At Citizens Advice, we saw both these dynamics play out in response to our work on the loyalty penalty. As the full, multi-billion pound scale of the loyalty penalty became clear, some industries and regulators acted quickly to assess the problem and to put things right. Others dragged their heels, and consumers in those sectors paid the price.

In this new theme of work, we're turning our attention to an injustice that demands an even more urgent response: is pricing discriminatory? Are people with protected characteristics - such as disability, gender, sexuality or ethnicity - being charged more for essential services?

In this report, we focus on insurance and ethnicity, and the simple answer is 'yes'. Our analysis finds a large 'ethnicity penalty', meaning that people of colour pay more for insurance than white people in ways that don't seem to be explained by other factors.

So now comes the test: how will industry and the regulator respond? Discriminatory pricing is a complicated issue, and it would be easy for firms to buy time by hiding behind the opacity of their algorithms. But if there's one thing we learned from the loyalty penalty, it's that consumer injustices like this don't just go away.

Insurance companies and the regulator in question, the Financial Conduct Authority, should see this as an opportunity to act early, detailing the steps they will take to remove any risk of discrimination in the pricing models used in insurance. In the case of discrimination more than perhaps any other area of policy, decisive action cannot wait.

John Spicer, Europe Economics

Over the last year, we have worked with Citizens Advice to conduct a detailed literature review and a robust mystery shopping exercise to investigate the extent to which the use of data in consumer markets leads to discrimination. Citizens Advice wanted to understand whether the use of data leads to consumer outcomes varying on the basis of protected characteristics.

We conducted a comprehensive literature review, exploring empirical evidence across a range of sectors and products, exploring whether people with protected characteristics experienced worse outcomes than others, and the role algorithms, processes or practices play in generating these outcomes. The literature identifies various outcomes consistent with the presence of discrimination based on race, ethnicity and national origin.

Based on these findings, we designed mystery shopping to focus on the impact of ethnicity on pricing in the insurance market. Primary data was collected for insurance products, using different postcodes selected to represent areas with different ethnic compositions, and names that are more prevalent in some ethnicities than others. Overall, we found that personas with names signifying different ethnic backgrounds received similar quotes when holding the persona, address and insurance product characteristics constant. We found measured differences between average premiums quoted in the postcodes with a significant Black or South Asian population, and the postcodes with a large White population. Differences in measures of deprivation or crime rates could not account for all of the measured differences.

This result is consistent with findings reported from the literature we considered prior to conducting our research, of a strong correlation between higher ethnic share of a population in a postcode area and higher premiums.

Executive summary

Insurance is an essential financial product that gives consumers protection when things go wrong. If you're in a car accident, having insurance helps you weather the financial shock. You're also legally required to make sure you have insured your car before driving it in the UK.

In theory, insurance pricing is set relative to the risk a customer presents to the insurance provider and these prices are kept fair through competition. But how fair individual prices are in practice is not always clear. Research by a range of organisations, including Which? and Fair By Design, have found evidence of unequal outcomes for people with protected characteristics in insurance markets in recent years. As markets evolve and the use of 'big data' and algorithms in setting prices become more prevalent, there is a risk that these inequalities are perpetuated and amplified.

Over the last year, Citizens Advice has conducted exploratory research to understand these issues in more depth. We wanted to establish whether people of colour experience worse outcomes in the car insurance market than White consumers. Our research had two elements:

- Mystery shopping of major insurers to test:
 - Prices paid by shoppers with names that are common among people from different ethnic backgrounds
 - Prices paid by shoppers living in areas with different proportions of ethnic minority communities in the population
- Analysis of data from people Citizens Advice helps with debt, to measure differences in expenditure between people of colour and White people

Our results are concerning. Our mystery shopping did not find any statistically significant differences in prices paid by customers with different names. But we did find significant price differences between customers living in different areas. In all the areas we tested with a high proportion of Black and South Asian people in the population, customers were quoted **at least £280 more for car insurance**, compared to areas where the population is largely White. Our analysis of over 18,000 people who came to us for support with debt in 2021 found that **people of colour report spending on average £250 more than White people** for car insurance. The similarity between the findings across

both elements of our research indicates a worrying trend between ethnicity and price. We've termed the correlation we found **the 'ethnicity penalty'** in the car insurance market.

Insurers use a huge amount of data to calculate the potential risk of a customer. Our analysis of expenditure data from people we help with debt looked at personal characteristics, and found that people of colour spent more on car insurance, even when we controlled for gender, age, and income.¹ We also looked at some **common geographical risk factors** through our mystery shopping, such as crime rate in an area, and found these **could not account** for the difference in price found.

Overall, the areas we analysed with largely White populations received very similar average quotes, regardless of other factors tested. All of these quotes were significantly lower than the areas we analysed with large populations of Black and South Asian people. **In some areas the difference in price was more than 100%**. For example, we found that the average quote in a relatively low crime area, where the population were largely Black or South Asian, was over double the average quote in an area with a much higher crime rate but a largely White population. We're concerned that this suggests that **areas with large communities of colour may be identified as more risky**, even when objective risk factors are controlled. We need to understand what is driving the ethnicity penalty if differences in price cannot be explained by common risk factors.

This is so important because, if our results were consistent across the country, people of colour would be paying significantly more for car insurance than White people. We estimate that over 1 in 4 people of colour live in areas that could be impacted by the ethnicity penalty, compared to just 1 in 50 White people. If all of these people of colour paid an average of £280 more for car insurance, this would equate to a **total ethnicity penalty of £213 million per year**.

Insurance pricing calculations are complex and opaque, which can make it difficult to know if consumers are getting a fair deal, if some groups

¹ The median annual income for people we help with debt is £16,200 in comparison to a population average of £29,900.

consistently pay more than others, and whether this is fair based on their level of risk. While insurance companies are clear that they don't collect data on the ethnicity of their customers, the correlations identified in our research are worrying. Without access to data held by insurance companies it is impossible to definitively identify what is driving this trend, and whether prices charged are proportionate to the risk presented to an insurer. However, we are concerned that the opaque pricing algorithms used by insurance companies - which rely on a wide range of data, including historic claims costs - could be reflecting and perpetuating human biases or wider inequalities caused by systemic racism.

Recommendations

Regulators have a responsibility to ensure that markets work well for all consumers. In practice this means that people of colour should not consistently experience worse outcomes in the car insurance market than White people. To address this, the Financial Conduct Authority (FCA) should take the following actions in the market:

- 1. Publish a public statement setting their expectations** for how firms should demonstrate that their pricing practices comply with the Equality Act (2010) and their obligations under fair pricing regulations, and what action will be taken against firms who fail to meet these standards.
- 2. Require firms to audit and monitor pricing outcomes to identify any racial disparities**, to cross-check permitted data for correlations with protected characteristics, and report these findings to the FCA.
- 3. Conduct work to measure any correlations between profit margins and the racial composition of geographic areas** that could result from pricing algorithms.²
- 4. Take enforcement action against firms found to be in breach** of their obligations, or failing to effectively explain why their pricing models have delivered differential outcomes.
- 5. Assess and build capability for effective oversight and monitoring of algorithmic decision making**, to future-proof their

² Potential work to study these correlations was included in the FCA's [General insurance pricing practices market study: feedback to CP20/19 and final rules](#), May 2021.

regulatory approach as the prevalence of big data and machine learning lead to ever more personalised pricing.

If this work also identifies an ethnicity penalty in the market, the FCA must take urgent action to fix the market so that it is fair for people of colour.

A note on definitions

Throughout this report we refer to 'people of colour' when describing both the minoritised communities we help with debt (which includes people of mixed heritage, Black people and Asian people), and the overall impact of the ethnicity penalty, which we estimate affects areas with higher proportions of people of colour in the population.

We refer to 'Black' and 'South Asian' specifically when describing the results of our mystery shopping exercise, which used postcodes selected on the basis of the proportion of Black and South Asian people in the population.

Timeline of research

Our research follows a range of investigations looking at unequal outcomes in the insurance market. Our research builds on these studies to explore the scale of the problem, and to assess which factors are driving price differences.

November 2015: Consumer Federation of America finds that price of auto insurance offered to drivers increases where the proportion of African Americans living in a community increases

September 2016: Which? questions insurers' compliance with the Equality Act after finding motorists who were born overseas being charged higher premiums

February 2018: BBC You and Yours investigation also finds higher prices offered to people with names common among people from minority ethnic backgrounds

November 2020: Centre for Data Ethics and Innovation publishes review into bias in algorithmic decision-making, which included a case study on bias in insurance algorithms

July 2016: Research by Webber Phillips finds area-based ethnicity penalty in the UK, affecting 12 million people ³

April 2017: ProPublica investigation shows that major insurers charge people in minority neighbourhoods as much as 30% more than people with similar accident costs in majority-White neighbourhoods

October 2018: FCA thematic review of household insurance pricing identifies risk of firms discriminating by using rating factors based on data relating to protected characteristics

September 2021: Fair By Design highlight the impact of the poverty premium in insurance, which is more likely to affect people with protected characteristics

³ The research by Webber Phillips found an area-based ethnicity penalty for motor insurance customers in the UK. Postcode ethnicity was based on the proportion of resident individuals with 'a name indicating a non-Western European background'. These findings have been disputed by the insurance industry.

Introduction

The price we pay for goods and services is often a lot more complex than just how much it costs to make or deliver a product. Price can fluctuate based on a wide range of factors, from supply and demand to assessments made by companies about what we are willing to pay.

Pricing of insurance products is especially complex. Insurers set premium rates based on a detailed assessment of a customer's 'risk'. They analyse a huge amount of data to predict how likely a potential customer is to make a claim, and offer a higher price to those they consider more 'risky'. Advances in technology and the growth of 'big data' gives insurers vast amounts of information on which to base these pricing decisions.

Despite this focus on creating an individual price for each customer, there is evidence that some groups are likely to pay more for insurance than others. [Previous research](#) has indicated that people of colour could be experiencing worse outcomes - including higher prices - in insurance markets than White consumers.

However, the complexity of insurance pricing makes it very difficult for individual consumers to know if they have been offered a fair price. It's also difficult to establish if some groups routinely pay higher prices than others, whether this is fair based on their level of risk, and how this interacts with protections under equalities legislation. Insurers don't normally provide customers with much information about why they have been offered a certain price, and they don't publish data showing the prices offered to different groups.

We wanted to explore whether people of colour are consistently charged higher prices than White people for car insurance, so we conducted two pieces of research:

- Mystery shopping of major insurers to test:
 - Prices paid by shoppers with names that are common among people from different ethnic backgrounds
 - Prices paid by shoppers living in postcode areas with different proportions of ethnic minority communities in the population

- Analysis of data from over 18,000 people Citizens Advice has helped with debt, to measure differences in expenditure between people of colour and White people

Our results did not show any significant difference in prices charged to people with different names in the same postcode area. However, we did find average quotes were higher in areas where Black or South Asian people make up a large proportion of the population. While there are statistical reasons that some areas are more risky than others, common risk factors such as crime rates, road accidents or levels of deprivation in the area could not account for our findings. We also found that people of colour who came to us for debt advice paid more on average for insurance than White people.

