

The rise of self-employment in the UK: entrepreneurial transmission or declining job quality?

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The UK has experienced very significant growth in self-employment since the financial crisis. The self-employed are at higher risk of income volatility while facing lower levels of social insurance. Individual transitions into self-employment may be driven by a range of factors, both ‘pull’ and ‘push’. This paper proposes a re-evaluation of the evidence on whether private sector business organizations stimulate entrepreneurial transmission amongst their employees. In the UK context rising self-employment may reflect the consequences of flexibilization and falling job quality, rather than outright job loss. Previous research has focused mainly on the subjective notion of job satisfaction to identify the level of attachment the future self-employed have to their current employer. Quantitative analysis is undertaken using large scale British longitudinal survey data. The paper extends this work to show that organizational (dis)attachment is evidenced in a range of extrinsic indicators of job quality, providing explanatory information beyond intrinsic job satisfaction. Specifically, the paper shows that the impact of training on self-employment entry depends asymmetrically on the source of that training. Finally, the paper argues that reduced attachment provides an alternative explanation for any ‘entrepreneurial transmission’ effect, through which employees, particularly those in smaller organizations, are more likely to enter self-employment. However, anticipated improvement in the experience of work from choosing self-employment is seen to be somewhat illusory, speaking to growing concerns about the impact of the growth of the gig economy.

Key words: Self-employment, Job quality, Entrepreneurial transmission, Gig economy

JEL classifications: I26, J62, L26

1. Introduction

The self-employed now account for 15% of the UK workforce (ONS, 2018). Whilst self-employment may confer benefits in terms of individual autonomy, a significant concern is that the self-employed do not enjoy the social protection provision that other workers take for granted. This paper contributes to the debate on this particularly British phenomenon. Have transitions to self-employment occurred in the UK

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as an alternative to transitions into paid jobs of lower quality in a world of labour ‘flexibilization’ (Keep and Mayhew, 2010; Crouch, 2012), or because workers are attracted by the experience and narrative of entrepreneurial opportunity (Audretsch *et al.*, 2006; Thurik *et al.*, 2008)? Self-employment is highly heterogeneous, encompassing activity across a wide range of sectors and occupations, sometimes concentrated in particular demographic groups, sometimes as part-time activity alongside other work. It spans genuine business activity, usually as a sole-trader but sometimes as an employer of others, perhaps stimulated by prior experience with other entrepreneurs. It also includes a range of non-business owning freelancing and subcontracting activity, involving sequential short-term spells of ‘dependent’ contracting with purchasers of labour services, and it may include forms of so-called ‘gig economy’ working, for example through internet platform-based organizations such as Uber and Deliveroo. So in the UK self-employment growth may reflect flexibilization strategies and lowering of job quality on the part of employers. This is in the context that the value of employee tenure is reduced (for employers and possibly for some employees, such as younger ones) through the use of digital worker surveillance and rating. So employers have less pressure to provide secure, good quality jobs. However, as discussed in the paper, there is considerable disagreement on how to define job quality and how to measure it (Burchell *et al.*, 2014).

In undertaking this research we make a number of contributions. Firstly, we show that entry into self-employment is associated with changes in job characteristics which in turn might reflect wider levels of employee (dis)attachment to organizational employers. Secondly, whereas earlier research has focused mainly on the subjective and problematic notion of job satisfaction as an appropriate indicator to identify the level of employer attachment, we argue that organizational (dis)attachment can also be seen in a range of objective job characteristics. Employer-provided training is one important means to increase attachment. Specifically, we show that the impact of training on self-employment entry depends asymmetrically on the source of that training. Thirdly, this leads us to re-assess earlier research which argues that positive prior experience as an employee stimulates self-employment. We argue that reduced attachment provides an alternative explanation for the alleged ‘entrepreneurial transmission’ effect, through which, holding other important personal characteristics constant, employees in smaller organizations are more likely to enter self-employment. Small firms are not, as others have argued, a fertile training ground for budding entrepreneurs. Finally, we also demonstrate that those who enter self-employment are unlikely to realise improvements in various dimensions of their working conditions. We present new quantitative evidence which provides strong support for these ideas, drawn from secondary analysis of a large UK population-representative longitudinal survey. All this speaks to debate on whether contemporary preoccupation with business start-up policies, if they have any discernible impact on employment patterns, only seeks to encourage too much new venturing, and whether the resources directed towards encouraging entrepreneurship would be better redirected towards improving employment systems.

2. Literature review and hypothesis development

Self-employed is often equated with economic opportunity-seeking activity. Since the majority of the self-employed operate as sole-traders, and a proportion of these work as subcontractors or freelancers for other employers (Román *et al.*, 2011),

there is controversy about whether self-employment is a useful surrogate for entrepreneurship (Parker, 2018). We do not propose to rehearse this debate in depth. However, self-employment choices can be framed through a range of drivers, relating to personal characteristics and resources, the external environment, as well as the characteristics of prior organizational employment. This breadth of influence explains heterogeneous patterns of self-employment activity. Drivers can entail both opportunity ('pull') and necessity ('push') effects. Therefore, individual transitions into self-employment, will reflect the balance and interplay of these factors, as well as personal accumulation of knowledge and resource (Douglas and Shepherd, 2000; Simoes *et al.*, 2016; Parker, 2018).

2.1 Economic and social drivers

Conceptualising self-employment as opportunity-seeking behaviour finds the clearest expression in occupational choice models, in which self-employment choices are made on the basis of anticipated positive pecuniary benefits over organizational employment (Hamilton, 2000; Simoes *et al.*, 2016). This is also consistent with matching models in which career choices are derived from expectations of the 'offer' in entrepreneurship (Failla *et al.*, 2017). Utility-maximising choices need not focus solely on extrinsic financial rewards. Models entertain a range of extrinsic and intrinsic, pecuniary and non-pecuniary drivers (Eisenhauer, 1995; Douglas and Shepherd, 2000; 2002). These can include elements of personal assessment of current employment conditions, effort and risk required, as well as opportunities to exercise personal autonomy (Amit *et al.* 2000; Hamilton, 2000; Croson and Minniti, 2012; Guerra and Patuelli, 2016).

The utility of any prospective opportunity might depend on the 'pull' of an external market for the product or service proposed (Audretsch *et al.*, 2006), even if alertness to opportunity depends on the abilities and resources of the prospective entrepreneur. For the individual, transitions into self-employment can rise when and where levels of economic prosperity are higher (Román *et al.*, 2013). Favourable economic conditions create market opportunity and reduce the risks of start-up. Conversely, as unemployment rises opportunities diminish (Thurik *et al.*, 2008), even though the hiring of resources, such as labour, may become easier. Self-employment decisions might thus reflect a balance between the 'pull' of economic opportunity and the 'push' from the absence of good paid employment opportunities. Where choice is available, individuals choose self-employment as the least-worst available fit between personal resources and the external environment.

A large volume of research also investigates differing propensities for self-employment amongst different groups, reflecting the high level of heterogeneity amongst the self-employed, and the effect of the interplay of different characteristics on the balance of 'push' and 'pull' factors. These include, *inter alia*, differing self-employment rates amongst men rather than women, amongst women with childcare responsibilities compared to those without, amongst older more experienced workers compared to the young, amongst certain ethnic minority and migrant groups, amongst rural compared to urban populations, amongst those with or without formal educational qualifications. An extensive review of all these factors can be found in Parker (2018). These differences are important, and potentially statistically significant especially in very large datasets where fine grain sub-sample analysis is possible. These are considered as control factors in our analysis. However, they are not the primary focus of the paper.

High and growing rates of self-employment in the UK are also likely to reflect particular institutional structures in the labour market which have facilitated labour flexibilization. Across Europe few other countries (for example the Netherlands) have witnessed a similar upward trend in self-employment. Both entrepreneurship and labour market research recognise the importance of institutional factors. These may promote opportunity-driven business start-up activity, for example through the provision of general business management skills alongside occupational skills in formal vocational apprenticeship training, as in Germany, or may limit 'dependent' self-employment through legal restrictions on particular forms of employment contracting, and the institutional encouragement of long term employment relationships, as in many European countries. Again, while such considerations might be very important in any cross-country analysis of self-employment, they are not the primary focus of the present work.

