

One in seven people in the UK workforce is now in self-employment – but this is a very diverse community. **Jack Blundell** is developing a typology of self-employed workers, which can then be used to assess differences in how satisfied they are with their working lives and to identify vulnerable groups who may benefit from policy support.

The UK's self-employed workers:

who they are and what they need



Between 2000 and 2017, self-employment in the UK grew from 12% of the labour force to 15.1%, with the years since the financial crisis seeing particularly rapid growth (Office for National Statistics, 2018).

Accompanying this rise has been a change in the nature of self-employed workers (D’Arcy and Gardiner, 2014). Much of the new workforce of the ‘gig economy’ qualifies as self-employed – and the self-employed of today represent a diverse community.

The seminal Taylor review of UK working practices notes that ‘The experiences and vulnerabilities of this group range from billionaire entrepreneurs to taxi drivers working 90 hours a week simply to pay their bills’ (Taylor, 2017). Self-employed workers are old and young; they might have left school at 16 or have postgraduate degrees; and they can be found in a variety of sectors – from construction to banking and finance.

If we are to design effective policies for the self-employed, as a first step we must understand who they are, and whether they would indeed benefit from any additional social protection. As emphasised in the Taylor review, the multi-faceted nature of self-employment suggests that

a ‘one-size-fits-all’ approach may not be appropriate: ‘Government should recognise the wide variety of forms of modern self-employment and should act to support and protect those who need help.’

In light of this, the goal of my CEP project is first, to develop a typology of self-employed workers in the UK, and then to explore the extent to which different groups in self-employment may benefit from policy intervention.

Methodology: identifying clusters

The statistical challenge of grouping or ‘clustering’ data into a small number of similar classes or types has been around for quite some time, but the associated methods have only recently become widely used, thanks to the advent of cheap computing power. Clustering is one of many ‘machine learning’ tools and is now implemented across a wide variety of fields, including marketing, geology and genetics.

Applications to labour markets have to date been limited, so an additional goal of my project is to demonstrate how this can be achieved. Using data from the Labour Force Survey (LFS), I apply a ‘partitioning around medoids’ algorithm. This divides workers into types based on age, sex,

There are high rates of under-employment across all groups of self-employed workers

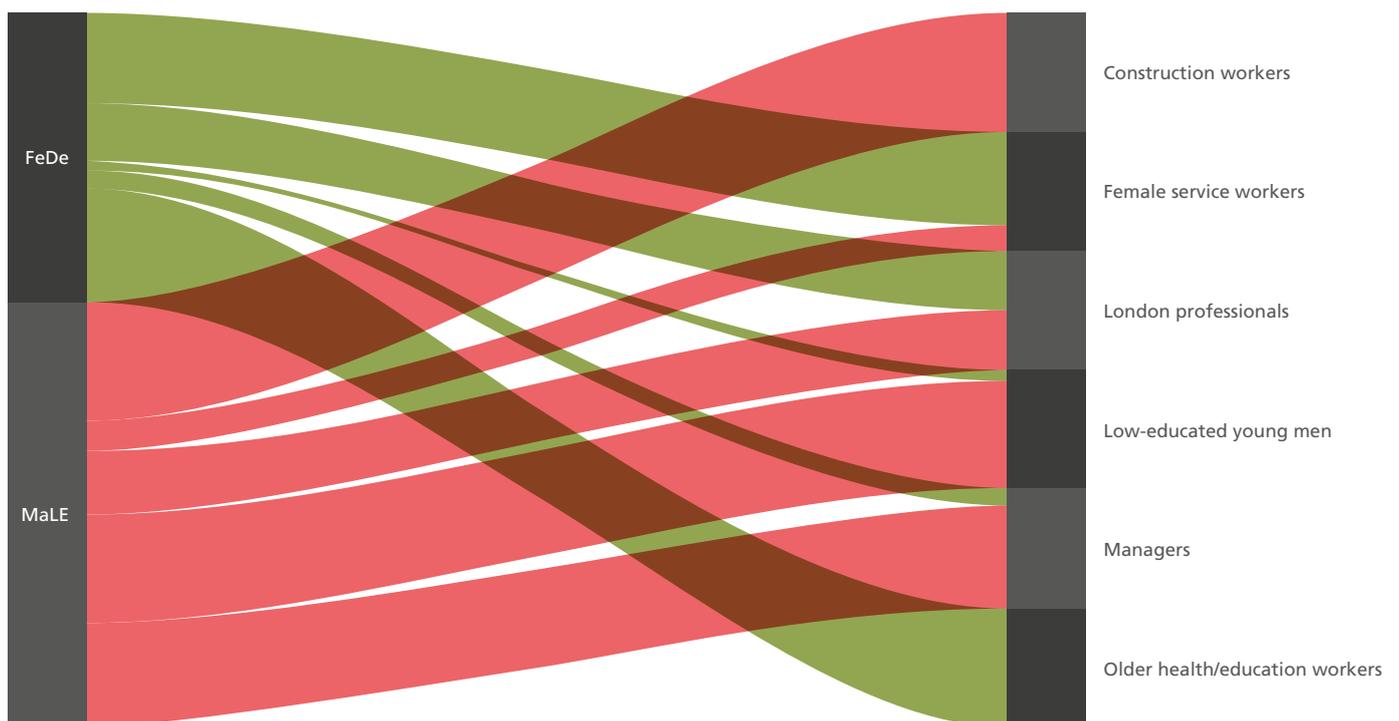
hours, occupation, industry and part-time/full-time status.