Our research was exploratory, and therefore cannot definitively identify what is driving this trend. But throughout this report we explore a number of issues, including the complexity of insurance pricing, the opaque nature of algorithmic pricing, and the broader context of systemic racism in the UK, that help us to understand the ethnicity penalty, and how it could be addressed by regulators and the insurance industry.

Research methodology

We conducted two pieces of exploratory research to understand whether people of colour are charged more for insurance than White people. Currently there are no audits of insurance outcomes data, nor do insurance firms have to release data on outcomes. In the absence of outcomes data, we used mystery shopping to generate quotes for insurance products from the most commonly used insurance providers.⁴ We also carried out detailed analysis of data from the people we help with debt to investigate their annual insurance expenditure.

Part 1: Mystery Shopping

Working with the research agency Europe Economics, we conducted extensive mystery shopping in the car insurance market. We conducted 649 mystery shops using personas that varied by both name and postcode. Name and postcode were used to proxy for the ethnicity of a customer.⁵ All other personal details including age, gender, marital status and job type remained the same.⁶

Combination of characteristics used to generate mystery shops			
White postcodes	White names	Black names	South Asian names
Black postcodes	White names	Black names	South Asian names
South Asian postcodes	White names	Black names	South Asian names

We tested each combination of these characteristics, to establish whether name or postcode had an impact on price. In this way, we were able to test both whether people with the same name received different quotes when living in different areas, and whether people with different names received different quotes from others living in the same area.

Aside from the specific data points tested, we wanted to recreate as far as possible a typical interaction between insurer and customer. We therefore chose to mystery shop insurance companies with the largest market share in

⁴ The [Competition and Markets Authority](#) (CMA) has suggested mystery shopping as an appropriate technique for investigating potential harm caused by algorithmic bias.

⁵ Further detail on name and postcode selection can be found below.

⁶ Data used to generate personas can be found in Annex 3.

the UK, and to generate quotes for the two most popular models of car in the UK in 2021.

Product	Number of mystery shops	Insurance providers
Fully comprehensive cover Vauxhall Corsa	649	Admiral, Directline, LV ⁸
Fully comprehensive cover Ford Focus ⁷		

We captured quotes directly from insurance providers rather than via price comparison websites to avoid measuring any potential biases introduced on these platforms, such as the impact of ‘choice architecture’.⁹

Names

Previous research by BBC You and Yours indicated that using names typically associated with certain ethnicities had an impact on the quoted price of insurance.¹⁰ Our mystery shopping exercise sought to test this by using first and last names that are commonly held by certain ethnic groups.¹¹

Ethnicity	Car insurance
Black African (Ghanaian)	Kwame Owusu Anthony Olukayude
South Asian (Indian)	Rajesh Singh Sukjunder Singh
White (British)	David Taylor Andrew Clarke

⁷ The cars selected are within the 5 the most commonly owned vehicles in the UK.

⁸ The insurance companies selected are among those with the largest market share in the UK for car insurance.

⁹ Choice architecture refers to the different ways that choices, in this case insurance quotes, can be presented to consumers. Choice architecture is often designed to have an impact on consumer decision making.

¹⁰ The BBC compared quotes received from price comparison websites using the name of a white British BBC producer, and the name Muhammad Khan.

¹¹ Names were provided by University College London (UCL) and were drawn from consumer sources and assembled by the Consumer Data Research Centre (CDRC). These were supplemented with names identified by Natcen.

Postcodes

We used 8 postcodes from across England, each representing areas with different ethnic compositions. We used ethnicity information based on the 2011 census to determine the ethnic composition of each postcode.

'Ethnicity' of postcode	Average proportion of ethnicity in postcode population	Average proportion of people of colour in postcode population
Black	Over 35%	Over 60%
South Asian	Over 65%	Over 90%
White	Over 85%	Less than 10%

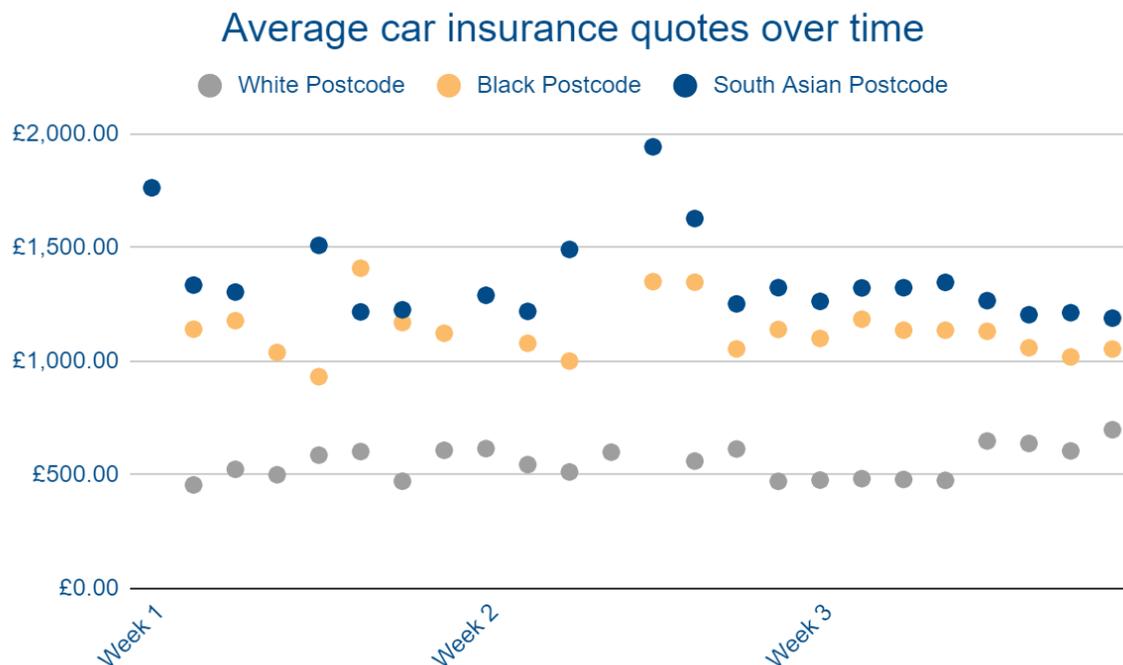
We set thresholds for defining a postcode as having a significant population of Black, South Asian or White residents based on the underlying demographic composition of the UK. All postcodes used for the Black or South Asian personas were areas where people of colour were in the majority (over 50% of the population).

In addition to ethnicity, postcodes were selected to control for a number of factors that were likely to have an impact on price, including area type - we used urban postcodes only. We also analysed the impact of a number of other geographic factors including population density, vehicle flow, parking location and crime rate.

Challenges

The challenges we experienced when conducting the mystery shopping exercise provide an insight into some of the complexities of insurance pricing practices. Insurers use sophisticated fraud detection tools which are likely to assess a range of factors, including the number of quotes attempted in a given time period. After a certain number of shops, some personas began to receive rejections when generating quotes. The threshold for rejection varied between 6 and 33 shops. Given this complication, we amended our approach to ensure we were able to continue generating quotes, without impacting the accuracy of our results. In practice this meant adopting three additional first and last names, using a range of number plates and altering the date of birth for some

personas. We used the same method to select the names and ensured that the number plates continued to refer to the same car model.



In order to mitigate the risk associated with these changes we reviewed the data collected to check for any changes in price at the point where the characteristics were changed. We plotted the quotes we received over time to understand the impact that our method had on results.

While there was some variation in the quotes received over time - largely between the quotes generated for the Black and South Asian postcodes - there is no obvious upward trend. This suggests that, while we cannot definitively know the impact anti-fraud mechanisms had, our results have not been significantly influenced by insurers' fraud detection systems.

Limitations

Mystery shopping for insurance products comes with some limitations. Our research allowed us to test the outcomes of pricing mechanisms, but cannot explain why the outcomes we identified occurred. Our findings are based on the use of personas, so it is possible the figures could differ from a genuine quote based on more data about a consumer. For example, the Financial Ombudsman Service did not uphold a complaint regarding potential unfair treatment on the basis of race in the building and contents insurance market, as the complaint was lodged by a customer who had received a lower quote

when using a pseudonym.¹² The Ombudsman determined that access to accurate credit information was the cause of the price difference, rather than a change to the name.

This element of the study design may have influenced the price of the quotes generated by the exercise, however, as we used artificial personas for all the mystery shops, it is unlikely to have affected the **disparities between** personas with different characteristics, which is the outcome of interest. When calculating population level figures for the ethnicity penalty, we have used the lowest difference in price identified through the mystery shopping exercise, to ensure the most conservative estimate of the total cost.¹³

Part 2: Detailed budget analysis

We analysed expenditure data from people who came to Citizens Advice for help with debt in 2021.¹⁴ Our sample included 18,000 people who paid for car insurance. This dataset allowed us to analyse expenditure broken down by ethnicity, to compare prices paid by White people to prices paid by people of colour. The people we help with debt largely mirror population level ethnicity data, with Black people slightly over represented in our sample and Asian people slightly under represented.

Ethnicity	UK Population	People we help with debt
Asian	7.5%	4.7%
Black	3.3%	6.6%
Mixed	2.2%	2.2%
White	86.0%	86.0%

The median annual income for people we help with debt is £16,200, in comparison to a population average of £29,900.¹⁵ This allowed us to assess differences in prices paid by people on low incomes, but these results may not be representative of the overall population.

¹² Financial Ombudsman, [Decision Reference DRN-2181355](#), January 2021.

¹³ Detailed explanations of all calculations can be found in Annex 1.

¹⁴ People who came to Citizens Advice for debt advice and had a Standard Financial Assessment (SFS) completed for them by a debt adviser.

¹⁵ Office for National Statistics (ONS), [Average household income, UK: financial year 2020, 2021](#).

We conducted regression analysis on this data to understand whether the relationship between ethnicity and cost persisted when we controlled for other factors like age, income, gender and disability.

Limitations

The budget data captured by debt advisers provides a detailed picture of annual spending across a significant sample size. However, it does not provide any detail on the nature of the insurance products purchased. As a result it may be that some people are, for example, insuring multiple vehicles or opting for a higher level of coverage. However, there is no evidence to suggest that people of colour are more likely to choose more expensive or sophisticated insurance products than White people, and we are confident that the finding of interest, that there is a disparity between people of different ethnicities, is not biased by the absence of this data. When extracting raw figures from our data we have used conservative estimates favouring median and minimum values, to avoid our results being skewed by individual people with very high levels of coverage.