2.2 Organizational drivers

Previous research has highlighted the significance of current employment in influencing decisions about entry into self-employment (Sørensen, 2007; Özcan and Reichstein, 2009). This work suggests that employees of small, private-sector firms are themselves more likely to become business owners – a 'small firm effect' (Elfenbein *et al.*, 2010). There are, however, a number of explanations for this finding. One asserts that small firms transmit entrepreneurial intent to employees, as a form of knowledge transfer, because they provide more relevant experience, access to tacit knowledge and acculturation (Parker, 2008). By contrast, large and public sector employers may stifle entrepreneurialism through bureaucratic structures and practices (Özcan and Reichstein, 2009). Segmented labour market theory provides a different explanation. Employees in small firms compete less effectively for good jobs in larger organizations, and are therefore more likely to enter self-employment (Parker, 2018). Finally, any empirical association could reflect selection rather than causality – small firms attract more entrepreneurially orientated job applicants (Elfenbein *et al.*, 2010). Selection effects might reflect prior levels of over-optimism and other personality traits and pathologies amongst those predisposed towards starting businesses (Dawson *et al.*, 2014).

We propose a different explanation. Whilst working in a small firm might be intrinsically rewarding, other factors such as pay and job security can be less attractive compared to the employment offer in larger organizations. Consequently, it is important to control for the moderating impact of any entrepreneurial transmission effect in assessing the extent to which job quality in prior employment drives self-employment decisions. Furthermore, the transmission effect might increase the 'push' effect of any impact of poorer job quality on increasing the likelihood of separation into self-employment, if these two factors operate in a mutually reinforcing manner.

The wider importance of job quality has emerged from international attempts by organizations such as the ILO and the EU to create conceptually sound and internationally comparable indicators, for example, to support the evaluation of decent work policies. Employment flexibilization, particularly in the UK, has led to concerns about falling job quality (Green *et al.*, 2010). Job quality has been the subject of an extensive and detailed literature (Kalleberg, 2011; Burchell *et al.*, 2014). Theoretical perspectives on job quality are well-grounded, informed by psychological, sociological and economic standpoints on what might be deemed to constitute a 'good job', issues

which have in particular been taken up in wider debates about the nature of capitalism (Gallie, 2007; Crouch, 2012). However empirical implementation strategies have been wide-ranging and have proved contested (Warhurst *et al.*, 2012; OECD, 2016). There is debate on whether the set of indicators of job quality should focus solely on objective or extrinsic characteristics such as pay, hours, job security. There is considerable concern that subjective or intrinsic characteristics such as workplace relations, levels of job autonomy or indicators of job desirability might be influenced by self-reporting biases, and that those biases might be subject to adaptive preferences. This concern also extends to the use of job satisfaction scores as an element of measured job quality (Brown *et al.*, 2012). Thus, the choice of what to include in a composite job quality indicator varies widely. Although not a concern for the present UK-focused analysis, the need to produce reliable internationally comparative measures, and the challenges inherent in agreeing the construction of composite indicators are also important issues. Some empirical approaches prefer to focus on a narrow set of objective extrinsic indicators; others identify distinct domains of quality, for example, employment security, income security, workplace experience, skills development (Green *et al.*, 2013). One recent study also introduces dynamic considerations relating to employment history (Berloff *et al.*, 2019). The general-purpose longitudinal household survey data used in the analysis in this paper was not designed to provide a wide-ranging composite index of job quality, as for example was the case with the European Working Conditions Survey (Green *et al.*, 2013). Consequently, we adopt a pragmatic based around the availability of particular questionnaire items in the data source used, with each proposed indicator of different aspects of employment circumstances entered individually as factors rather than as an element of an (inevitably incomplete) composite index.

- The importance of pay in organizational employment is already embedded within the literature on the relative pecuniary benefits of entrepreneurship (Douglas and Shepherd, 2000). However, absolute as well as relative remuneration may impact on perceived satisfaction (Clark and Oswald, 1996; Guerra and Patuelli, 2016), even if pecuniary factors are not necessarily pre-eminent in decisions to remain in self-employment after entry (Hamilton, 2000).
- Long hours will reduce organizational attachment if they contribute to stress and ill-health, whereas self-employment is seen as offering improved work-life balance (Georgellis and Yusuf, 2016), perhaps at the expense of higher earnings (Croson and Minniti, 2012). Similarly, long commuting times to work can increase stress and reduce overall life satisfaction (Stutzer and Frey, 2008), whereas self-employment, particularly if based around homeworking can reduce commuting stress, although perhaps at the expense of isolation (Daniel *et al.*, 2018).
- If salaried work entails temporary contracting and employment insecurity, this will lower employee attachment and experienced job quality (Green *et al.*, 2010) and may raise interest in entrepreneurship, despite self-employment itself requiring acceptance of higher risk (Douglas and Shepherd, 2002);
- Absence of collective voice in organizational employment suggests lower perceived levels of agency and autonomy, increasing the propensity to quit and raising interest in entrepreneurship (Guerra and Patuelli, 2016); although any observed relationship will depend on other individual and organizational contextual factors affecting decisions to join trades unions (Bryson *et al.*, 2004).

Finally, it should be noted that, at the societal level and beyond the direct agency of the employer, relaxation of employment protection regulations can adversely impact job quality (Román *et al.*, 2011).

2.3 *Reconceptualising organizational (dis)attachment as a 'push' driver*

Previous conceptualisations of 'push/pull' have assumed that 'push' arises exclusively from the experience of job loss (Román *et al.*, 2013). However, 'push' towards self-employment might also reflect dis-attachment resulting from quitting, because job quality across the range of dimensions above has fallen. Whether one regards such quitting activity as voluntary or involuntary is a moot point. Falling job quality may reflect long-run trends in organizational employment practice, or short-term responses to macro-economic austerity as employers seek to reduce non-wage labour costs.

The growth of dependent and 'gig-economy' self-employment can be seen, in this light, as a further manifestation of the push hypothesis (Muehlberger, 2007; Böheim and Muehlberger, 2009). In some contexts, for example, construction or internet-based platform businesses providing services such as taxi booking, fast-food delivery etc., less 'attached' employees have been required to switch involuntarily into sub-contracting self-employment. This transfers the risk of demand volatility to the employee (Katz and Krueger, 2016). Self-employment of this form may offer some limited benefits of increased autonomy from portfolio working across a range of clients, particularly for skilled professionals. Importantly, these are offset by the costs of exclusion from other expensive organizational employment benefits, including pension provision and social protection (Román *et al.*, 2011).

In reflecting this discussion, in support of this wider conceptualisation of 'push' entrepreneurship, we propose our two research questions:

RQ1. Is entry into self-employment is more likely where individuals have preceding experience of poor-quality organizational employment, after controlling for employer size effects?

RQ2. Does any small firm effect merely reinforce the 'push' effect of poor-quality organizational employment on the likelihood of entry into self-employment, rather than reflecting transmission of entrepreneurial intention?

Extrinsic job characteristics may or may not fully reflect attachment to the employer and therefore capture subjective job satisfaction. On the other hand, self-reported measures of job satisfaction conflate various constructs such as objective evaluation, affect and beliefs across a range of domains (Kalleberg, 1977; Weiss, 2002). Recent research identifies positive and negative psychological affect as mediators on the impact of job satisfaction on self-employment entry (Nikolaev *et al.*, 2020). Further influences arising from the working environment and job content, such as the quality of workplace peer-to-peer or peer-to-superior relationships, might also be important. Escaping work for a bad boss can form an important component of the intrinsic benefits of working for oneself (Douglas and Shepherd, 2000), consistent with higher reported satisfaction in self-employment arising from increased work autonomy (Schjoedt, 2009; Lange, 2012). In the absence of detailed measures of these conditions, and while noting the concerns described earlier, we use a reported job satisfaction indicator to signal potential additional information about job quality, after controlling for extrinsic indicators. We frame this in the following research question:

RQ3. Do low levels of perceived job satisfaction contribute to higher likelihood of entry to self-employment, after controlling for other objective indicators of job quality and employer size?

2.4 Training and employee (dis)attachment

Opportunity for career development is a further aspect of organizational job quality. Human capital models recognise that training investments can reinforce attachment. However, organizations may target training where returns are highest. They may invest less or not at all where less attached workers can more easily be replaced (Green, 2006; Burchell *et al.*, 2014). Falling levels of training, as in the UK context, are consistent with the increased casualization of organizational employment across a number of dimensions (Georgellis and Lange, 2007; Green *et al.*, 2010). They reflect pressure on organizations to switch towards more precarious forms of employment relationship such as freelancing, internet-platform working and other forms of dependent contracting (Kalleberg, 2011; Williams and Lapeyre, 2017), which in turn form a risky basis for subsequent business start-up.