The challenge here is to assess whether there are indeed distinct clusters and, if so, how many there are. Using these six characteristics in the LFS, I find support for two separate typologies: one in which individuals are assigned to two groups; and another where they are assigned to six groups.

Figure 1 shows the relationship between the two typologies. The two clusters on the left-hand side are labelled FeDe (female degree holders) and MaLE (male and low-educated).

We can see a strong relationship between the two typologies. For example, there is a group in the six-cluster typology labelled ‘Construction workers’ who are entirely drawn from the MaLE cluster in the

Figure 1: The relationship between the two-cluster and six-cluster typologies



High under-employment indicates a large pool of reserve workers seeking further employment and pushing wages down



two-cluster typology, whereas the group of 'older health/education workers' is drawn almost entirely from the FeDe group. The group labels are not perfect, as seen by the fact that some members of the MaLE group are found among the female service worker group in the six-cluster typology.

The two-cluster typology: MaLE and FeDe

Of the two groups that emerge from the two-cluster typology, the larger of the two, labelled MaLE, is perhaps closer to the traditional view of self-employment. Its members are predominantly male, less educated workers in industries such as construction.

Flexibility, including being able to work from home, is often the main reason for being self-employed

The second group, constituting a sizable minority of self-employment, is exceptionally highly educated: more than two thirds of the FeDe group hold post-secondary degrees. The FeDe group is also significantly more likely to work part-time and its members tend to be found in professional and service industries. They are also somewhat older than the MaLE group.

Characteristics drawn from the LSE-CEP Survey of Alternative Work Arrangements allow us to shed light on whether self-employed workers in each of these two groups are content with their level of working hours, their motivation for becoming self-employed and whether they would rather be in a conventional employment relationship.

I find significant rates of under-employment in both groups, with only half the respondents satisfied with their hours and the majority of the remainder wanting more hours. This is consistent with the argument that recent high employment rates mask significant under-employment among the self-employed, and that in fact there is a large pool of reserve workers seeking further employment and pushing wages down. There is little difference in this across the two groups, which both exhibit similar rates of under-employment.

In terms of why workers are self-employed, flexibility is the most important factor for both groups. More than three quarters of the FeDe group list flexibility, including being able to work from home, as their main reason for being self-employed. For MaLE, the figure is lower, at 59%.

When it comes to general satisfaction, more than three quarters of workers in each group are content in self-employment relative to conventional employment. So while there are clear differences in demographic and work characteristics across these two groups, satisfaction is similar. While there appear to be some differences in the groups' motivations for being self-employed, to a large extent each group appears to be benefitting from self-employment relative to a conventional employment relationship.

The six-cluster typology

Will we find the same high levels of satisfaction across our six-cluster typology? In terms of characteristics, the six groups are:

Female service workers: this group is predominantly female, part-time and not particularly highly educated. They tend to work in the services sector. The dominant occupations among this group are hairdressing, cleaning and childcare

London professionals: predominantly male, full-time and highly educated, this group is geographically focused in London and the South East. They work in professional occupations, typically in the banking and finance sector.

Less educated young men: members of this group are the most likely to have below secondary school qualifications. They are predominantly male and noticeably younger than other groups. The transport and communications sector is the most

common industry, with 51% of this group working as road transport drivers. This group is likely to include many gig economy workers, such as private hire and delivery drivers. The group is also by far the least likely to be white, with more than a quarter from ethnic minorities.

