University of Dundee

Self-exploitation or successful entrepreneurship?

Atherton, Andrew Michael; Wu, Dongxu; Wu, Zhongmin

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Purpose – To understand whether the personal capital of the entrepreneur positively or negatively affects outcomes from self-employment.

Design/methodology/approach – Data from the UK's longitudinal household surveys (BHPS, UKLHS) between 1991 and 2014 were analysed. Relationships between age, education, health and family status and income earned and hours worked were tested.

Findings – Entrepreneurs with higher levels of personal capital enjoyed higher incomes. However, those with lower levels of personal capital were more likely to have negative returns from self-employment, and so experience it as 'self-exploitation'.

Research implications – A basis for understanding different outcomes from self-employment was developed and tested.

Practical implications – Specific characteristics of continuing and new entrepreneurs were identified that are positively associated with beneficial outcomes from self-employment.

Originality/value – (1) Positive and negative outcomes from self-employment are explained; (2) The notion of personal capital is developed as an explanatory framework for variable outcomes from self-employment.

Keywords: Self-employment, entrepreneurship, financial and non-financial benefits, income, personal capital.

Article Type: Research paper

Introduction

Even though there is policy consensus that entrepreneurs generate economic growth and innovation, there is an ongoing debate as to whether the effects of self-employment on individuals are positive or negative (Audretsch and Thurik, 2001; De, 2000; Manso, 2016).[1] Are experiences of self-employment generally good, or do some people find self-employment a challenging and negative experience?

A growing number of surveys have concluded that self-employment leads to higher job satisfaction than employment, because it offers the following benefits: greater control over one's own work; more operational autonomy and independence; more variety in work undertaken; greater flexibility in working patterns and hours (Annink et al., 2016; Benz and Frey, 2004; Blanchflower and Oswald, 1998, 2004). Some of these analyses have proposed that improved job satisfaction through self-employment leads to greater life satisfaction and improved wellbeing (Benz and Frey, 2008; Blanchflower, 2000; Blanchflower and Oswald, 1998; Hundley, 2000). Moreover, entrepreneurial success does not necessarily require longer working hours (Douglas and Shepherd. 2002), and can generate higher earnings than employment, particularly when education levels are high (Robinson and Sexton, 1994).

However, there is a wider literature that associates increases in self-employment with erosions in employment rights, resulting in more 'precarious' forms of work (Quinlan et el., 2001). In these cases, individuals become self-employed because their previous stable employment has disappeared and opportunities for alternative paid employment are scarce or unattainable (Hughes, 2003). Once self-employed, the prospects for

generating sufficient profits to escape low pay and long hours tend to be low (McDonald, 1996). Several studies of self-employment conclude that financial returns from self-employment tend to be lower than wages earned by employees (e.g. Benz, 2005). Over the longer-term, satisfaction with self-employment may erode, as expected financial and non-financial returns are not fully achieved (Georgellis and Yusuf, 2016). Differences in experiences of self-employment can be explained by the circumstances that lead individuals to become entrepreneurs, and the extent to which their capabilities, in terms of relevant knowledge and prior experience, offer a foundation for self-employment. When individuals are 'pushed' into self-employment, because other opportunities to work are not available or have been lost, the likelihood is that the outcomes will be more negative (Andersson, 2008; Block and Koellinger, 2009). Successful entrepreneurs are more likely to continue in self-employment because they can generate higher incomes and work fewer, or at least not excessive, hours (Douglas and Shepherd, 2002). From this perspective, transitions between employment and self-employment may be a dynamic of exploring optimal earnings by individuals who try out running their own business and then return to employment if this is not successful or remain an entrepreneur if it is (Dillon and Stanton, 2017). Movements between employment and self-employment may be more fluid than a simple binary choice between different forms of work (Atherton et al., 2016).