Access to some forms of training might also increase the likelihood of dis-attachment. Training can support the transition into self-employment, by allowing the accumulation of general skills, such as technical and professional expertise (Lechmann and Schnabel, 2014), or generic business management skills (Kuratko, 2005). Formal training programmes are highly heterogeneous. Some will be highly specific to particular roles or occupations. Training provided and funded by the employer will be different in its effect from training sourced off-the-job. Smaller employers may, for reasons such as economy of scale in the provision, provide less training (Green *et al.*, 2016). Some employees will source training to support job search, or explicit training to prepare for self-employed business ownership, although other forms of formal training, for example in extended vocational schemes such as apprenticeships, may implicitly support later business start-up activity, if they incorporate training on general management skills. Therefore, both the purpose and source of training are important. Analysis must recognise this to avoid ambiguous conclusions. We summarise this as follows:

RQ4. Is entry into self-employment is more or less likely where individuals do not have prior opportunities for employer-provided training, and where they might have sought out opportunities to undertake external training?

3. Data source and method

3.1 The UK context

The high level of self-employment in the UK was noted in the introduction. This reflects sustained growth since a reversal in trend in the UK that took place in the late 1990s. Prior to this point, and prior to the development of employment flexibilization strategies drivers of self-employment may have been different. There has been some acceleration in trend over the past decade or so. One reading is that, as recovery from the financial crisis of 2008–9 progressed, opportunities for business start-up improved. However, a prolonged squeeze on real wages has characterised organizational employment since the crisis, and, despite falling official unemployment rates, led to mismatch between available and desired patterns of employment (Bell and Blanchflower, 2018). Job-related training provision for the employed has also been in decline. UK Annual

Population Survey data show that the proportion of workers aged 16 to 64 receiving job-related training in the previous 16 weeks fell from 21% in 2007 to 18% a decade later. Over a longer time period 1997 to 2012, other evidence shows a larger sustained fall in the incidence and intensity of employer-provided training (Green *et al.*, 2016). A range of explanations might account for these trends, including increased targeting of and efficiency in training delivery (Mason and Bishop, 2015), or substitution of formal job-related training for prior qualifications or experiential learning. Official data on job quality and satisfaction, consistently defined and measured, are problematic. Trend analyses rely on periodic survey data.

3.2 *The Understanding Society survey instrument*

We address our research questions through a quantitative analysis of self-employment transition data within Understanding Society (USoc), the UK's main household longitudinal survey (University of Essex *et al.*, 2017). USoc was initiated in 2009 with a target sample of 40,000 households drawn from a stratified, clustered sample of UK residential addresses. The sample design incorporates household members from an earlier longitudinal survey as well as over-sampling of ethnic minorities. Cross-sectional weights allow correction for sample design features to maintain population representativeness. The achieved wave 1 sample of 39,802 households was collected over the two-year period 2009–10 and comprises data on 101,086 individuals. These individuals were re-interviewed annually, across two-year overlapping periods of data collection.

Seven waves of data covering the period 2009–10 to 2015–16 are used. As in similar surveys some sample attrition occurs, particularly between the first two waves. This is treated as random, and any impact on representativeness can be handled through sample weighting. By wave seven, 27,838 households containing 60,035 individuals of all ages remained in the survey, reflecting the balance of attrition, re-contact and household splitting.¹ Sample design draws on extensive prior and international experience and scientific analysis (see Buck and McFall, 2012 and references therein), and subject to initial and ongoing pretesting using an 'innovation' sample (not included) as well as item and data collection piloting. Individual questionnaires are detailed, covering a range of social and economic topics, with many items designed to ensure validity and consistency with a wide range of other data sources.

Our approach is to explain the probability of transition from paid employment into self-employment, as observed between annual waves. Year-to-year transitions are relatively infrequent occurrences in population-representative samples, and longitudinal data are essential to identify separations and associate these with prior-dated information on potential drivers. We restrict the sample to adults aged between 18 and 59 years of age at the point of the first survey wave, and who are initially in paid employment. Thus, we track a population cohort as they reach ages between 24 and 65 over a seven-year period. The longitudinal nature of the survey allows us to link

¹ A small financial incentive is offered to maintain contact if households change the address. In common with other household longitudinal surveys internationally, precise follow-on rules are applied. Individuals who join original households are added to the survey. Those leaving original households to form new ones (around 5% of the total per annum) are also retained. Children in original households enter the main sample on reaching adulthood. Precise dates of the interviews are recorded.

transitions into main job self-employment to prior dated information about respondents' previous employment.² Self-employment status in the survey is self-reported but is checked against tax registration status by the survey agency interviewers. The nature of the self-employment (employer, sole-trader, freelancer or subcontractor) is identified from additional questionnaire items. In most cases, we identify transitions from year-on-year changes in status. We identify a small number of additional temporary transitions from between-wave employment histories. In [Table 1](#) we report details of the survey data, including rates of self-employment and rates of transition from employment into self-employment and from either unemployment or inactivity into self-employment from year to year.³

A number of features stand out. The rate of self-employment increases over the survey from just over 12% of the economically active to over 14%, consistent with official UK labour market survey data. Pooling across waves provides almost 100,000 observations of year-to-year employment status. The vast majority (93%) remain in paid employment either in the same job or with the same employer or from one employer to another. A total of 6,948 separations from paid employment are observed, the majority into unemployment or inactivity. However, 1,531 are into self-employment. Of these latter, 1,050 are into self-employed business ownership,⁴ the remainder into freelancing, sub-contracting or other forms of dependent self-employment. There is growth in the numbers and rate of transitions into self-employment over the six wave-to-wave observations. Transitions into unemployment or inactivity fall over time, consistent with the rising UK economic activity rate. Finally, data in the bottom row of the table show 1,237 sample transitions from unemployment or inactivity into self-employment over the sample period, representing a stable 0.9 to 1% of those aged 18 to 59 in the first wave. This is important because it shows that a significant proportion of the self-employed become so not from leaving an organizational employment career but from (re)entry into the labour force from unemployment, education or caring for dependents. However, this group are not the subject of further analysis in this paper.

The proportion of the self-employed aged between 18 and 59 working as self-employed business owners, sole-traders or employers, remained constant over the survey period, at just over 75% of the total. The proportion who are employers fell from 21% to 16% of the total, reflecting the influx of younger and less experienced business owners. The remainder of the self-employed are subcontractors (around 8% of the total), freelancers (also around 8% of the total) or other forms of dependent contractor. [Table A1](#) in the Appendix provides further detail on the characteristics of the self-employed in comparison to the employed at the end of the survey. The self-employed are less likely to be female and even less likely to be female with children, are on average almost 4 years older, and are more prevalent in minority groups, notably non-British whites and South Asians, as well as amongst those not born in the

² For clarity we omit second job self-employment from the analysis. It should however be noted that in any year in the survey those who have a second job in self-employment in addition to a main job in paid employment amount to around 20% of all who are self-employed.

³ Inactivity and unemployment are conceptually distinct, although the definition may be blurred by factors such as eligibility for social security benefits. They are combined for illustrative purposes, and because distinct transitions between registered unemployment and self-employment (or vice versa) are small in number in the survey.

⁴ Defined as running a business or professional practice alone or in partnership, or working as a sole-trader for oneself, on the basis of additional survey questionnaire items.