What we found

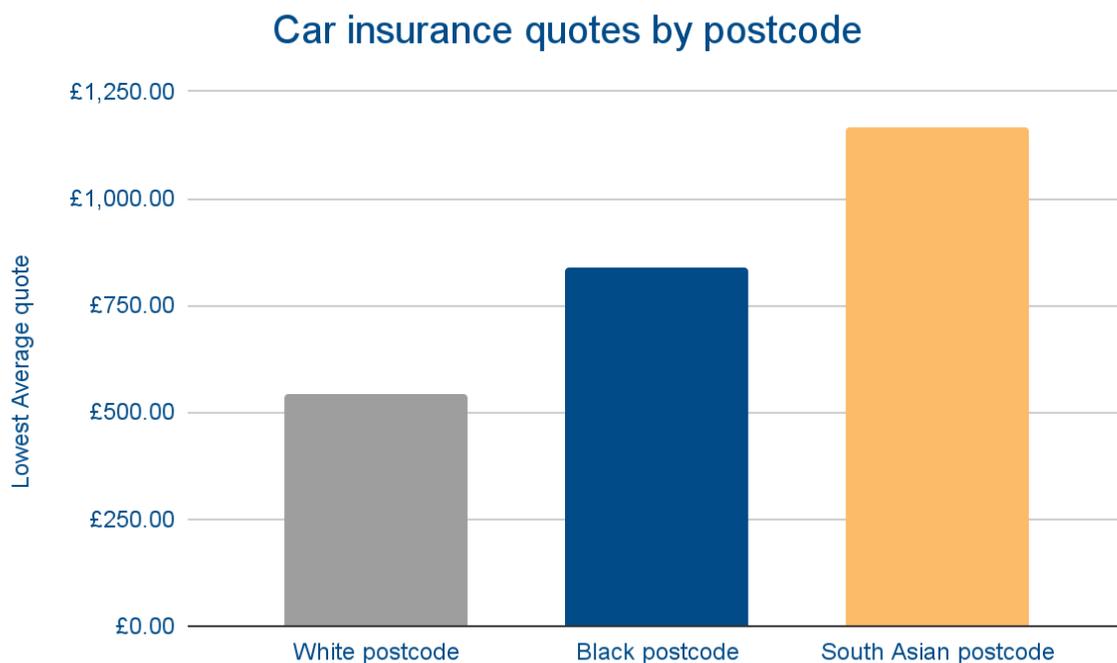
We have identified a correlation between car insurance prices and ethnicity. Our research found higher car insurance costs for people of colour we help with debt, and higher quotes in areas with large Black and South Asian

populations, compared to White people. We have termed this relationship the 'ethnicity penalty'.

Mystery shopping

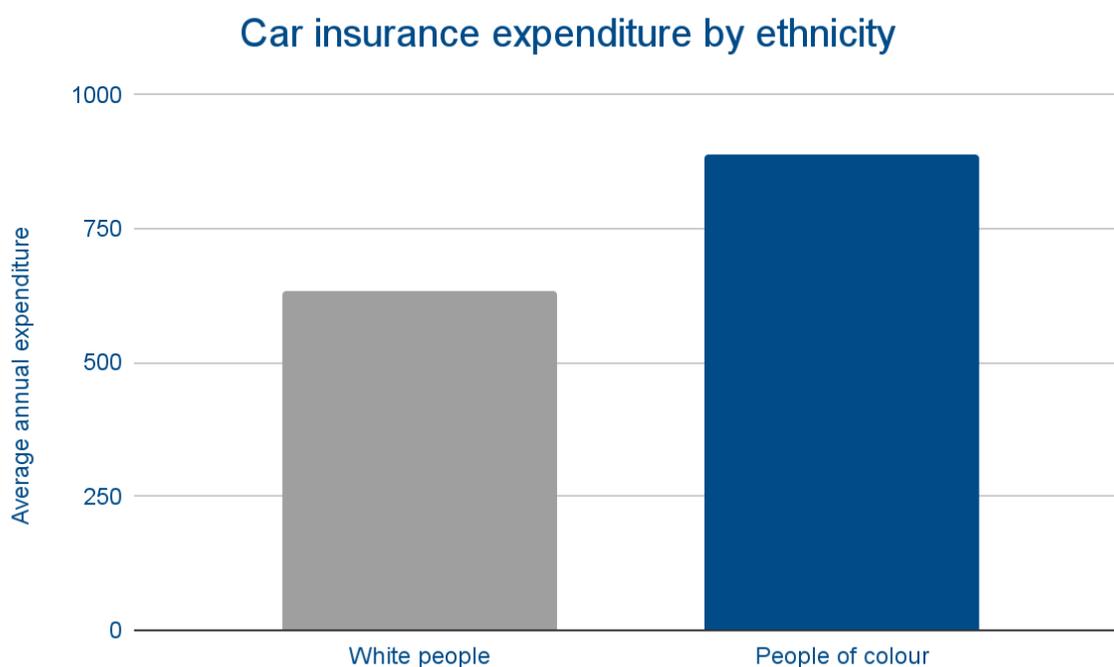
Our mystery shopping research identified that quotes in areas with large proportions of Black or South Asian people in the population were at least £280 higher than quotes in largely White postcodes. This amounts to about 34% of total car insurance costs for people affected. We found that the ethnicity penalty varied from £280 a year in some areas, to over £600 in others, and up to £950 in some places.

In postcodes with largely White populations, the lowest average quote received was £542. This rose in postcodes with around two thirds people of colour, where the lowest average quote offered was £837. In postcodes with more than 85% people of colour the lowest average quote was £1,166; 115% higher than in largely White postcodes.



People we help with debt

We analysed data from over 18,000 people who came to Citizens Advice for help with debt to find out how much they spent on car insurance.¹⁶ Overall, people of colour report spending £250 more per year on car insurance than White people. We conducted a regression analysis and found that this trend held when we controlled for the person's gender, age, income, or whether they considered themselves to be disabled.



People of colour spend an average of £887 per year on car insurance, compared to £633 spent by White people. People we help with debt have an average annual income of £16,200, compared to a national average of £29,000.¹⁷ For the people of colour we help with debt, this could mean spending 5% of their average annual income on car insurance.¹⁸

We also observed differences in spending between different ethnicities. For example, Black people report the highest car insurance costs, spending an average of £919, which is 45% higher than White people. People from Asian

¹⁶ Every person who comes to Citizens Advice for specialist debt advice has a detailed budget completed for them by an adviser, covering all their income and expenditure. This is known as a Standard Financial Assessment (SFS).

¹⁷ ONS, [Average household income, UK: financial year 2020, 2021](#).

¹⁸ On average, people of colour who come to us for help with debt have an annual income of £16,200.

backgrounds report spending £876 on car insurance on average, which is 38% higher than the average for White people.

In the context of the coronavirus pandemic and the rising cost of living, it seems that many of the households paying the ethnicity penalty could be those least able to afford it. In summer 2021, 42% of people of colour reported that they had lost income as a result of the pandemic, compared to 26% of White people.¹⁹

Geographic penalty

We used six different names over the course of the mystery shopping exercise, none of which had a noticeable impact on the prices being quoted. This suggests that this penalty is paid by everyone who lives in an area, regardless of their ethnicity. However, people of colour are far more likely to pay it.

Over 1 in 4 people of colour live in areas we estimate to be impacted by the ethnicity penalty, compared to 1 in 50 - just 2% of - White people.²⁰ This means people of colour are over 13 times more likely to be paying a high price for insurance. If every person of colour living in an impacted area paid £280 more for car insurance, the total ethnicity penalty would amount to £213 million per year.²¹

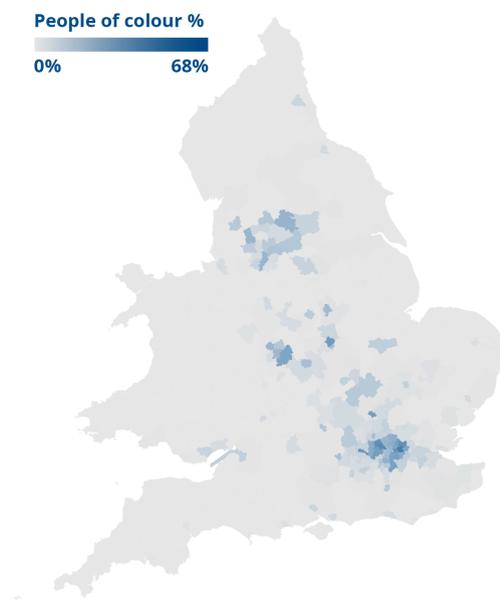
We also looked more broadly at the population distribution of people of different ethnic backgrounds across England and Wales, and compared that with the average expenditure of people we help with debt in each area. We can see a clear correlation between areas with a high proportion of people of colour in the population, and higher car insurance expenditure.

¹⁹ ICM Unlimited, on behalf of Citizens Advice, surveyed a representative sample of 6,012 UK adults. Fieldwork was conducted between 15 July and 2 August 2021.

²⁰ Based on the findings of our research we have defined areas impacted by the ethnicity penalty as those with 53% or more people of colour in the population. Other studies have found evidence of the ethnicity penalty in a much broader range of areas, including those with 20% or more people of colour in the population. As such, our findings represent a conservative estimate of the impact of differential insurance pricing on people of colour.

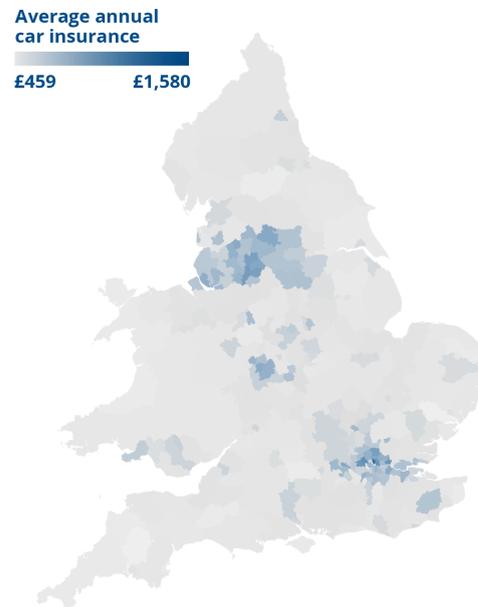
²¹ See Annex 1 for calculations.

Population of England and Wales by ethnicity



Results are based on ethnicity data from the 2011 census.