However, 'push' and 'pull' considerations of what motivates individuals to start businesses do not recognise that this decision also reflects the particular circumstances of the entrepreneur, and the many considerations informing this decision (Dawson and Henley, 2012). One key determinant of outcomes from entrepreneurship are the personal capabilities, experience and knowledge of the entrepreneur (Acs, 2006; Bellu et al., 2006; Duchesneau and Gartner, 1990). In previous studies, these personal attributes have tended to be categorised as an individual's human capital, following on from Becker (1964), and so have been aligned closely with levels of formal education (Unger et al, 2011). However, experiential learning and the accumulation of tacit and applied knowledge are not necessarily measured or reflected in formal educational attainment, even though they can be as important for task completion and personal competence (Polanyi, 1967). As a result, the notion of human capital can be extended to incorporate experience as well as formal education. Furthermore, the founder of a new venture has a wider range of capabilities than education and experience, suggesting that even this expanded consideration of human capital does not reflect all of the personal abilities deployed when entering self-employment. In this paper, the notion of personal capital is used to incorporate a wider range of capabilities and resources associated with the founder, which include physical and relational, as well as human, capital. Specifically, the paper considers the relationship between personal capital and outcomes from self-employment, as measured by incomes and working hours. Incomes from self-employment capture financial benefits from this form of entrepreneurship, and working hours test whether this form of work entails more effort and time. The personal capital of the entrepreneur positively affects beneficial financial outcomes from self-employment, and individuals when they enter, or continue in, self-employment have different levels of personal capital. This provides a conceptual and empirical basis for better understanding why the outcomes from self-employment for some entrepreneurs are positive, but for others they are negative.

The contribution of the paper is therefore three-fold. Firstly, an extended definition of the personal capital of entrepreneurs is proposed, which provides a more comprehensive account of variable outcomes from self-employment. Secondly, positive

correlations between personal capital and outcomes from self-employment are identified. And, third, these correlations provide a basis for explaining both positive and negative outcomes from self-employment. Establishing grounds for variable outcomes to self-employment, as determined by personal capital, provides insight into why some individuals are successfully self-employed, but others are not.

Research framework

Three groups of entrepreneurs are considered in this paper: those continuing in self-employment; those entering self-employment from employment and those entering self-employment from unemployment. Individuals continue in self-employment because they enjoy financial and non-financial benefits from this form of work (Douglas and Shepherd, 2002). Individuals enter self-employment from a paid job in anticipation of higher earnings from self-employment, and also expectations of procedural utility in the form of more rewarding and more flexible work (Benz and Frey, 2008). By way of contrast, unemployed individuals entering self-employment are likely to do so because they cannot find alternative paid employment.

The research framework proposed in this paper has three components. The first is the human capital of the entrepreneur. This has two dimensions: prior experience, as measured by age as a proxy of accumulated knowledge; and formal education, as measured by highest qualification. The second component of the framework is the health of the entrepreneur. This is the physical capital of the entrepreneur. The third component is family status, as defined by marital status and number of children, and represents the relational capital of the entrepreneur. Outcomes from self-employment are measured by profits and hours worked. Overall, the study tests whether higher human capital, better health, and family support have positive effects on outcomes from self-employment. These three components – human capital, physical capital, and familial relational capital – make up the personal capital of the self-employed entrepreneur, and are explored in more detail in the rest of this section of the paper.

Human capital: prior experience and education as antecedents of new venture success. The capabilities of the individual who becomes self-employed strongly influence the prospects of success of her or his new venture (Gartner, 1985; Parker and Belghitar, 2006). Capabilities are derived from knowledge and prior experience, with higher levels of each being correlated with positive outcomes from self-employment (Ackerman and Humphreys, 1990; Cressy, 1996; Hunter, 1986; Unger et al., 2011). Formal education and prior experience, both key dimensions of human capital (Becker, 1964; Mincer, 1974), have been found to have a positive impact on the success of new ventures (Duchesneau and Gartner, 1990). Higher human capital enables better planning and formulation of business strategies (Baum et al., 2001; Baum and Locke 2004; Frese et al., 2007), as well as enhancing opportunity recognition (Shane and Venkatraman, 2000). Individuals with higher levels of education, as measured by qualification, are more likely to enter self-employment and are more likely to set up successful new ventures (Bates, 1990; Bellu at al., 2006; Naude et al., 2008; Parker and Belghitar 2006; Unger et al., 2011).

As per the references above, multiple studies have found a correlation between self-employment and education levels, and on that basis have concluded that higher human capital increases levels of participation in entrepreneurship. In this study, we explore the nature of outcomes from self-employment, in particular whether income rises and hours worked falls. Our focus as a result is on extending this broad finding in the literature that higher human capital leads to more successful entrepreneurship by

seeking to quantify this in terms of income and working hours. As a result, our first hypothesis is:

Hypothesis 1: Higher levels of formal education increase the prospects of positive outcomes from self-employment, as measured by increases in income and falls in working hours.