Table 1. Sample structure

	Wave 1 2009–10	Wave 2 2010–11	Wave 3 2011–12	Wave 4 2012–13	Wave 5 2013–14	Wave 6 2014–15	Wave 7 2016–17	Combined
Sample aged 18 to 59	24,588	25,806	23,475	22,511	21,509	21,777	20,126	
Overall activity rate, employed or self-employed ^a (% of all aged 18 to 59)	73.5	75.2	75.2	76.1	76.6	75.9	75.4	75.3
Self-employment rate ^a (% of employed + self-employed aged 18 to 59)	12.3	12.4	13.2	13.4	13.8	14.3	14.6	13.3
Remained in employment from previous wave to current wave N (% of employed in previous wave)	–	14,985 (92.3)	16,943 (92.7)	16,283 (93.3)	16,002 (93.7)	14,320 (93.2)	14,378 (93.1)	92,911 (93.1)
Transitioned from employment in previous wave to self-employment N (% of employed in previous wave)	–	202 (1.24)	252 (1.38)	257 (1.48)	291 (1.70)	276 (1.80)	253 (1.64)	1,531 (1.53)
Transitioned from employment in previous wave to self-employed business ownership N (% of employed in previous wave)	–	143 (0.9)	168 (0.9)	186 (1.1)	196 (1.2)	179 (1.2)	178 (1.2)	1,050 (1.1)
Transitioned from employment in previous wave to unemployment or inactivity N (% of employed in previous wave)	–	1,050 (6.5)	1,080 (5.9)	918 (5.3)	789 (4.6)	763 (5.0)	817 (5.3)	5,417 (5.4)
Total wave to wave transitions from employment	–	16,237 (100.0)	18,275 (100.0)	17,457 (100.0)	17,082 (100.0)	15,359 (100.0)	15,488 (100.0)	99,858 (100.0)
Transitioned from unemployment or inactivity to self-employment (% of all aged 18 to 59 in previous wave)	–	198 (0.9)	225 (0.9)	236 (1.0)	209 (0.9)	176 (0.9)	193 (0.9)	1,237 (0.9)

^aPercentages calculated using USoc annual cross-section population weights.

Notes: sample restricted to 18 to 59 years of age or less. Those who remained in employment from the previous wave to the current wave include all who remained in the same job, or changed job with same employer, or changed employer but remained in paid employment.

Source: author computations from USoc Waves 1 to 7.

UK. They are also more likely to have no formal educational qualifications, although equally as likely to be graduates as the employed. There is also evidence of regional disparities; the self-employed are more prevalent in London, the South East and the South West, and less in the north and midlands of the UK.

3.3 Method

We investigate our hypotheses using a multivariate discrete time duration ('hazard') model to explain entry into self-employment, using the method described in Allison (1982) and Jenkins (1995). This modelling approach is well suited to longitudinal data observed at discrete annual intervals, as in USoc. Due to a 'cancelling out' effect in the statistical likelihood function, the method is able to account for left censoring of sequences potentially leading to self-employment entry (Jenkins, 1995). We construct a binary dependent variable taking a value of one for individual-wave observations that correspond to entry into self-employment since interview in the previous wave. Because the empirical formulation is a discrete-time counterpart to a duration or 'failure-time' model, once entry to self-employment has occurred for a particular individual, we drop any subsequent wave observations. For those who never become self-employed, the dependent variable is a sequence of zeros, i.e., the sequence is treated as censored. The estimation model takes the following form:

$$h_{it} = \text{prob}[TSE_i = t | TSE_i \geq t; X_{it}]$$

where h_{it} is the hazard rate, the probability of individual i entering self-employment at time t , conditional on not having entered up to that point, and explained by a set of covariates, X .

We complete the empirical formulation by specifying the functional form of the relationship between this hazard and elapsed time. This is a complementary log-log form, analogous here to the popular proportional hazards formulation (Jenkins, 1995):

$$h_{it} = 1 - \exp \{ - \exp [\theta(t) + \beta X_{it} + \varepsilon_i + v_{it}] \}$$

By focusing on the single 'risk' of separation into self-employment, we therefore control for the impact of elapsed time. Failure to do so may bias estimates of the association with particular covariates. For flexibility, we model the baseline $\theta(t)$ in semi-parametric form using binary time variables. The model therefore explains the probability of transitioning from paid employment into self-employment at a given point in time, conditional on not transitioning up to that point. This probability depends on prior-dated covariates, as in the first approach. We can also include individual-specific random effects (frailty), ε_i . These allow an assessment of the potential impact of any unmeasured individual latent ability on the transition probability. We use Stata version 14 for model estimation.

3.4 Explanatory and control variables

As noted, selection effects can work in determining who appears more likely to enter self-employment. Extant research investigates the contribution of a wide range of other personal characteristics reflecting observed heterogeneity across the self-employed, and likely to control for selection effects (see Parker, 2018 and Simoes *et al.*, 2016 for surveys). Such characteristics can include demographic factors; gender differences (Blanchflower, 2000; Saridakis *et al.*, 2014); increased propensities of ethnic minorities

towards self-employment (Clark and Drinkwater, 2000); the relationship between age and accumulated experience or confidence to pursue entrepreneurship (Zissimopoulos and Karoly, 2007; Caliendo *et al.*, 2014; Kautonen *et al.*, 2017). These also include the contribution of human capital in facilitating start-up activity, acquired through formal education, background, or through informal networks and other sources of tacit knowledge (Fairlie and Robb, 2007), as well as personal wealth serving as a direct source of start-up capital or as collateral (Hurst and Lusardi, 2004; Disney and Gathergood, 2009). Previous work has also investigated the contribution of particular psychological traits in supporting or hindering entrepreneurial activity. Personality may be significant in achieving fit with the choice of working for oneself or in salaried employment, in finding fulfilment in entrepreneurship as a career choice, or because other agents, such as financial lenders, may favour a particular personality. We note that other studies have investigated the explanatory power of 'Big 5' personality traits (openness, conscientiousness, extroversion, agreeableness and neuroticism), finding associations with entrepreneur status (Zhao and Seibert, 2006), or self-employed status (Caliendo *et al.*, 2014). Controlling for background and personality is therefore important in identifying whether self-employment attracts particular individuals. In our analysis self-employment transition is also conditioned by these characteristics.

As explained earlier we include a set of prior-dated variables to capture the previous paid employment circumstances. Our choice is constrained by the USoc questionnaire. We do not attempt to aggregate our available indicators into a single index. Definitions are set out in Table 2. For estimation purposes we restrict the analysis to those individuals for whom covariate information is complete, leading to a maximum available sample of 73,640 year-person observations on 18,072 individuals.⁵ We include previous employer size in the form of binary indicators constructed from grouped responses, with the largest used as the reference category. Various objective indicators capture different dimensions of previous organizational employment. These are measured while the interviewee was in employment in the survey wave prior to any transition. These comprise binary indicators for the incidence of long working hours, low pay, employment on a non-permanent contract, membership of a trade union recognised in the workplace, and incidence of training activity in the previous year firstly provided by the employer as part of activity in work, and secondly obtained outside the workplace. A Likert scale score for overall job satisfaction captures individual subjective assessment of previous employment.⁶ One-digit level industrial sector dummy variables are also included to capture any sectoral differences in the 'risk' of transition. We also include other variables to control for variation in personal and background characteristics (Table 2). These include gender, age, age squared (to allow for non-linear association), ethnic group membership (with white British as the reference group) and level of education (with no listed formal qualifications as the reference group).⁷ We use ten region dummy variables to capture any variation in the influence

⁵ Means for the model estimation sample, including by transition subgroups, are provided in Table A2 in the Appendix.

⁶ While it might be desirable to investigate satisfaction with particular elements of employment experience, the USoc questionnaire schedule does not make this possible as it includes only one job satisfaction item.

⁷ As noted, previous research has found evidence for the role of the parental background. USoc asks interviewees about parental occupation when the interviewee was aged 14, but not explicitly about self-employment status. Preliminary analysis revealed no relationship between parental background as an employer and self-employment transition.