Average expenditure on car insurance for people who came to Citizens Advice for debt advice

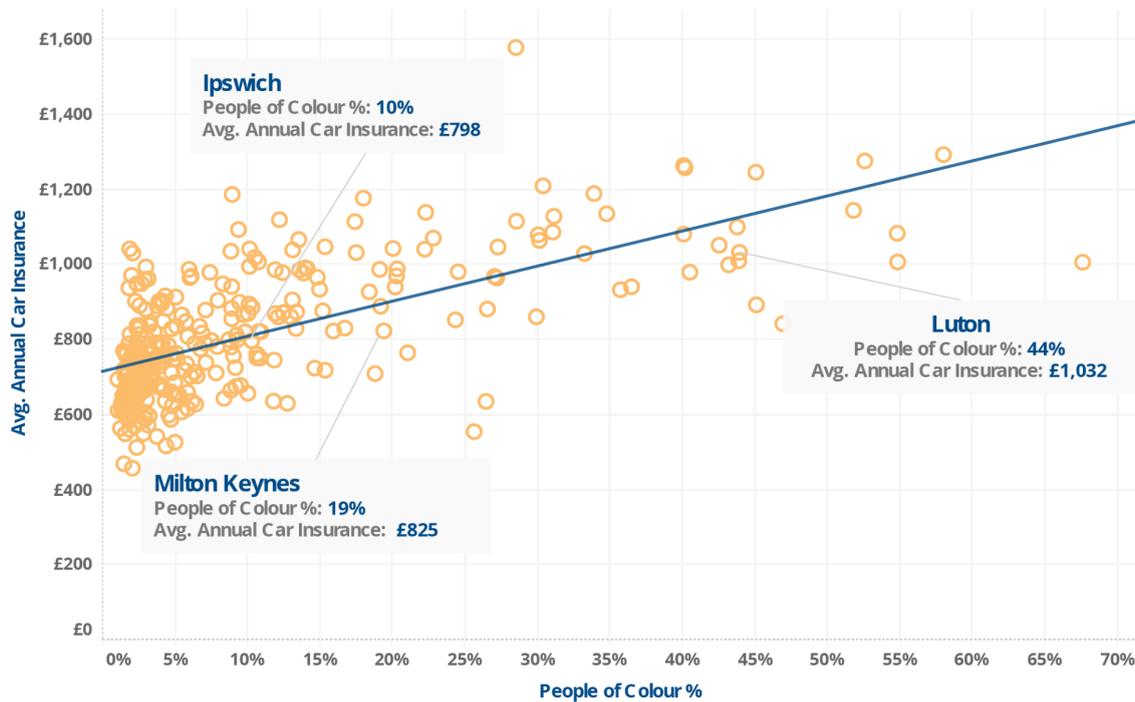


Results are based on a sample size of 25,140 people who came to Citizens Advice for debt advice in 2021.²²

This pattern also largely reflects the location of England and Wales' urban areas, where the majority of people of colour live. However, our mystery shopping exercise looked just at urban areas, and found that urban areas with larger proportions of people of colour received higher quotes than urban areas with White populations.

When we compare the proportion of people of colour in an area directly to the average price paid by people we help with debt in that area, we can see a clear, positive correlation. This indicates that the higher the proportion of people of colour in an area, the higher the average spend on car insurance is likely to be.

²² 25,140 represents the total number of debt clients with expenditure on car insurance. Unlike the sample used for regression analysis (18,000), this sample has not been filtered by household income, age, and gender.

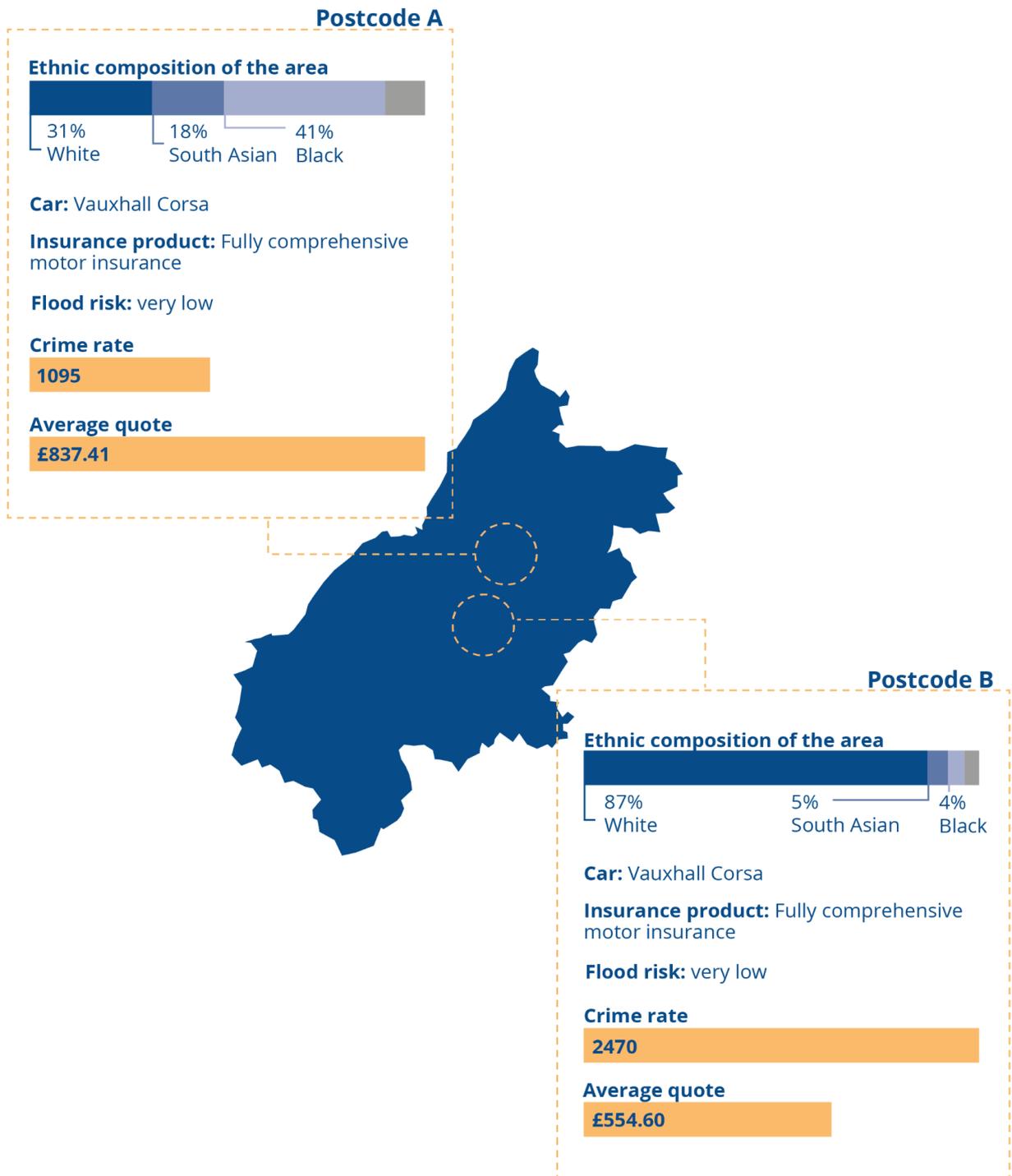


Results are based on a sample size of 25,140 people coming to Citizens Advice for debt advice in 2021.

When we look closely at specific geographic areas, we can also see differences based on the ethnicity of the population. Our mystery shopping looked at two postcodes in Bristol, and found the area with a population of 44% Black people and 18% South Asian people, received an average quote of over £280 more than a postcode less than 2 miles away, where the population is 87% White. This is despite the White area having a higher relative crime rate.²³

²³ Crime rates were calculated using 3-year average reported crimes by postcode using [publicly available](#) crime statistics, accessed 2021.

Example mystery shop in Bristol



Risk factors

Given the significant difference in prices identified in our mystery shopping exercise, we wanted to interrogate whether other factors could be driving the results. Many factors impact insurance premiums, and some of these are geographical, such as deprivation, or crime rate. For example, research by the University of Bristol found that people living in a deprived area paid an area-based premium for their car insurance in 2019.²⁴ This is likely in part due to evidence that the risk of being a victim of a household crime for those living in the most deprived areas is higher (19%), compared to those in the least deprived areas in England (14%).²⁵

To explore whether these, or other factors, could be driving our findings, we looked at the relationship between each factor and the average quotes received in each area. Interestingly, across our sample the car insurance quotes in largely White postcodes remained very similar, regardless of the factors we tested. This is most striking when we look at factors like road accidents. Within our sample, one largely White postcode with over double the number of road accidents of another White postcode, received an almost identical quote. Conversely, the postcodes we categorised as Black and South Asian seemed to have a clearer - although not linear - relationship with the risk factors tested. The complexity of insurance risk rating means it is difficult to establish whether this trend is a result of factors we were unable to test, or whether areas with large communities of colour are considered more risky than White areas.

Crime rate

We used police data to calculate the 3-year average crime rate for each postcode, and categorised them into comparatively high, medium and low crime postcodes.²⁶

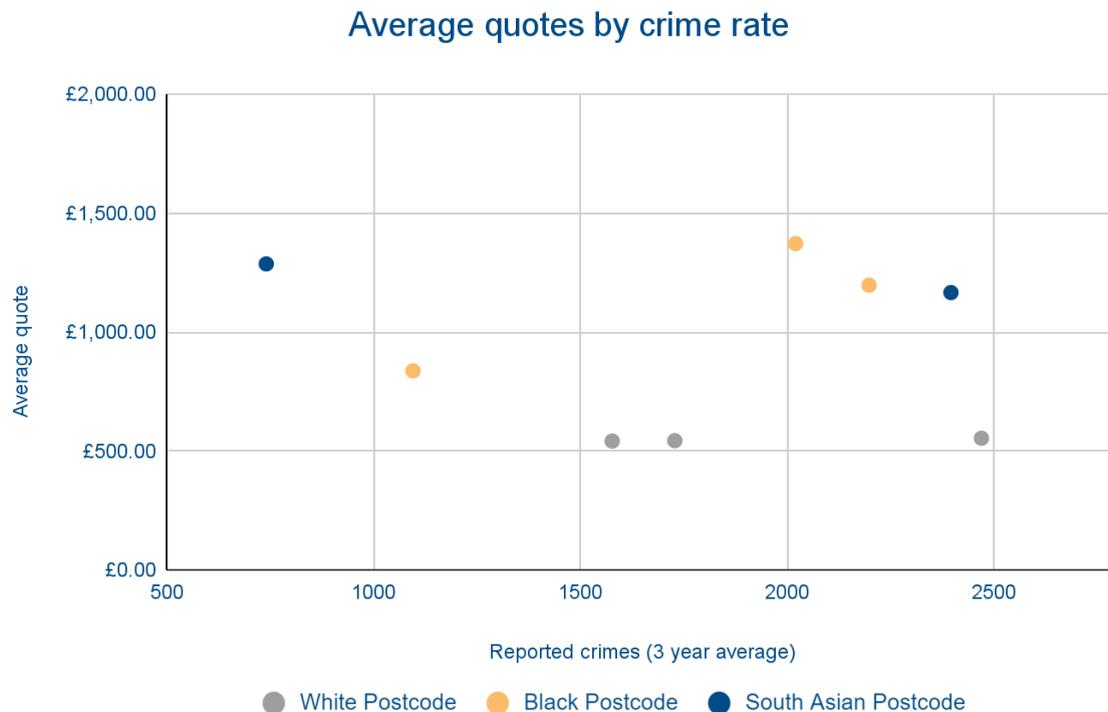
As we expected, postcodes in the relatively low crime group received lower average quotes compared to postcodes in the medium and high crime groups. But when we dig deeper the results aren't as simple. The average quote for the postcodes with largely White populations were roughly equal, regardless of the

²⁴ IFoA and FBD, [The hidden risks of being poor: the poverty premium in insurance](#), 2021.