Although the relationship between formal education as a proxy for human capital and self-employment outcomes is relatively well developed, there is a less developed literature on correlations between tacit, experiential knowledge and entrepreneurial outcomes. In this paper, we adopt age as a proxy for experience, building on previous research. Successive studies have established a strong relationship between age and experience, indicating that age is an appropriate proxy measure for accumulated experience (Mata, 1996; Preisendorfer and Voss, 1990; Robinson and Sexton, 1994). Experience can be defined as tacit forms of knowledge, acquired over time, which improve performance and productivity in the workplace (Polanyi, 1967). Practical and task-related knowledge that has been accumulated through previous work experience that can be applied to the new venture positively influences entrepreneurial success (Gimeno et al., 1997; Robinson and Sexton, 1994; Unger et al., 2011). Individuals entering self-employment typically start their business in sectors or industries where they have previously worked, making prior experience relevant to the new venture (Taylor, 1999). As such, age is a useful proxy for relevant accumulated experience, which is beneficial when starting and running a business.

Prior experience is especially beneficial when acquiring the resources needed to start a new venture (Astbro and Bernhardt, 2005; Atherton, 2009; Brush et al., 2001). Knowledge of financing mechanisms, and in particular experience of securing funding, are positively related to new venture success (Parker and Belghitar, 2006).

Evans and Leighton (1989) found a strong positive relationship between self-employment and greater asset holdings. Higher asset holdings are correlated with age, because they are accumulated over time and unexpected receipts tend to increase in likelihood with age, in particular inheritance income. Effective management of these assets is also likely to improve with age, as individuals learn how to best preserve and invest them. Prior experience, accumulated over time, therefore is a function of age, and has a positive impact on successful self-employment. This leads to our second hypothesis:

Hypothesis 2: Greater prior experience increases the prospects that self-employment will lead to higher incomes and lower working hours than previous employment.

Health and wellbeing outcomes from self-employment. Benz and Frey (2008) found a strong and positive relationship between self-employment and wellbeing. As noted in that paper, there is an established literature showing that the self-employed tend to be more satisfied with their work than those in employment, because they enjoy greater task variety and challenge than employees, and greater control over their own working patterns (Blanchflower, 2000; Block and Koellinger, 2009; Benz and Frey, 2008). The occupational health literature consistently finds that job satisfaction has positive effects on health (Faragher et al., 2005).

However, experiences of being self-employed are not uniformly positive, and this form of work can be stressful, particularly when it entails working long hours. As such,

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greater job satisfaction may lead to positive impacts on health, but these may be offset by the stresses of being self-employed. The effects of successful self-employment may be both positive and negative, and a net benefit as a result will only emerge if either an individual receive greater benefits than costs, or that person can cope with or offset some or all of the costs arising from self-employment. Somebody in good health is more likely to cope with the stresses and the physical demands of long hours than a person with poor health. This suggests that good health may be a contributor to entrepreneurial success as well as an outcome (Rietvald et al., 2015). This presents two options, which we test in this paper. Firstly, good health better prepares entrepreneurs to cope with the physical challenges of self-employment, and secondly, good health arises because successful self-employed entrepreneurs earn more money to invest in health and wellbeing and also work fewer hours. This leads to two possible outcomes and hence two variants on our next hypothesis:

Hypothesis 3a: Better health increases the prospects of positive outcomes from self-employment.

Hypothesis 3b: Better health is an outcome from successful self-employment.

Family effects on outcomes from self-employment. Considerations of entry into self-employment tend not to consider the social context of individuals making this decision. However, becoming self-employed is likely to have an impact on an individual's immediate family, and may also be influenced by whether family members are supportive of this decision. In particular, being married may have an impact on entry into and positive outcomes from self-employment. Overall, marriage produces relational capital, in the sense that a spouse can support somebody entering into self-employment, emotionally, psychologically and materially. If the entrepreneur is working long hours and is highly committed to the venture but not generating sufficient income, the spouse or partner can make greater contributions to household earnings and tasks. The affective and material support of a spouse allows an entrepreneur not only to engage in self-employment, but also to persist in it even when the working hours or financial return are not wholly satisfactory.[2] As such, relational capital associated with being married is more likely to lead to persistence in and positive outcomes from self-employment (Atherton et al., 2016; Clark, 2017):

Hypothesis 4: Marriage will have a positive effect on persistence in and positive outcomes from self-employment.

Having children may motivate parents to seek out self-employment if it offers prospects of greater incomes than employment, or it offers greater flexibility in hours worked, especially when children are young and childcare costs are high. As such, self-employment may become a working option when it allows a parent to 'work around' family commitments. This is particularly the case when the ability to control working hours is combined with greater pay per hour worked (Lombard, 2001).
There may, however, be different effects of relational capital on self-employment by gender. Women still tend to undertake a greater proportion of household duties than men, and generally take on a greater level of responsibility for children (e.g. Blair and Lichter, 1991). These duties are time-consuming and tiring, leading to greater risks of stress and poorer health for women, but also less time for other activities (Krantz et al.,

2005). As a result, the time available to commit to self-employment is more likely to be constrained, reducing the likelihood for women who have children to enter into and sustain self-employment if this entails extended working hours. This leads to our final hypothesis:

Hypothesis 5: Women with children are less likely to continue in self-employment unless it offers reduced working hours and improvements in earnings.