Table 2. Covariate descriptions

Covariate:	Description:
<i>Organizational employment characteristics:</i>	Questionnaire items are included in all survey waves unless stated otherwise.
Employer size	Employing organization size, grouped responses recoded to the following three category frame: <ul style="list-style-type: none"> • Under 49 employees • 50 to 199 employees • 200 or above employees (reference category)
Public sector employer	1 if employing organization is a central or local government organization or public body, 0 if not.
Long hours	Binary indicator equals 1 if self-reported usual weekly hours of work exceed 40, 0 otherwise.
Low pay	Binary indicator equals 1 if usual gross weekly earnings are below 70% of the median for the local area of residence by gender, 0 otherwise.
Temporary contract	Binary indicator equals 1 if employment contract is non-permanent (including casual working or agency working), 0 otherwise.
Trade union member	1 if member of a trade union which is recognised in the current workplace for negotiating pay and conditions for the job undertaken by the respondent, 0 otherwise. Asked only in Waves 2 and 4.
Travel to work time	Usual journey time to work in minutes. Coded zero if working from home.
Training provided by employer	Received training in the past year (excluding training for health and safety or for leisure/hobby purposes) and, in the case of any of the three longest periods of training, that training was provided by employer. Asked in all waves from Wave 2 onwards.
Training from non-employer source	Received training in the past year (excluding training for health and safety or for leisure/hobby purposes) and, in the case of all of the three longest periods of training, that training was provided outside the workplace. Asked in all waves from Wave 2 onwards.
Job satisfaction	Satisfaction with present job overall, answered on 7 point Likert scale, 1 = completely dissatisfied, 7 = completely satisfied.
Industry	Binary indicators of 1-digit level UK 2007 Standard Industrial Classification of employer business activity – 10 categories (reference category: Arts, Entertainment and Other Service Activity).
<i>Individual characteristics:</i>	
Female	Self-reported gender: female = 1, male = 0
Age	Age at interview in whole years
Ethnicity	Self-reported ethnicity, recoded to reduced frame as follows: <ul style="list-style-type: none"> • White British (reference category) • White non-British • Black or mixed race African/Caribbean • Black or mixed race South Asian • Chinese or other Asian • Other ethnicity not in the above categories Asked in the first wave in which individual enters the survey.

Table 2. *Continued*

Covariate:	Description:
Highest education level	<p>Highest level of educational qualification achieved, coded to the following frame:</p> <ul style="list-style-type: none"> • University/college degree at undergraduate diploma level or above • Vocational college-level qualification, including nursing or teaching • School examinations at age 17 or 18 (UK A-levels or equivalents) • School examinations at age 16 (UK GCSEs since 1988 /O-levels or equivalents up to 1987) • None of the above qualifications (reference category) <p>Derived survey variable, calculated from information asked in the first wave in which individual enters the survey, with subsequent checks for additional education undertaken</p>
Personality traits	<p>‘Big 5’ personality traits, each calculated as average of three individual questionnaire items (John and Srivastava, 1999), item response on 7 point Likert scales (1 = does not apply at all...7 = applies to me perfectly).</p> <ul style="list-style-type: none"> • Openness • Conscientiousness • Extroversion • Agreeableness • Neuroticism
Self-efficacy	<p>Asked in Wave 3 of survey only.</p> <p>Short-form generalized 10 item self-efficacy scale (Schwarzer and Jerusalem, 1995), item response on 4-point Likert scales (not at all true/hardly true/moderately true/exactly true). Cronbach alpha for sample = 0.904.</p>
Investment income	<p>Asked in Wave 5 of survey only.</p> <p>Self-reported earnings (interest, stock dividends etc) on person investments over the past year. Asked in all survey waves. £1,000s</p>
Housing equity	<p>Self-reported estimate of value of main home, asked in all survey waves, minus sum of any outstanding mortgage loans secured on the property. Assigned to zero if not owner-occupier. £100,000s</p>
Region	<p>Binary indicators for UK Government Office Region of residence: London (reference category), South East, South West, East of England, East Midlands, West Midlands, Yorkshire and the Humber, North East, North West, Scotland, Wales</p>
<i>Local economic opportunity:</i> Rural location	<p>Derived variable from respondent's address: 1 if falls outside urban settlement area of 10,000 or more population, 0 otherwise.</p>
Local area unemployment rate	<p>Percentage unemployment rate in local authority district of residence in month of survey wave interview, obtained from UK Office for National Statistics, linked using derived coding of local authority from household addresses.</p>
Local area weekly earnings	<p>Median weekly earnings, by gender, in local authority district of residence in year of survey wave interview, obtained from UK Office for National Statistics, linked using derived coding of local authority from household addresses.</p>
Local area median house prices	<p>Median house prices in local authority district of residence in year of survey wave interview, obtained from UK Office for National Statistics, linked using derived coding of local authority from household addresses.</p>

of regional entrepreneurial culture on individual choice, along with a rural location indicator since levels of self-employment tend to be higher in rural areas for reasons of economic structure and culture.

'Big 5' personality data are collected in USoc, derived from responses in Wave 3 to a pre-validated short-form schedule of items (see Table 2). We treat these as time-invariant covariates, reasonable given earlier research (Cobb-Clark and Shurer, 2012). Entrepreneurial intentions are widely conceptualized by psychologists in terms of perceived self-efficacy (Parker, 2018). Respondents are asked to complete a 10-item generalized self-efficacy schedule (Schwarzer and Jerusalem, 1995) in wave 5 of the survey. Preliminary analysis suggests high reliability (Table 2) and we include the scale as a further time-invariant personal characteristic.

We control for variation in personal financial resources through two variables – one measuring annual income from personal financial investments (in the absence of comprehensive annually recorded wealth information in the survey) and the other an estimate of personal housing wealth (self-reported home value minus any estimated outstanding home loans). A further variable controls for spatial and temporal variation in local external market opportunities. We link the unemployment rate in the local authority district through individual residence location coding. This variable may also capture the extent to which lack of availability of alternative labour market opportunities pushes individuals into self-employment (Román *et al.*, 2013; Henley, 2017).

4. Findings

In Table 3 we report cross-tabulations for indicators of prior job quality by transition status. On nearly all indicators those who transition have lower prior job quality. Those transitioning to business ownership are well over twice as likely to have had a temporary contract, almost twice as likely to have reported working long hours, a third more likely to have reported low pay, and over two-thirds less likely to have been represented by a trade union. In some instances, the differences between non-transitioners and all self-employed are more pronounced, suggesting that the dependent self-employed are even more likely to have experienced poor-quality employment circumstances. This provides preliminary evidence for RQ1. Evidence for RQ3 is also indicated in lower prior job satisfaction and for RQ4 in significantly lower prior employer training provision, and slightly higher acquisition of training off the job. The self-employed are 40% less likely to have benefitted from employer-provided training. Findings are similar for those who transition out of economic activity, suggesting that push from poor quality employment into self-employment shares features in common with layoffs more generally. Summary statistics from analysis-of-variance tests show that the differences in variable means between the transition groups are statistically significant, although only marginally so for travel to work time.

In Table 4 we report findings from the regression analysis. Column (1) presents a base specification that includes all the control variables, including those which capture a small firm effect. In this model the reported test statistic shows that a random effects specification is preferred, and marginal effects for this are reported. These measure the impact on the conditional probability of transition of the presence of a binary covariate factor, or the impact of a change of one unit in a continuous covariate. The small firm effect here is large. As the 'raw' sample probability of self-employment entry is 0.013 (the second row of the table), the impact of employment in an organization with less

Table 3. *Prior job quality by transition status*

	(1)	(2)	(3)	(4)	
Waves 2 to 7 combined	Non-transitioners	Transitioners to self-employment	Transitioners to self-employed business ownership	Transitioners to unemployment or inactivity	ANOVA F-statistic
In previous wave:					
Long weekly hours (%)	11.5	21.4	21.6	9.3	79.0***
Low pay (%)	40.1	43.7	46.1	62.2	482.2***
Temporary contract (%)	4.8	13.1	12.0	17.0	749.4***
Trade union member (%)	26.0	8.6	8.3	15.6	238.1***
Travel to work time (minutes)	25.6	25.6	24.3	25.4	0.2
Training provided by employer (%)	23.6	14.2	14.0	14.9	133.7***
Training from non-employer source (%)	14.1	17.4	16.8	17.0	21.3***
Job satisfaction score	5.25	4.89	4.97	4.80	258.0***

Notes: sample restricted to 18 to 59 years of age, weighted by cross-sectional population weights. ANOVA tests differences between column 1, 2 and 4; *** denotes p -value < 0.01.

Source: author computations from USoc Waves 1 to 7.