²⁵ Social Market Foundation (SMF), [Why are low income consumers paying for the cost of crime?](#), 2019.

²⁶ Crime rates were calculated using [publicly available](#) crime statistics, accessed 2021.

crime rate in the area. In fact, one of the lowest quotes we received was for a postcode with a largely White population, with the highest crime rate across the whole sample.



Results are based on a sample size of 649 quotes. Source: Proinsight.

This indicates that while the rate of crime in an area clearly has an impact on the quote offered, it doesn't account for the differences we see across postcodes with large communities of colour. The postcode with the lowest crime rate across our sample received a higher average premium than all but two other postcodes. The population in this postcode is 90% South Asian.

With our sample size it's not possible to draw the conclusion that crime rate impacts the risk rating of all postcodes with large communities of colour more than in postcodes with largely White populations, but we can see a complex picture. The differences in price we've identified cannot be fully explained by relatively high crime rates in areas with large communities of colour.

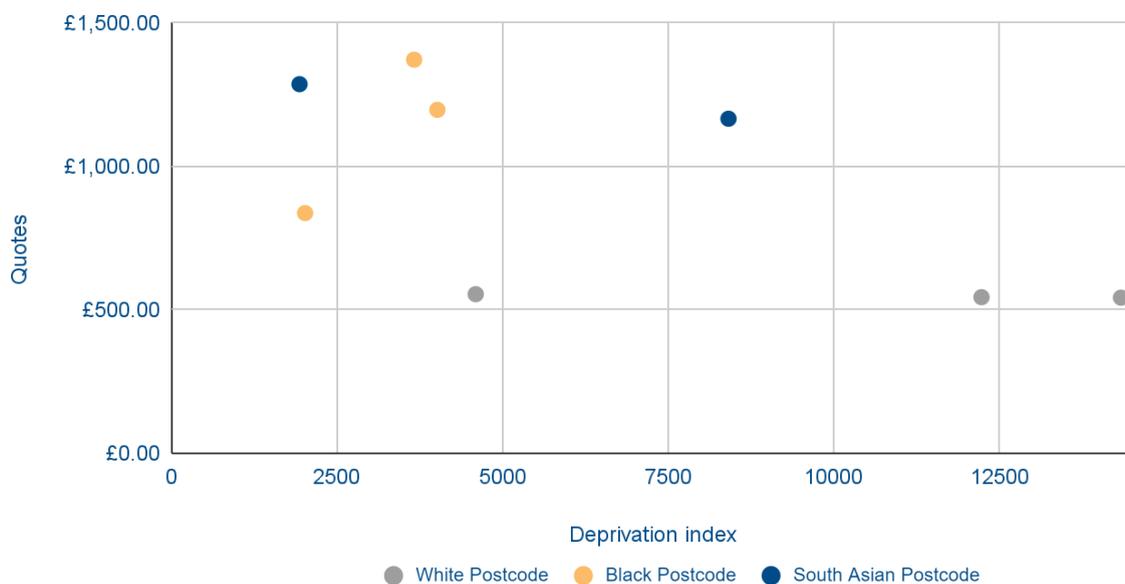
Deprivation and population density

We also looked at how densely populated an area was, and the levels of deprivation in the area. As when we looked at car insurance, we didn't find a simple trend.

Areas with relatively low levels of deprivation received a lower average quote than those with medium and high levels of deprivation. This relationship has a particular impact on people of colour. Research by the Institute and Faculty of Actuaries and Fair By Design has found that Bangladeshi, Pakistani and Black people are disproportionately likely to live in deprived areas, and therefore be impacted by area-based premiums.²⁷ This also plays out in our research - overall there were lower levels of deprivation in the postcodes with largely White populations than in the postcodes where the majority of the population are people of colour. Population density follows a similar trend; postcodes with largely White populations had lower population density than postcodes where the majority of the population are people of colour.²⁸

But the lower prices quoted for areas with largely White populations can't be explained solely by these differences. The average prices quoted for the three largely White postcodes were broadly similar, despite significant differences in the level of deprivation and population density in those areas.

Average quotes by index of deprivation

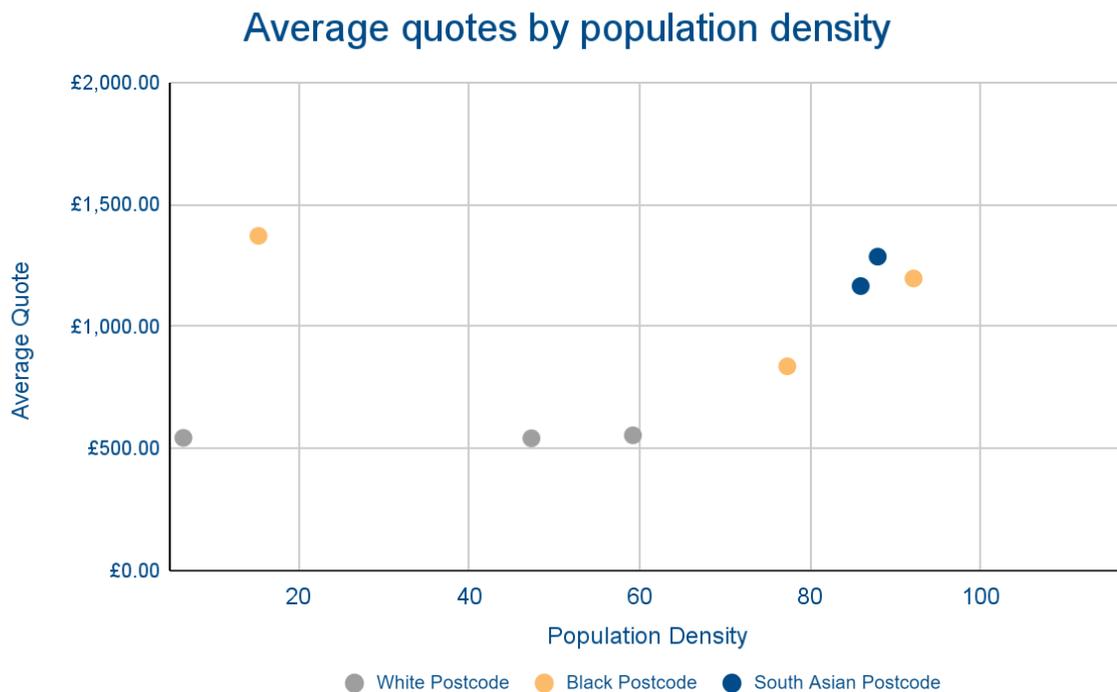


And when we compare directly, one South Asian postcode with a relatively low level of deprivation received an average quote of £1,166; over double the price quoted in a White postcode which is more deprived (£554).

²⁷ IFoA and FBD, [The hidden risks of being poor: the poverty premium in insurance](#), 2021.

²⁸ Population density refers to the number of persons per hectare in each postcode.

Further, the highest quote we received was in an area with the second lowest population density in our sample.

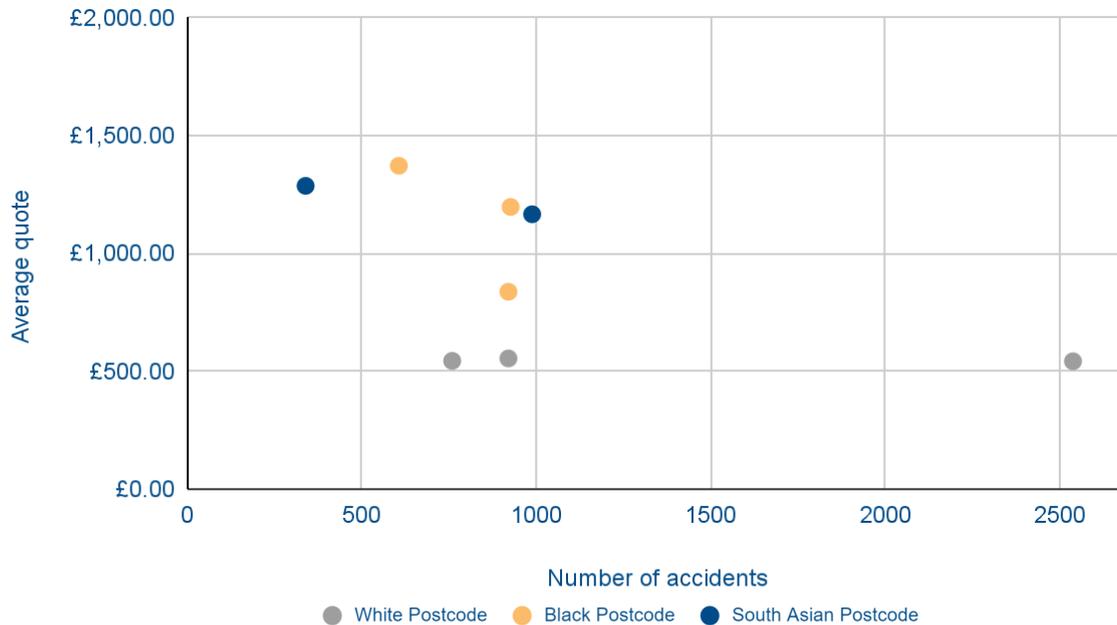


Results are based on a sample size of 649 quotes. Source: Proinsight.

Road accidents

Insurance companies use data about the number of road traffic accidents in an area to predict the likelihood of an individual having an accident and needing to make a claim. Common sense would suggest that the more accidents that take place in an area, the higher the average insurance premium. Interestingly, the postcodes we tested did not follow this pattern. Instead, we found that postcodes with a very similar 3-year average of traffic accidents received very different quotes depending on the proportion of different ethnicities in the population.

Average quotes by road accidents



Results are based on a sample size of 649 quotes. Source: Proinsight.