Managers: this predominantly male group is older than other groups working as managers and proprietors in distribution, hotels and restaurants.

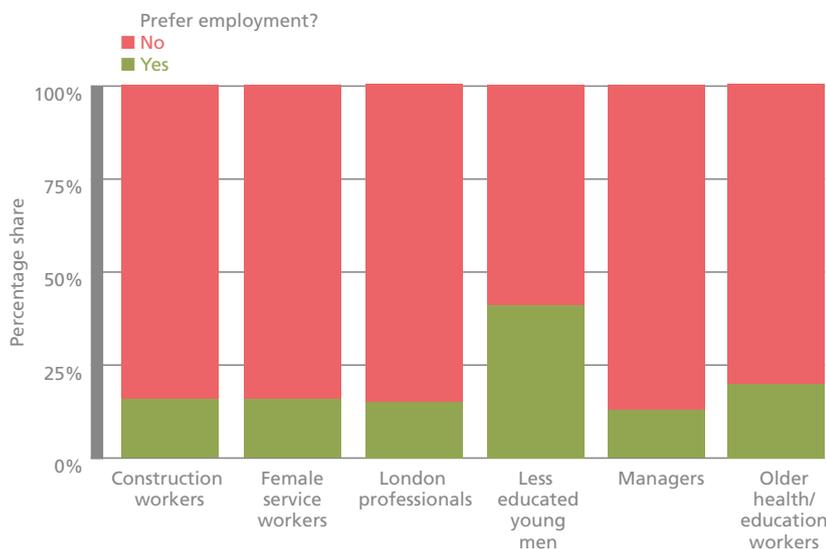
Older health/education workers: this group of workers is the most highly educated. They work in a wide set of occupations related to health and education. They are older than workers in other groups and the most likely to be part-time.

Construction workers: the largest group of the six is the most homogeneous, dominated by tradesmen working in the construction industry.

Drawing on the LSE-CEP survey and consistent with patterns across the two-group typology, I find high rates of under-employment across all groups. In addition, across all six groups, workers are motivated by the flexibility that self-employment can provide. I find that while aggregate satisfaction is high across the six groups, the group of less educated young men stands out as being dissatisfied.

As Figure 2 shows, more than 40% of this group would rather be in a conventional employment relationship.

Figure 2:
Would you rather be in a conventional employment relationship?



They are also the least likely to be content with their hours, exhibiting the highest rates of under-employment.

Perhaps most concerning is that this group is the most likely to report being self-employed due to a lack of better options. It is notable that the group is predominantly made up of drivers, who have been at the forefront of technological disruption in the labour market. Many of these workers find jobs through gig economy platforms and they are potentially vulnerable to further technological innovations, such as self-driving cars. It could be that the option of self-employment provides valuable insurance to these workers in economic downturns, but these patterns do suggest a preference for more conventional work among many in this group.

In sum, if policy-makers want to identify groups who are not benefitting from self-employment and who are potentially vulnerable, this group of less educated young men (outside of construction) would be an appropriate starting point.

Conclusion

This work provides an example of how clustering methods can be used to yield insights about the labour market as well as broad lessons for policy. I demonstrate evidence of significant under-employment across self-employment, which suggests that measures of labour market slack ought to be augmented to include aspects of self-employment.

What stands out from the analysis is that while rates of satisfaction with self-employment are high on aggregate, there is a group of primarily less educated young men who are dissatisfied and not able to enjoy the potential advantages that self-employment can bring.

In reference to self-employment, Taylor (2017) states that 'Policy interventions have to be tailored to respond to those who require support'. This project has illustrated how policy-relevant groups can be found and has identified such a group. The key challenge facing policy-makers now is how they can improve support for this group without impeding the flexibility enjoyed by others in self-employment.

A policy challenge is how to support less educated young men without impeding the flexibility enjoyed by others in self-employment

This article summarises 'Clusters in UK Self-employment' by Jack Blundell, a forthcoming CEP Occasional Paper. The work was funded by the Turing-HSBC-ONS Economic Data Science Award.

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Further reading

Conor D'Arcy and Laura Gardiner (2014) 'Just the Job – Or a Working Compromise?', Resolution Foundation.

Office for National Statistics (2018) *Trends in Self-employment in the UK*.

Matthew Taylor (2017) *Good Work: The Taylor Review of Modern Working Practices*.