Table 4. Self-employment transition discrete time hazard regression

	(1) Transition to any self-employment	(2) Transition to any self-employment	(3) Transition to any self-employment	(4) Transition to self-employed business ownership
No. of transitions	969	926	926	633
Transition sample mean	0.0132	0.0129	0.0129	0.0088
<i>Marginal effects:</i>				
<i>Organizational employment characteristics:</i>				
Employer size † (reference: 200+ employees)				
0 to 49 employees	0.0105***	0.0064***	-0.0013	-0.0015
50 to 199 employees	-0.0012	-0.0008	-0.0004	-0.0003
Public sector employer †	-0.0114***	-0.0055***	-0.0057***	-0.0050***
Long hours †		0.0031***	-0.0015	-0.0013
Low pay †		0.0014	0.0005	0.0013
Temporary contract †		0.0130***	0.0164***	0.0103***
Trade union member †		-0.0092***	-0.0081***	-0.0045***
Travel to work time †		-0.0003	-0.0006*	-0.0007**
Job satisfaction †		-0.0025***	-0.0033***	-0.0024***
Training provided by employer †		-0.0085***	-0.0062***	-0.0047***
Training from non-employer source †		0.0093***	0.0102***	0.0061***
<i>Small firm effect (0 to 49 employees) interactions:</i>				
Small firm × Long hours †			0.0064**	0.0039*
Small firm × Low pay †			0.0031	0.0008
Small firm × Temporary contract †			-0.0055**	-0.0041*
Small firm × Trade union member †			-0.0024	-0.0024
Small firm × Travel to work time †			0.00006	0.00005
Small firm × Job satisfaction †			0.0014**	0.0012***
Small firm × Training provided by employer †			-0.0042*	-0.0017
Small firm × Training from non-employer source †			-0.0017	-0.0001
<i>Individual characteristics:</i>				
Female †	-0.0076***	-0.0058***	-0.0058***	-0.0041***
Age	-0.0025***	-0.0009***	-0.0008***	-0.0005***
Age squared	0.00003***	0.00001***	0.00009***	0.000005***
Ethnicity (reference: white British)				
- White non-British †	0.0053*	0.0027	0.0028	0.0018
- African/Caribbean †	-0.0060*	-0.0054**	-0.0054**	-0.0032

Table 4. *Continued*

	(1) Transition to any self-employment	(2) Transition to any self-employment	(3) Transition to any self-employment	(4) Transition to self-employed business ownership
- South Asian ‡	0.0042*	0.0035**	0.0036**	0.0037***
- Chinese/other Asian ‡	0.0070*	0.0042	0.0042	0.0039*
- Other ‡	-0.0045	-0.0041	-0.0042	-0.0072
Highest education level (reference: no qualifications)				
- University/college ‡	0.0027*	0.0015	0.0016	0.0014
- Vocational college level ‡	-0.0018	0.0004	0.0007	0.0009
- School aged 18 ‡	-0.0049**	-0.0048***	-0.0046***	-0.0036***
- School aged 16 ‡	-0.0036**	-0.0027**	-0.0026**	-0.0015
Personality trait: Openness ‡	0.0033***	0.0024***	0.0024***	0.0016***
Personality trait: Conscientiousness ‡	-0.0040***	-0.0026***	-0.0025***	-0.0021***
Personality trait: Extroversion ‡	0.0006	0.0010***	0.0010***	0.0007**
Personality trait: Agreeableness ‡	-0.0019***	-0.0012***	-0.0011**	-0.0007*
Personality trait: Neuroticism ‡	-0.0019***	-0.0017***	-0.0016***	-0.0015***
Self-efficacy ‡	-0.0013***	-0.0008**	-0.0008**	-0.0002
Investment income †	0.0001	0.0009**	0.0009**	0.00007**
Housing equity †	0.00003	0.00004	0.00004	0.00004
<i>Local economic circumstances:</i>				
Rural location †	0.0051***	0.0039***	0.0039***	0.0023***
Local area unemployment rate (%) †	-0.0009**	-0.0006**	-0.0006**	-0.0007***
Wald test of small firm job quality interaction terms Chi ² (8)			25.17***	18.33**
Rho - proportion of error variance contributed by individual heterogeneity (standard error in brackets)	0.6591 (0.0774)***	0.0002 (0.0011)	0.0002 (0.0012)	0.0001 (0.0005)
Random effects	Yes	No	No	No
LogL	-4933.2	-4543.0	-4529.3	-3340.1
Wald test of regression significance Chi ² (k)	565.5***	14757.3***	14666.4***	11961.5***
Sample size	73,640	71,576	71,576	71,576
No. of individuals	18,072	17,906	17,906	17,906

Notes: Sample - all observations on individuals aged 18 to 59 years at Wave 1m initially in paid employment, an average of 4.0 observations per individual. Regression includes regional controls (10) and 1-digit standard industrial classification controls † (9) and hazard baseline six-monthly time controls (12). ‡ denotes covariate which is observed once and is time-invariant. † denotes covariate measured in the previous wave to the dependent variable observation. Coefficient standard errors adjusted for clustering by individual. * denotes p -value < 0.1 , ** < 0.05 , *** < 0.01 .

Sources: author computations from USoc Waves 1 to 7.

than 50 employees is both quantitatively and statistically significant. It increases the likelihood of self-employment entry by 80% ($((0.0105 \div 0.0132) \times 100)$). Previous employment in the public sector has a similar size effect in the opposite direction.

Column (2) reports a specification which adds in previous job quality indicators. The test statistic shows that a random effects specification is no longer preferred, revealing that the set of prior employment characteristics provides significant explanation for the heterogeneity between individuals. Now the small firm effect falls in size, although it is still statistically significant. With the exception of travel-to-work time, the different job quality indicators all attract significant coefficients, with signs in anticipated directions confirming bivariate associations, and evidencing RQ3. Working long hours or having low pay both increase the likelihood of entry by a quarter. Temporary contract working doubles the likelihood of entry, whilst trades union representation reduces the entry likelihood by 70%. These job quality indicators appear to convey information beyond subjective job satisfaction (RQ3), as both they and the job satisfaction variable are statistically significant. A one-point reduction in job satisfaction score increases the entry likelihood by 19%, controlling for these other measures of job quality. Finally, this column also includes the two training indicator variables (RQ4). Those benefitting from employer-provided training are 66% less likely to enter self-employment, whilst those finding training opportunities outside the workplace are 72% more likely to enter.

Column (3) includes interactions between job quality and the small firm (<50 employees) indicator to address the potential mediating role of prior employment in a small firm (below 50 employees) on the impact of job quality on self-employment entry (RQ2). The eight interaction terms are jointly statistically significant (Chi-squared (8) = 25.2, p -value 0.002). However, at the same time, the small firm effect itself, captured by the 0 and 49 employees dummy, is no longer statistically significant. This provides no evidence for a distinct positive small firm entrepreneurial transmission effect, once the model allows for differences in job characteristics in those small firms. In quantitative terms it is long working hours in small firms that have the largest 'push' effect into self-employment, increasing the entry probability by 50% ($((0.0064 \div 0.013) \times 100)$). Other interaction effects are at work. Low pay and an absence of employer-provided training, although marginally statistically significant, both reinforce self-employment transition from small firms. Employment on a temporary contract has an offsetting effect in a small firm, reducing the large positive impact on self-employment entry by around a third. One potential explanation is that small firm employees with temporary contracts have a greater expectation of contract renewal, whereas in large organizations temporary employment may be more seasonal, to manage operational peaks. Increased job satisfaction also has an offsetting effect in a small firm. In column (3) a one-point increase in job satisfaction score reduces the transition probability by 26%. However, for someone previously employed in a small firm this reduction is only 15% ($((-0.0033-0.0014) \div 0.013) \times 100)$. Here it is possible that other offsetting influences on subjective assessments of job quality are present. These might include a perceived entrepreneurial transmission effect contributing 'push' towards self-employment.

In column (4) we reproduce the third specification for transitions into self-employed business ownership, in order to focus on business start-ups. The overall pattern of coefficients is similar to those obtained for the full sample of transitions. Coefficients are smaller, but this is reflected in the lower unconditional mean entry probability in the

second row of the table. One difference is that impact of a long travel-to-work time is larger (and negative). This appears counter-intuitive but may reflect having less free time for business start-up preparation whilst still in employment. In any case, the effect is quantitatively small. Small firm interaction effects are not as large, although still jointly significant (Chi-squared (8) = 18.3, p -value 0.02). Given that our focus in this specification is explicitly on self-employed start-ups, this further calls into question the existence of any direct small firm entrepreneurial transmission effect.

Turning now to the control variables, we find that various individual characteristics are associated with self-employment entry. Being female lowers the entry probability by around 40% depending on specification. The pattern of coefficients on age and age-squared reveals that the probability of entry initially declines with age. However, beyond a turning point in middle age, the probability then begins to rise again (in column 3 this is at 44 years of age). Despite findings from previous research, there are few significant associations with ethnicity. South Asians are more likely to enter self-employment, whereas Afro-Caribbeans are less likely. Those with school-level qualifications are significantly less likely to enter self-employment, compared to those with no formal qualifications and those with college-level qualifications. This is consistent with bimodality in self-employment patterns.