In our sample, 4 of the postcodes had an average of between 920 - 990 traffic accidents over the last 3 years. Of these postcodes, 3 had large populations of Black or South Asian people, and received average quotes ranging from £837 to £1197. The corresponding postcode with a largely White population received an average quote of £555. On top of this, the postcode with the highest number of road accidents in the last 3 years in our sample - a White largely postcode - received the lowest average quote (£542).

Other factors we tested included traffic density, including both vehicle kilometres and vehicle flow.²⁹ Again, we found that while each of these factors had some impact, the postcodes with largely White populations received consistently lower average quotes, regardless of the factor being tested.

None of these factors can be understood in isolation, and insurance prices are not calculated based on one individual risk factor. But our findings show a clear relationship between people of colour in a population and the average prices quoted, which cannot be accounted for by typical or expected risk factors.

²⁹ Data collected on traffic density can be found in Annex 2.

Why is this happening?

Our research has identified a worrying correlation between ethnicity and price in the car insurance market. The ethnicity penalty means people of colour are disproportionately impacted by higher insurance prices. But what causes the ethnicity penalty?

Insurance firms' ability to set prices accurately is seen as fundamental to their success, so pricing practices are closely guarded, and their complexity means it's difficult to unpick precisely how decisions are made. Despite this, we've identified 3 areas we think are key to understanding and explaining the ethnicity penalty.

1. Insurance pricing

The founding concept of insurance is the pooling of risk; consumers pay a premium each year in return for a payout when they need it. However, over time pricing in the insurance market has moved away from pooled risk as a means of calculating premiums, toward ever-more individualised risk.

- **Pooled risk** means that all customers pay the same premium regardless of their individual circumstances. All premiums paid by customers are put into a 'pool', and if someone needs to make a claim, the money will come out of this pool.
- **Individualised risk** looks at particular characteristics of the customer, or 'rating factors', and assigns that customer a level of risk. The premium will be calculated based on that risk, meaning it will be more expensive for a customer who represents a higher level of risk.

Individualised risk is meant to make pricing more accurate, but it also makes it more complex. To keep prices competitive, insurers aim to charge premiums that are enough to cover the risk posed, but no higher than necessary.³⁰ In theory, if a provider offered customers an unfair price, a competitor would have an incentive to offer a fairer price to attract new customers. This incentivises insurers to be as accurate as possible when conducting individualised pricing, using multiple rating factors to assess how likely someone is to make a claim.

³⁰ Association of British Insurers (ABI), [Insurance in the UK: The Benefits of Pricing Risk](#), 2008.

With new advances in technology, insurers are able to invest a lot of time and resources in using an ever increasing range of data sources about each consumer, including information well beyond what someone might share directly when applying for a quote.

In principle, this benefits consumers, as different providers offer a range of services suitable for different needs, and competition drives overall prices down. However, the shift from pooled to individualised risk means a greater burden of cost has shifted from the 'group' onto individuals that are deemed 'riskier'. While this can have a positive impact by encouraging less risky behaviours, in practice, where risk factors are outside a consumers' control, it may not be fair.

More broadly, the complexity of insurance pricing can prevent consumers knowing if they are getting a good deal, which can mask unfair practices. Our research into the loyalty penalty in the insurance market found that nearly half of people would not be confident they could identify unfair charges on their premium.³¹ The FCA has recently taken welcome steps to address the loyalty penalty by introducing rules to ban 'price-walking' in insurance, which will significantly improve consumers' ability to access fair deals in the market.³²

However, ending the loyalty penalty does not guarantee that pricing practices are fair. The FCA wrote to insurance firms in 2018 to raise concerns that providers could be at 'risk of discriminating against consumers through using rating factors in pricing based (directly or indirectly) on data (including third party data) relating to or derived from protected characteristics'.³³ The FCA suggested that firms could be lacking the appropriate oversight of how data being input into pricing decisions could relate to protected characteristics, and the impact of this on their customers.

³¹ Citizens Advice, [The insurance loyalty penalty: unfair pricing in the home insurance market](#), 2021.

³² FCA, [General insurance pricing practices: final report](#), 2020; Citizens Advice, [Loyalty penalty](#), 2021.

³³ A.Bailey, [FCA expectations of general insurance firms undertaking pricing activities](#), 2018.

2. Discrimination

Insurance firms and regulators have obligations under the Equality Act (2010) to make sure they are not directly or indirectly discriminating against consumers.³⁴

What is discrimination?

Under the Equality Act 2010, people in Britain are protected from discrimination, harassment and victimisation. There are two broad categories of discrimination:

Direct discrimination: This is when you are treated worse than another person or other people because you have a protected characteristic, someone thinks you have that protected characteristic, or you are connected to someone with that protected characteristic.

Your circumstances must be similar enough to the circumstances of the person being treated better for a valid comparison to be made. If you cannot point to another person who has been treated better, it is still direct discrimination if you can show that a person who did not have your protected characteristic would have been treated better in similar circumstances. To be unlawful, the treatment must have happened in one of the situations that are covered by the Equality Act. For example, in the workplace or when you are receiving goods or services.

Indirect discrimination: This is when there is a policy that applies in the same way for everybody but disadvantages a group of people who share a protected characteristic, and you are disadvantaged as part of this group. If this happens, the person or organisation applying the policy must show that there is a good reason for it. It makes no difference whether anyone intended the policy to disadvantage you or not.

If the organisation can show there is a good reason for its policy, it is not indirect discrimination. This is known as objective justification.

³⁴ Equality and Human Rights Commission (EHRC) [definition of the Equality Act \(2010\)](#), accessed 2021.

Regulators, including the FCA, have additional responsibilities set out by the Act under the Public Sector Equality Duty; the FCA are required to 'have due regard to the need to eliminate unlawful discrimination, and advance equality of opportunity between people who share a protected characteristic and those who do not' including where this relates to the firms that the FCA regulates.³⁵

So, are the ways that insurers set prices discriminating against people of colour? We have seen that the complexity of pricing practices means this is not a simple question to answer. It is difficult for a consumer organisation like Citizens Advice to unpick how the different rating factors that make up an individual risk profile are used and weighted, and the extent to which these are proxies for protected characteristics. But our research has found significant differences in outcomes for people of colour.

To understand what is driving these outcomes, it is important to reflect on the broader context in which decisions about insurance pricing are made. Insurance companies operate in the context of systemic racism, which seriously impacts the lives of people of colour in the UK. Systemic racism in areas like education, employment and housing has created structural inequalities for people of colour, which are reflected in many of the rating factors used by insurers to calculate risk. While individual rating factors may be considered legitimate, taken together they could contribute to the poorer outcomes people of colour experience.

For example, many of the rating factors that postcodes could proxy for (aside from ethnicity) reflect structural inequalities faced by people of colour in the UK. Data from the Runnymede Trust shows that Black and Minority Ethnic groups are more likely to have low incomes due to lower wages, higher unemployment rates, higher rates of part-time working and receiving relatively low levels of benefits.³⁶ The Resolution Foundation has estimated that, after accounting for personal characteristics like age, place of birth and qualifications, and employment status, including industry, occupation and

³⁵ [Memorandum of Understanding between the FCA and the Commission for Equality and Human Rights](#), 2021; EHRC is the only body with enforcement powers under the Equality Act 2010. However, where market specific issues arise, the FCA is the most relevant regulator as it has greater industry oversight and resources to tackle consumer issues.

³⁶ O. Khan, [The Colour of Money: How racial inequalities obstruct a fair and resilient economy](#), 2020.

length of employment, the gap in pay between Black and White male graduates is 17%, or £7,000 per year.³⁷

Income and wealth disparities contribute to the fact that ethnic minorities are more likely to live in the most deprived areas in England. People from Bangladeshi, Pakistani and Black backgrounds in particular are disproportionately likely to live in areas where poverty rates are high.³⁸ Limits on choice in the housing market as a result of low incomes and experiences of discrimination when accessing accommodation also have an impact. Research by Shelter found that 56% of Black people, and 49% of Asian people live in unfit, unsafe and unaffordable private rented housing, compared to 33% of White people.³⁹

There is a clear relationship between these inequalities and the data used to inform insurance pricing. The insurance market operates in a way that incentivises consumers to minimise their personal level of risk, but when these risk factors reflect structural racism - which is not within consumers' control - the system becomes unfair. Nor are these structural factors the fault of insurance companies, and it would clearly be challenging for the industry to mitigate all impacts of structural racism.

But, in a market as essential as insurance, fair pricing is vital. Insurance should not be another area where people of colour are unfairly disadvantaged, particularly as the consequences of unaffordable insurance can be significant. People on lower incomes are necessarily less likely to be able to absorb higher costs for insurance, which increases the chances of being under- or uninsured. This damages financial resilience, as the cost of damage or loss of uninsured goods is often far higher than if they had been insured.

³⁷ Resolution Foundation, [Opportunities knocked? Exploring pay penalties among the UK's ethnic minorities](#), 2018.

³⁸ UK Government data shows Pakistani (75%), Bangladeshi (75%) and Black (63%) ethnic groups have the highest percentage of households in the lowest two income quintiles. Department for Work and Pensions, [Households below average income: 1994/5 to 2018/19](#), 2020; Institute and Faculty of Actuaries (IFoA) and Fair By Design (FBD), [The hidden risks of being poor: the poverty premium in insurance](#), 2021.

³⁹ Shelter, [Denied the Right to a Safe Home: Fight For Home](#), 2021.

Structural inequality embedded in risk rating factors may well play a role in determining insurance prices for people of colour. However, the factors we might expect to drive differential outcomes in the market cannot account for the findings of our research. We found that quotes in lower crime postcodes with large Black or South Asian populations are higher than quotes in higher crime postcodes with a largely White population. This suggests that the ethnicity penalty is not solely driven by inequalities caused by systemic racism, which are largely outside insurance firms' control. Rather, insurance pricing mechanisms could be perpetuating or exacerbating discrimination in the market. The FCA should take responsibility for establishing what is driving the ethnicity penalty, assessing the role of structural racism in the data used by insurers, but also the way this data is processed through algorithms to generate prices.

3. Algorithmic bias

While unequal outcomes for people of colour in insurance is not a new phenomenon, we are concerned that the increasing use of algorithmic decision making could be embedding these inequalities.

Algorithms can be defined simply as a set of rules that must be followed when solving a particular problem, or in this context a model or set of instructions written for a computer. Insurers rely on a range of provided data (information knowingly shared by customers), observed data (data gathered indirectly via monitoring techniques) and inferred data (assumptions made about customers based on data such as their internet history) to determine their prices.⁴⁰ Insurers also rely heavily on data purchased from third parties, such as credit scores. Algorithms are used to make sense of these increasingly complex sources of data to set prices, moving beyond traditional demographic data like age and gender to incorporate information about whether, for example, a consumer is likely to renew their policy.