Other factors affecting the success of self-employment. Other factors also explain successful outcomes from self-employment. Firstly, social capital, developed and mediated through key relationships and via personal as well as transactional networks, complements the human capital effects of education and experience as well as the resource endowments of new ventures (Coleman, 1988). Entrepreneurs with strong and extensive social capital that they can deploy are more likely to have positive outcomes from entrepreneurship (Bosma et al., 2004). There has been extensive research on the network endowments and social capital of entrepreneurs, although less has focused on the social capital of new entrants into self-employment (e.g. Anderson and Jack, 2002; Granovetter, 2000). Many self-employed entrepreneurs indicate that a sense of isolation, which is a manifestation of a lack of social capital, is a typical experience of self-employment (Patzelt and Shepherd, 2011). This may reflect a difference between self-employment, which tends to be a solitary affair, and owner-management of a business, which involves recruitment and hence management of staff. Secondly, funded business start-up programmes can improve the prospects of successful start-up for new venture founders, although their effectiveness and impact can be highly variable (Atherton, 2006; Parker and Belghitar, 2006). Given the mixed effects of programmes such as these, and their limited availability, they have not been proposed as a primary driver of successful self-employment.

Thirdly, inherited as well as accumulated wealth can play an important role in enabling entrepreneurship, by making start-up capital available to the founder (Faria and Wu, 2012). However, inheritance cannot be anticipated or predicted, leading to real challenges in aligning receipt of these funds with ability and motivation to start a business. For most people who become self-employed, the likelihood of inheritance generating start-up capital is likely to be low. Moreover, accumulated or inherited wealth does not in and of itself create the conditions for successful entry into self-employment. Many individuals will seek to preserve their accumulated assets rather than risking them by setting up a new venture. Although some entrepreneurs may decide to start a business using accumulated or inherited wealth, it is not consistently available for new ventures.

Method

The data used for this research come from the British Household Panel Survey (BHPS) wave 1 to wave 18 (1991–2009); and the Understanding Society–UK Household Longitudinal Study (UKHLS) wave 1 to 5 (2009-2014). Launched in 1991, BHPS was the UK's first socio-economic longitudinal household panel survey and has 18 waves of data, after which it was incorporated into UKHLS. Almost 6,700 of just over 8,000 BHPS households joined the UKHLS study. Although UKHLS was essentially a continuation of BHPS, the cohort is different, in that is larger and has a different stratification. In addition, several additional questions were inserted into UKHLS. As a result, the data from both surveys are considered separately. Although some studies combine data from

the surveys, there are concerns about the comparability of the data sets, given the different sample groups and some variation in the questions asked. Parallel analyses of the surveys allowed for comparison of the analytical results across two closely related, but different, data sets, so offering an additional test of the findings and whether they held consistently across different data source.

Both the BHPS and the UKHLS are designed to capture life in the UK and how it is changing over time (Berthoud and Burton, 2008). The survey contains information about people's social and economic circumstances, attitudes, behaviours and health. In this paper, three dependent variables were used from each of the surveys, namely: route of entry into, or continuation in, self-employment; hours worked per week; and income generated from this activity. These three variables were analysed for their correlation, if any, with health, educational qualification, age, marital status, and number of children.[3]

Data from the surveys have significant amounts of missing data, in particular financial information (Webb 1995). Missing and inaccurate data on income is a problem that affects all self-reported household surveys. In wave 1 of the BHPS, around one quarter of all non-zero values for earnings, social securities and transfers were at least partially imputed. In order to address this, tests were undertaken to check for systematic bias in order to determine whether data gaps produced concerns about the robustness of the data set. As the survey continued, biases, in particular under-reporting of income, improved through repeat interviewing. As such, concerns over income data have reduced over time, because as households engage on an ongoing basis with the survey, they have refined their responses (Fisher, 2016).

Despite some limitations on the comprehensiveness and accuracy of income data, which as noted are improving, the BHPS and its successor UKHLS are the most reliable, comprehensive and best sources of longitudinal socio-economic data in the UK. As a result, BHPS has been used for other studies on self-employment (e.g. Henley, 2004), and so represents a credible data source for studies on this topic.