The findings support previous research on personality and cognitive traits. Openness and extroversion are positively associated with transition, and neuroticism, conscientiousness and agreeableness are negatively associated. More conscientious employees may be of greater value to organizational employers and may be better recognized in ways that are not fully captured by other job characteristics. The negative coefficient on the self-efficacy scale in the first column is unusual given previous research on entrepreneurial intentions. However, it is weakly or not at all significant in the right-hand columns, and the negative coefficient may indicate the marginal value of general self-efficacy to employers, which may again be regarded positively by employers.

Personal financial wealth, proxied by annual investment income, is positively associated with self-employment entry. The impact is not large – a £1,000 increase in investment income raises the entry probability by just under 1% (columns 2 and 3). However, despite previous research findings, no housing wealth association is found. Finally, the location has some impact. Individuals in rural areas are, other things equal, a third more likely to transition. In areas of high unemployment transition is less likely, suggesting a local opportunity ‘pull’ effect. A 1% point increase in the local unemployment rate is associated with a 5% lower transition probability (columns 2 and 3).

5. Discussion

These findings provide strong support for the first research question that entry into self-employment is more likely amongst those with poorer prior job quality across almost all dimensions considered. A number of objective indicators (longer hours, lower pay and less access to training) are correlated with being employed in a small firm.⁸ An important conclusion therefore, borne out in these findings, is that any estimate of the entrepreneurship transmission effect has to account for these confounding influences. A key finding in our research is that prior employment in a small firm has

⁸ Table A3 in the Appendix provides evidence from a bivariate correlation matrix.

a significant mediating impact on associations between prior employment and subsequent self-employment entry (RQ2). Furthermore, our findings suggest that any ‘pure’ transmission effect disappears once the model allows for small firm-job quality interactions.

However, employees tend to report, other things equal, higher levels of job satisfaction from working in smaller firms.⁹ This significantly offsets any increased tendency for small firm employees to enter self-employment, arising either from poorer employment circumstances or from an entrepreneurial transmission effect (RQ3). Nevertheless, even after controlling for a range of prior personal traits and characteristics, these findings overall provide strong grounds for re-conceptualizing the entrepreneurial transmission effect and reassessing evidence for it. It seems more likely that employees leave small firms because they are ‘pushed’ by poorer employment conditions, even accounting for higher job satisfaction. It is less likely that they are ‘pulled’ from small firms because of their exposure to a stronger entrepreneurial culture or the acquisition of entrepreneurial skills or mindset.

This leads on to discussion of the way in which ‘push’ versus ‘pull’ factors are conceived in self-employment research. They are typically treated as an either/or dichotomy – many appropriately-resourced individuals are drawn positively into entrepreneurship through an entrepreneurial discovery process, while some are ‘pushed’ by a lack of alternative employment opportunity. The discourse around the growth of dependent self-employment and the ‘gig-economy’ tends to pay attention to the latter. Our findings suggest strongly that push and pull factors operate simultaneously, and that the balance between these may vary both with the external economic environment and across individuals with heterogeneous characteristics and backgrounds. Furthermore, push factors can be internal as well as external in that poor quality employers reduce employee attachment. As a result, other things equal, an employee is more likely to enter self-employment as a means of escaping from a bad job. Framed in terms of the data available to us in the present research, a bad job means one which pays poorly, requires long hours, offers poor job security and provides little opportunity for career enhancement through employer-supported training provision.

Contemporary economies, characterized by low levels of unemployment and high economic activity rates, may experience growth in lower paid jobs which are falling in quality (Green *et al.*, 2010; Crouch, 2012; Burchell *et al.*, 2014). This weakens the ‘push’ association between self-employment entry and formal unemployment rates. Although our findings reveal similar patterns for those starting businesses as for all self-employed, the growth of non-business owning self-employment is both a manifestation of the casualization of work and a consequence of rising employee dissatisfaction with organizational employment. While recent research has investigated the role of low organizational job satisfaction (Guerra and Patuelli, 2016), our findings strongly suggest that organizational attachment, rather than just job satisfaction, needs to be a driving concept for entrepreneurial behaviour. This should encompass a range of objective indicators of job quality. However, it is important to note that we have adopted a pragmatic definition of job quality, based on a set of largely objective measures available to us in our longitudinal data source. Therefore, any comparison with the findings of other international comparative studies of the impact of low job quality should be treated with caution. It is also possible that the inclusion of other intrinsic indicators

⁹ Evidence is in Table A3.

Table 5. *Job quality before and after transition to self-employment*

	Mean one year before transition in employment)	Mean one year after transition (in self-employment)	Difference
All transitioners into self-employment:			
Job satisfaction	4.894	5.599	0.704***
Usual weekly hours	34.63	37.76	3.124***
Long hours (%)	19.04	34.43	15.38***
Gross monthly earnings (£)	2016.30	1688.79	-327.51***
Low pay (%)	49.12	70.32	21.20***
Travel to work time†	24.67	12.01	-12.66***
Transitioners into self-employed business ownership:			
Job satisfaction	4.961	5.655	0.694***
Usual weekly hours	34.55	38.18	3.622***
Long hours (%)	18.96	35.65	16.70***
Gross monthly earnings	1963.92	1742.70	-221.23*
Low pay (%)	52.51	71.54	19.04***
Travel to work time	22.86	11.01	-11.86***

Notes: Excludes temporary transitioners who return to paid employment within one year. *T*-test of null hypothesis of difference equals zero; * denotes *p*-value <0.1, ** <0.05, ***<0.01.

Source: author computations from USoc Waves 1 to 7.

of the individual working environment and job content, not available to us, might lead to different conclusions.

One further question is whether those entering self-employment because of reduced organizational attachment, achieve significant subsequent improvement in their experience of work. Optimism bias may colour choices (Dawson *et al.*, 2014) and anticipated improvements may be transitory (Georgellis and Yusuf, 2016). In Table 5 we provide a further tabulation that examines self-employment experience one year after entry. We find that those entering self-employment appear to enjoy significant improvements in job satisfaction, averaging 0.7 Likert scale points, and in travel-to-work time, averaging 13 minutes. However, average reported earnings fall, and the incidence of low earnings below 70% of the local median rises.¹⁰ Moreover, the incidence of long hours increases significantly, and hours of work of business owners increase significantly by an average of 3.6 per week. Organizational attachment depends on enjoying high levels of intrinsic and extrinsic job quality. Those entering self-employment because of a poor job experience may discover that some anticipated gains are illusory. These data also do not provide information on changes in other intrinsic dimensions

¹⁰ Interpretation of this as implying an equivalent drop in the average standard of living requires some caution, because of the different tax treatment of salaried versus self-employment earnings, and the opportunity to treat for tax purposes some domestic expenses as business costs, particularly if self-employed activity is home-based.

of job quality. Even improvements in perceived job satisfaction may turn out to be temporary (Georgellis and Yusuf, 2016), or an outcome of adaptive preferences (Burchell *et al.*, 2014). Therefore, the emphasis of policy ought to shift away business start-up policy to promote self-employment as a less-bad alternative to joblessness (Román *et al.*, 2013), towards job quality policy supporting interventions requiring employers to improve job quality and invest in job-related training (Berloff *et al.*, 2019), and in so doing discourage over-exuberant entry into business start-up (Dawson *et al.*, 2014). Although beyond our period of analysis, the impact of the 2020 global health pandemic has been very severe on many groups of the self-employed, and may well undo much of growth of self-employment in the UK over the past decade, reinforcing the point at the start of this paper that high levels of self-employment in fact place many at increased risk of income volatility without access to social insurance.

Our research identifies a potential connection between the casualization of the organizational employment relationship and self-employment. ‘Necessity’ self-employment is no longer, if it ever was, an alternative to unemployment. Rather it is an escape route from poor quality employment. This is a feature which is often, although not exclusively, associated with small firms, and it more than offsets any entrepreneurial transmission effect. Non-business owning self-employed are a third of those transitioning in the UK. For them, self-employment may just be an extension of the same poor quality job, encouraged by technological developments such as internet platforms and the casualization strategies of organizational employers, especially smaller ones. Policy to better regulate dependent contracting in the gig economy may not be sufficient on its own.