Some insurers have also begun to integrate more complex artificial intelligence systems into their pricing practices.



Ping An, a financial services organisation in China, uses an app that **monitors users' behaviour - when they exercise, take medicine and what their diet is - to determine their insurance premiums.**⁴¹ The UK insurance start-up Zego offers **lower premiums to drivers who sign up for monitoring.** Zego uses machine-learning to monitor driving habits like braking speed to determine how 'safe' a driver is.⁴²

The increasing availability of data from devices like smartphones, fitness trackers and smart watches opens up further avenues for gathering increasingly personal data. This trend towards automated pricing combined with the use of diverse sources of data is predicted to continue in future.⁴³

⁴⁰ Centre for Data Ethics and Innovation (CDEI), [Snapshot paper - AI and personal insurance](#), 2019.

⁴¹ I. Smith, [Data Machine: the insurers using AI to reshape the industry](#), 2021.

⁴² Ibid.

⁴³ McKinsey & Company, [Insurance 2030](#), 2021.

Insurance companies argue that these developments will allow them to conduct more accurate analyses of risk, and will incentivize consumers to act more responsibly, for example to drive more safely.⁴⁴ There is also some evidence to suggest that algorithmic decision making could reduce the risk of inter-personal discrimination in financial services. A study of the US mortgage market found that FinTech algorithms discriminate on average 40% less than in-person decision makers when offering interest rate quotes on mortgages.⁴⁵

Our research was unable to explicitly test the way that algorithms use either 'observed' or 'inferred' data to make decisions about price in the insurance market. We also know that unequal outcomes in insurance pricing identified in the past have been caused by other practises, such as explicit exclusion of certain postcode areas, or 'redlining'.⁴⁶ However, it is clear from our findings that the introduction of algorithmic decision making has not solved the issue of bias in insurance pricing. In fact, there is evidence that the use of algorithmic decision making and the rise of 'Big Data' could have a range of negative impacts on consumers.

Algorithms make decisions based on the data they are given; they are 'making a prediction based on generalised statistics, not on someone's individual situation'.⁴⁷ If that data reflects social inequalities, the results of the algorithmic decision making will be biased.



In the US, investigations into the car insurance market found that historic inequalities may be impacting pricing algorithms.⁴⁸ People of colour have historically lived in high crime areas - as a result of structural racism in policing, housing and social spending - and are therefore likely to

⁴⁴ R. Swedloff, [Algorithms and AI are radically changing insurance](#), 2019.

⁴⁵ Bartlett et al., [Consumer-lending discrimination in the FinTech era](#), 2019.

⁴⁶ Redlining describes a practice identified in the US in the 1960s where insurance companies would deem areas of a city too risky to insure. More recently, in the UK, there have been instances where individuals have found themselves unable to access cover due to living in a certain postcode, Bob Howard, BBC Money Box, [Car insurance postcode blacklist could deprive drivers of cover](#), 2012.

⁴⁷ M. Spielkamp, [Inspecting Algorithms for Bias](#), 2017.

⁴⁸ ProPublica, [Minority neighbourhoods pay higher car insurance than white areas with the same risk](#), 2017.

have been offered higher prices for insurance. This could mean that current algorithms are tested and operated using data which either under-represents people of colour (if they have been excluded from the market) or indicates that people of colour are likely to pay a higher price.

This means there is a risk that algorithmic decision-making could be entrenching historic and existing inequalities.⁴⁹

Even if decisions are made to exclude data on protected characteristics when constructing algorithms, there may be a number of proxies for these characteristics in the data that are difficult to spot.

 Amazon found that a recruiting tool they used was showing bias against female candidates. This pattern persisted even when the algorithm was altered to exclude information on an applicant's gender. Instead they found that the algorithm had begun making decisions based on implicitly gendered words.⁵⁰

Our research has found that while insurers do not explicitly collect data on ethnicity, there is a correlation between area-based proxies for ethnicity and unequal pricing outcomes. The presence of these kinds of proxies indicate some of the challenges of addressing algorithmic bias, but also opportunities for new approaches to tackling it. Monitoring proxy data to better understand outcomes for different consumer groups, as we have done in our research, could allow firms to prevent discrimination without needing to expand their collection of data on protected characteristics.⁵¹ However, there is little evidence that this type of outcomes monitoring is routinely carried out by insurers, and it is not a regulatory requirement.

In 2019, the FCA told the Treasury Select Committee that several insurance firms could not show how their pricing algorithms complied with the Equality

⁴⁹ M. MacCarthy, ['Fairness in algorithmic decision making'](#), 2019.

⁵⁰ K. Hao, [This is how AI bias really happens - and why it's so hard to fix](#), 2019.

⁵¹ CDEI, [Review into bias in algorithmic decision making](#), 2020.

Act.⁵² Although this was not evidence of non-compliance, it showed a concerning lack of oversight. The FCA had not required firms to share if and how they tested their data usage and algorithms to avoid indirectly discriminating against consumers. This was despite the FCA confirming that it has the resources to assess individual firms' algorithms to check compliance with the Act.⁵³ The committee described the FCA's decision not to require this data from firms as a 'missed opportunity'.

More recently, the Centre for Data Ethics and Innovation (CDEI) found that organisations often do not understand their responsibilities in relation to the Equality Act when using algorithmic decision making.⁵⁴ This lack of oversight both increases the risk of market failures and makes it more difficult to prove when failures have occurred. This could mean that consumers with protected characteristics experiencing worse outcomes are not able to benefit from the legal protections offered by the Equality Act.

It is often difficult for researchers, let alone consumers, to understand the hidden ways that algorithmic bias may be resulting in unfair pricing. In the case of algorithms and 'Big Data', consumers often do not have a clear expectation or understanding of how their data is being used.⁵⁵ This can also be a problem for regulators - the opacity of algorithmic decision making makes a traditional approach to regulating by measuring compliance with specific rules difficult. In this context, measuring the fairness of outcomes is likely to be more effective.⁵⁶ Regulators need to embrace this shift to enable them to better measure the current impact algorithms are having on consumers, and to identify the potential for future harms.

⁵² Treasury Select Committee (TSC), [Consumers' access to financial services](#), 2019.

⁵³ The EHRC told the Committee that it did not have the remit or resources to assess individual firms for compliance with the Equality Act, TSC, [Consumers' access to financial services](#), 2019.

⁵⁴ Centre for Data Ethics and Innovation (CDEI), [Review into bias in algorithmic decision making](#), 2020.

⁵⁵ Department for Digital Culture Media and Sport, [Data: a new direction](#), 2021.

⁵⁶ 'Outcomes fairness' can be defined as equal outcomes for different demographic groups; connected to current legislation in the Equality Act 2010.

What next?

While our research was exploratory, we have identified a worrying correlation between car insurance pricing and ethnicity. The FCA has a responsibility to ensure that firms treat all customers fairly. Any evidence of an ethnicity penalty should be a cause for concern, and should be investigated further.

We are concerned that the ethnicity penalty could indicate that firms are not consistently or effectively complying with their responsibilities under the Equality Act. But the lack of transparency around risk-based pricing and algorithms makes this difficult to determine. While the FCA does not have enforcement powers under the Equality Act, they have previously stated that firms would not be meeting their obligations, including the FCA's Principles for Business, if they did not comply with the Equality Act.⁵⁷ The FCA therefore needs to provide clarity for firms on how they are expected to demonstrate compliance with the Equality Act, and take proactive enforcement action against those who fail to comply.

The increasing role of algorithmic decision-making in setting prices requires a new way of approaching regulation. Rapid advances in the power and use of new technologies in consumer markets have brought significant benefits for consumers. But the pace and scale of change means there is a risk that regulators, and consumers, struggle to keep up. The complexity and constant evolution of pricing algorithms makes it almost impossible for consumers to tell if they are getting a fair price. The burden must therefore sit with firms. If firms are not able to open the 'black box' of an algorithm, they should be able to monitor and explain the outcomes of pricing decisions to the FCA, to ensure that they are not racially biased.

There are a number of opportunities available to the FCA to explore this issue further; including current work on fair pricing in financial services, the implementation and data collection around new rules to ban 'price walking' in the insurance market, and proposals for a new Consumer Duty.⁵⁸ They should use these opportunities to require firms to demonstrate outcomes for different groups of consumers. This would necessitate a much higher level of data

⁵⁷ FCA, [Feedback statement: Call for input on access to insurance](#), 2018.

⁵⁸ FCA, [Fair pricing in Financial Services](#), 2019; [A New Consumer Duty](#), 2021.

collection and publishing than is currently required, which the FCA has indicated they would consider if ‘there would be value in doing so, for example, to increase scrutiny of firms’ pricing practices’.⁵⁹

Recommendations

Our research presents a clear case for further scrutiny of firms’ pricing practices. Firms should be able to explain the outcomes of their pricing decisions, and demonstrate that the algorithms used to determine these decisions do not entrench racial biases.

Ultimately, people of colour should not consistently experience worse outcomes in the car insurance market than White people. To address this, the Financial Conduct Authority (FCA) should take the following actions in the market:

- 1. Publish a public statement setting their expectations** for how firms should demonstrate that their pricing practices comply with the Equality Act (2010) and their obligations under fair pricing regulations, and what action will be taken against firms who fail to meet these standards
- 2. Require firms to audit and monitor pricing outcomes to identify any racial disparities**, and to cross-check permitted data for correlations with protected characteristics, and report these findings to the FCA
- 3. Conduct work to measure any correlations between profit margins and the racial composition of geographic areas** that could result from pricing algorithms
- 4. Take enforcement action against firms found to be in breach** of their obligations, or failing to explain why their pricing models have delivered differential outcomes effectively
- 5. Assess and build capability for effective oversight and monitoring of algorithmic decision making**, to future-proof their regulatory approach as the prevalence of big data and machine learning lead to ever more personalised pricing

⁵⁹ FCA, [General insurance pricing practices: final report](#), 2020.

If this work also identifies an ethnicity penalty in the market, the FCA must take urgent action to fix the market so that it is fair for people of colour.

Looking to the future

Our research also highlights the need for greater oversight and regulation of the use of data and algorithmic decision making across consumer markets. The broader regulatory landscape is already adapting to some of these issues. The Competition and Markets Authority (CMA) has launched a Digital Markets Unit (DMU) and the Department for Digital, Culture, Media and Sport (DCMS) is consulting on a new direction for data.⁶⁰ Both have acknowledged the importance of dealing with bias and ensuring fairness in new technologies.⁶¹ The DCMS consultation emphasises the existence of multiple, often competing, definitions of fairness and the challenges that governments and regulators face when trying to define them. This broader context could provide opportunities for the FCA and other regulators to more effectively regulate on the basis of consumer outcomes.