6. Conclusion

The analysis we present in this paper suggests that entry into self-employment is strongly associated with the quality of prior employment experience. We find significant associations with a number of other extrinsic dimensions of job quality, even after controlling for low job satisfaction. These include low pay, long hours of work, temporary contracts, absence of workplace representation, as well as lack of employer-provided opportunities for training. These appear to lead to reductions in organizational attachment providing ‘push’ towards self-employment entry and offsetting the positive impact of personal characteristics and opportunity drivers. Many extrinsic dimensions of poor job quality are correlated with small-firm employment, despite the observed positive correlation between job satisfaction and small firm employment. Our results provide an alternative explanation for the ‘small-firm effect’. A number of individual ‘push’ associations are reinforced in small firms. Controlling for these interactions, we no longer find evidence for any separate positive association between small-firm employment and self-employment entry. This calls into question previous research suggesting that small firms transmit entrepreneurial intentions or select entrepreneurially-minded employees. Finally, the longitudinal data also show that any improvements in work experience, which might arise from entering self-employment, turn out to be illusory. In summary, these findings speak to the developing scepticism about entrepreneurship policy, and to a misleading distinction between ‘opportunity-pull’ and ‘necessity-push’. If the policy is concerned about encouraging ‘too much’ business start-up activity (Åstebro, 2017), then policy-makers may wish to turn their attention to the quality of paid employment, particularly in smaller firms.

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Appendix

Table A1. Self-employed and employed characteristics

Means	Self-employed	Employed
<i>N</i>	2,445	15,888
<i>Demographic characteristics:</i>		
Female %	38.1	53.4
Female with dependent children %	16.5	22.1
Age - years	44.3	40.1
Ethnicity – white British %	79.0	83.0
Ethnicity – white non-British %	7.2	4.5
Ethnicity – African/Caribbean %	2.3	2.4
Ethnicity – south Asian %	4.5	4.0
Ethnicity – Chinese/other Asian %	1.3	1.3
Ethnicity – Arab %	0.9	0.5
Ethnicity – other %	0.3	0.4
Ethnicity – not stated %	4.3	3.8
Not born in the UK %	17.2	12.8
<i>Highest education level</i>		
University/college %	33.0	30.0
Vocational college level %	1.3	2.2
School aged 18 (A-level) %	10.3	11.2
School aged 16 (O-level/GCSE) %	26.4	29.7
None of the above qualifications %		
<i>Region:</i>		
North East %	3.6	4.7
North West %	10.0	11.1
Yorkshire and the Humber %	7.6	9.4
East Midlands %	8.5	8.4
West Midlands %	6.3	8.7
East of England %	9.7	10.0
London %	14.0	11.2
South East %	17.7	14.3
South West %	11.1	8.8
Wales %	4.2	4.6
Scotland %	7.4	8.8
<i>Form of self-employment:</i>		
Freelancer/subcontractor/other non-business owner	22.9	–
Sole trader	62.3	–
Business owner with employees	15.5	–

Note: Wave 7 sample – all survey respondents aged 18 to 59 years. Means weighted by cross-sectional population weights.

Source: author computations from USoc Wave 7.

Table A2. Sample descriptive statistics

Means:	All	Transition route		
		Remain in employment	To any self-employment	To self-employed business ownership
<i>N</i>	17,312	16,407	905	621
<i>Organizational employment characteristics:</i>				
Employer size †				
1 to 49 employees	0.456	0.447	0.625	0.649
50 to 199 employees	0.217	0.221	0.160	0.155
200 and above employees	0.327	0.332	0.215	0.197
Public sector employer †	0.306	0.314	0.172	0.162
Long hours †	0.124	0.121	0.176	0.172
Low pay †	0.512	0.511	0.521	0.540
Temporary contract †	0.056	0.052	0.139	0.127
Trade union member †	0.255	0.263	0.107	0.110
Travel to work time †	24.97	24.96	25.22	23.94
Job satisfaction †	5.236	5.258	4.840	4.913
Training provided by employer †	0.301	0.307	0.179	0.177
Training from non-employer source †	0.186	0.185	0.214	0.206
<i>Individual characteristics:</i>				
Female ‡	0.565	0.572	0.430	0.428
Age	43.93	44.04	42.04	42.01
Ethnicity – white British ‡	0.889	0.891	0.840	0.843
Ethnicity – white non-British ‡	0.044	0.043	0.068	0.068
Ethnicity – African/Caribbean ‡	0.021	0.021	0.016	0.015
Ethnicity – south Asian ‡	0.032	0.031	0.051	0.054
Ethnicity – Chinese/other Asian ‡	0.010	0.010	0.018	0.019
Ethnicity – Other ‡	0.004	0.004	0.007	0.001
Highest education level				
University/college ‡	0.325	0.320	0.431	0.432
Vocational college level ‡	0.028	0.029	0.021	0.021
School aged 18 ‡	0.105	0.105	0.092	0.087
School aged 16 ‡	0.272	0.275	0.227	0.242
None of the above qualifications ‡	0.270	0.271	0.229	0.218
Personality trait: Openness ‡	4.611	4.592	4.966	4.976
Personality trait: Conscientiousness ‡	4.659	4.659	4.653	4.650
Personality trait: Extroversion ‡	4.631	4.623	4.783	4.812
Personality trait: Agreeableness ‡	5.597	5.602	5.506	5.540
Personality trait: Neuroticism ‡	3.622	3.632	3.451	3.389
Self-efficacy ‡	2.561	2.550	2.769	2.821
Investment income †	0.384	0.359	0.849	0.955
Housing equity †	0.749	0.750	0.720	0.704
<i>Local economic circumstances:</i>				
Rural location †	0.221	0.217	0.273	0.285
Local area unemployment rate (%) †	3.485	3.446	4.026	3.962

Table A2. *Continued*

Means:	All	Transition route		
		Remain in employment	To any self-employment	To self-employed business ownership
<i>Region:</i>				
North East	0.046	0.047	0.037	0.037
North West	0.119	0.120	0.091	0.104
Yorkshire and the Humber	0.084	0.085	0.068	0.075
East Midlands	0.078	0.077	0.095	0.093
West Midlands	0.087	0.087	0.085	0.097
East of England	0.104	0.104	0.096	0.102
London	0.103	0.100	0.149	0.117
South East	0.146	0.145	0.152	0.140
South West	0.094	0.093	0.111	0.112
Wales	0.048	0.049	0.032	0.030
Scotland	0.092	0.093	0.083	0.093

Note: Sample – all survey respondents aged 18 to 59 years at Wave 1, initially in paid employment and observed for at least two consecutive waves. ‡ denotes covariate which is observed once and is time-invariant. † denotes covariate measured in the previous wave to the dependent variable. Means weighted by cross-sectional population weights.

Source: author computations from USoc Waves 1 to 7.

Table A3. Correlation matrix – prior job quality indicators

	Employer size 1–49	Employer size 50–199	Employer size 200+	Public sector employer	Long hours	Low pay	Temporary contract	Trade union member	Travel to work time	Job satisfaction	Training provided by employer	Training from non-employer source
Employer size 1–49	1											
Employer size 50–199	-0.483	1										
Employer size 200+	-0.637	-0.367	1									
Public sector employer	-0.187	0.041	0.162	1								
Long hours	0.050	<i>0.018</i>	-0.069	-0.149	1							
Low pay	0.216	-0.054	-0.183	-0.086	-0.121	1						
Temporary contract	-0.006	-0.002	<i>0.008</i>	0.043	-0.017	0.080	1					
Trade union member	-0.185	0.063	0.140	0.382	-0.038	-0.161	-0.047	1				
Travel to work time	-0.117	<i>0.007</i>	0.118	<i>0.010</i>	-0.017	-0.175	0.031	-0.008	1			
Job satisfaction	0.043	-0.014	-0.035	-0.001	<i>0.011</i>	-0.011	-0.024	-0.035	-0.033	1		
Training provided by employer	-0.054	0.032	0.030	0.107	0.026	-0.088	-0.017	0.086	<i>0.005</i>	0.041	1	
Training from non-employer source	<i>0.010</i>	-0.011	0.030	0.051	<i>0.006</i>	-0.033	<i>0.012</i>	0.029	0.026	-0.009	-0.302	1

Notes: N = 17,330. *Italic* denotes significance at <0.05; **bold italic** at <0.01. Weighted by cross-sectional population weights.

Source: author computations from USoc Waves 1 to 7.