This report is our first investigation into discriminatory pricing in consumer markets. Going forward, we will closely monitor the FCA's response to our findings and recommendations. The issues we have identified are not an isolated trend within the insurance industry - advances in technology are enabling increasingly complex decision making and pricing across financial markets. To make sure that consumers are being treated fairly, research and regulation needs to keep pace with these developments. Building on our research into car insurance, we will continue to explore more broadly how algorithms and discrimination impact outcomes for consumers in different markets.

⁶⁰ DCMS, [Data: A new direction](#), 2021.

⁶¹ CMA, Algorithms: [How they can reduce competition and harm consumers](#), 2021; DCMS, [Data: A new direction](#), 2021.

Annex 1: Calculations

- 1. In areas where there is a high proportion of people of colour, customers are quoted at least £280 more for car insurance compared to areas where the population is largely White.**

The mystery shopping exercise generated average quotes in eight postcodes. These postcodes were used as proxies for ethnicity. The individual ethnicity penalty was calculated based on the minimum difference between the average quote offered in a white postcode and the average quote offered in a postcode with a high proportion of people of colour.

Specifically it is the difference between the lowest average quote in a postcode with a large Black population (£837.41) and the highest average quote in areas with a large White population (£554.60). $£837.41 - £554.60 = £282.81$. The Black postcode that generated the lowest average quote also had the lowest percentage of people of colour in the study (53%). The quote for this postcode (£837.43) was the lowest average quote for any Black or South Asian postcode used in the mystery shopping exercise.

- 2. Over 1 in 4 people of colour live in areas we estimate to be impacted by the ethnicity penalty, compared to 1 in 50 - just 2% - of White people.**

Based on the mystery shopping exercise, we have evidence to suggest that people living in areas with large communities of colour (those with 53% people of colour or more) are being charged the ethnicity penalty on their insurance. We used Ward level population data from the 2011 census to calculate the number of White people and people of colour living in these areas in England. 1,895,567 people of colour live in areas our research has shown are impacted by the ethnicity penalty in comparison to 844,578 White people.

These figures were then used to calculate the percentage of White people and people of colour impacted by the ethnicity penalty based on the total population of White people and people of colour in England. We found that 26% of people of colour and 2% of White people live in areas impacted by the ethnicity penalty.

3. If our results were consistent across the country, people of colour would be paying £213 million more for car insurance every year, due to living in areas with large communities of colour.

We used data from the [FCA financial lives survey 2020](#) to calculate the number of motor insurance policy holders, broken down by ethnicity. We multiplied the population of policy-holders who are people of colour by the proportion of people of colour living in areas with large people of colour populations, to get the total number of people of colour affected by the ethnicity penalty. We estimate 754,000 people of colour hold car insurance policies and live in areas affected by the ethnicity penalty.

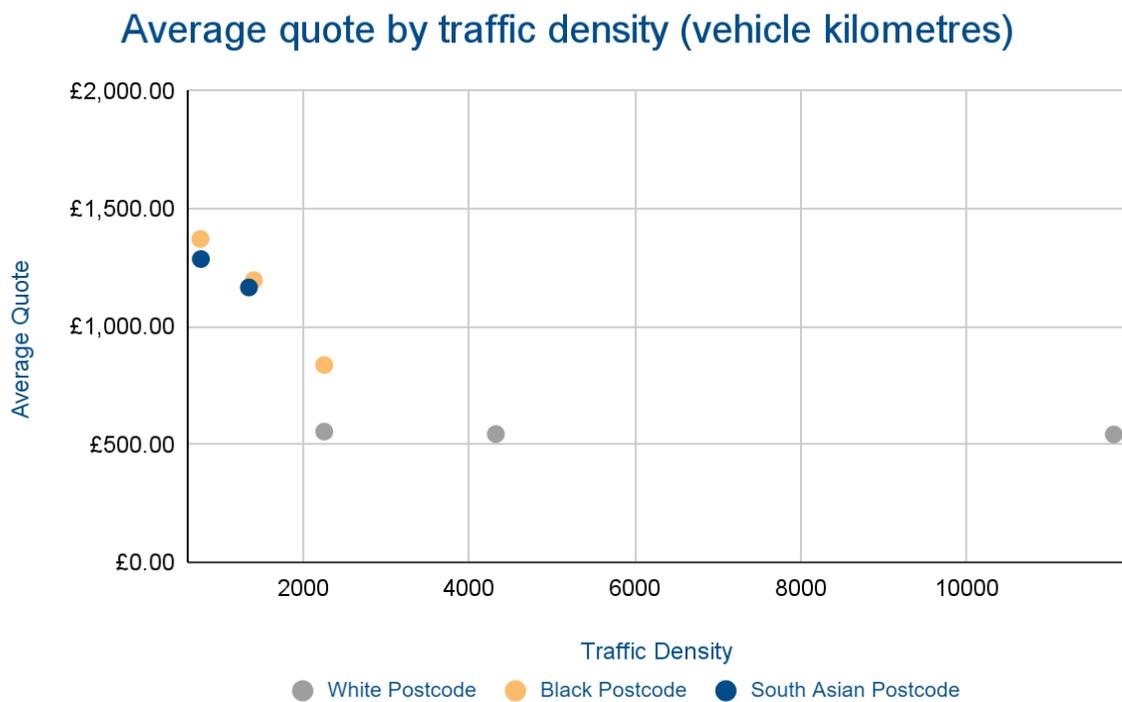
The total number of people of colour affected by the ethnicity penalty was multiplied by the individual ethnicity penalty (see calculation 1). $754,000 \times £282.81 = £213,238,740$.

Annex 2: Additional factors

We also tested traffic density factors as part of our mystery shopping analysis, including vehicle kilometres and flow. Although these factors likely have had some impact on the average quotes, their relationship to the average quotes was not significant.

Traffic density (vehicle kilometres)

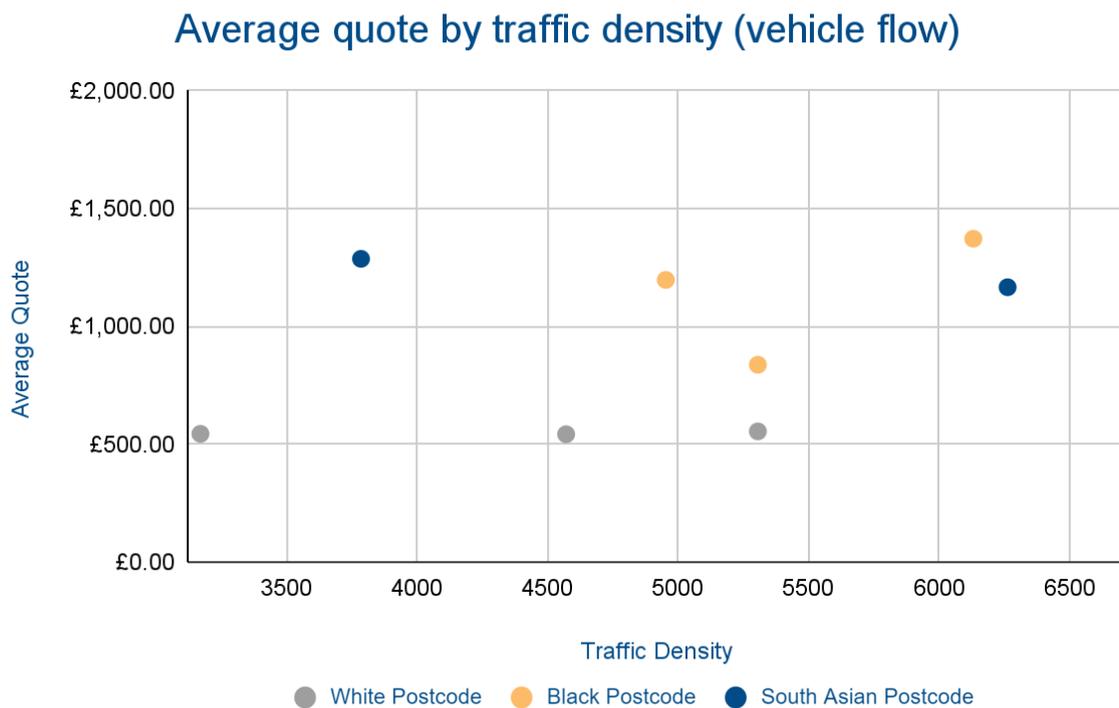
Traffic density refers to the number of vehicles occupying a given length of a road, and the graph expresses this as vehicle kilometres at a local authority level. The table below summarises the measure for each postcode, and is calculated as a 3-year average between 2018 and 2020.



Results are based on a sample size of 649 quotes. Source: Proinsight.

Traffic density (vehicle flow)

Vehicle flow refers to the number of vehicles passing in 24 hours at an average point on the road network in each local authority. This measure controls for differing length of road in each authority, providing a measure of how heavily the roads are used. The table below summarises the vehicle flow measure for each postcode, which has been calculated as 3-year average between 2018 and 2020.



Results are based on a sample size of 649 quotes. Source: Proinsight.

Annex 3: Mystery shopping data

This table sets out the data used to generate quotes through the mystery shopping exercise. All characteristics were held the same for each shop unless otherwise stated.

Characteristic	Persona
Name	Varied to generate personas
DOB	1981 (precise date varied throughout)
Gender	Male
Postcode	Varied to generate personas
Homeowner?	Yes
Relationship Status	Married
How many children under 16?	0
Employment Status	Employed
Job Title	Teacher
Industry	Education
How long have you continuously lived in the UK?	Lifetime
Nationality	British
Title	Mr
Product details	
Vehicle Details	Vauxhall Corsa Ford Focus
Registration	Varied during shops
Level of Cover	Fully comprehensive
Value	£5,000 £10,000
Distance Travelled	15,000

Security Devices etc	Vauxhall Corsa - No Ford Focus - Manufacturer's own
Modified?	No
When did you purchase the vehicle?	2021
Other cars in household?	No
Claims and convictions?	Nil
Where is the vehicle kept at night?	Street ⁶²
No claims?	5 years

⁶² Some of the addresses used for the mystery shopping personas were homes that had the option for off-street parking e.g. in a garage, driveway or private road. All the quotes were generated on the basis that the car was parked overnight on the street, but it is unclear whether the presence of e.g. a driveway, at a property would have an impact on the price generated. We therefore conducted analysis to test whether the presence of an option for off-street parking had an impact on our results. We found that parking location options have little impact on the underlying relationship between price and the proportion of Black and South Asian people in the population.

Citizens Advice helps people find a way forward.

We provide free, confidential and independent advice to help people overcome their problems. We are a voice for our clients and consumers on the issues that matter to them.

We value diversity, champion equality, and challenge discrimination and harassment.

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