The probability of an individual being self-employed was tested through a Probit equation, because of the binary nature of the response. The labour supply function and the profit function of an entrepreneur are estimated through Tobit equations. This is done separately for males and females. Education, health, and age are used as indicators of personal capital, as discussed earlier in this paper. Marital status and number of children act as control variables.

Logit and probit models should be used instead of regression techniques when the dependent variable is binary, as is the case in our analysis [employed or self-employed]. Both the logit and probit model approaches use a function that effectively transforms the regression model so that the fitted values are bounded within the (0, 1) interval. Visually, the fitted regression model will appear as an S-shape rather than a straight line (Brooks 2014). Logit and probit models are commonly used to explain participation in, entry into (Evans and Leighton 1989, Blanchflower and Oswald 1998), and continuation of entrepreneurship (Cressy 1996), and so are appropriate for this study.

The case for using a fixed effects model is based on the existence of omitted variables, which are correlated with the explanatory variables. In other words, we have endogeneity caused by unobserved heterogeneity. A fixed effects model assumes that whatever effects the omitted variables have on the subject at one time, they will also have the same effect at a later time. However, in order for this to be the case, the omitted variables must have time-invariant values with time-invariant effects. To this end, a random effects model might be more appropriate. In fact, we ran both and the

results were similar. Much of the methodology literature proposes running both models, in order to determine the effects of introducing bias and addressing sample dependence (Clark and Linzer, 2014). We chose to show the random effects model results as there is growing indication that with the right treatment, random effects can address missing variables, and so offers more analytical capability than a fixed effects model (Bell and Jones 2014). As noted, this is particularly relevant to our data, as the missing variables issue around income in both panels is not a significant concern. The analysis considers variables relating to time worked ("Self-employed: hours worked per week") and income generated ("Self-employed: monthly profit"), which are suitable for a Tobit model. This approach is generally used to estimate models with censored dependent variables, based on maximum likelihood. These types of data occur when the dependent variable has been 'censored' at certain point so that values above (or below) this cannot be observed (Brooks 2014). A Tobit model was suitable for the regressions with hours worked and monthly profit, as it is now routinely used to estimate labour-supply equations with hours of work as the dependent variable, in part because hours are clustered at zero for non-workers (Moffitt 1982).

Empirical results from the random-effects Probit model and random-effects Tobit model (Tables 1 to 6), are consistent with a random-effects Logit model, and Fixed Effects model, and the data are available upon request.

Findings

In this section, the hypotheses developed earlier in the paper are assessed against the data findings. Outcomes from self-employment by gender are considered across the three identified groups, namely: continuing in self-employment (Table 1 and 4); entering self-employment from employment (Table 2 and 5); and, entering self-employment from unemployment (Table 3 and 6). Overall, the effects were strongest for those continuing in self-employment, which makes sense as it indicates that continuing entrepreneurs generate benefits from remaining in this form of work (Table 1). Continuing entrepreneurs with higher qualifications (in particular a first degree) earned significantly higher incomes when staying in self-employment.

The results partially, rather than fully, confirmed our first proposition, in the sense that correlations were found with income but not working hours in all but one group. The effects of higher formal education, as measured by level of qualification, were positively related to income, as measured by monthly profits from self-employment. These benefits were strongest for continuing male entrepreneurs, although they also applied to the following three groups: continuing female entrepreneurs; those entering from employment; and men entering from unemployment. Overall, there was a positive correlation between formal education and income for those continuing in or entering self-employment for all but women coming from unemployment. However, the relationship was not hierarchical, in the sense that the higher the level of education, the greater the income earned. Instead, a first degree (i.e. an undergraduate award) or equivalent had the greatest positive effect on monthly profits from self-employment, and the findings were mixed in terms of further (i.e. postgraduate) degrees. This suggests that achieving an undergraduate or equivalent education provides the requisite level of human capital to increase the prospects for positive financial outcomes from self-employment. Continued, postgraduate education does not appear to have as strong an effect.

The proposition did not hold, however, in terms of a correlation with reduced working hours for all groups apart from continuing male entrepreneurs. For this group, who are

most likely to be generating superior financial returns from remaining self-employed, higher formal education increased both financial income and allowed for fewer working hours. There may well be an element of self-selection here, given that men with higher qualification levels are less likely to continue in self-employment overall, and therefore only those who can generate positive financial returns and work fewer hours are incentivised to stay self-employed. For the other groups with a positive correlation between formal education levels and income, self-employment entailed working longer hours, albeit for positive financial returns.

Continuing female entrepreneurs with higher levels of education were more likely to stay self-employed and earned higher monthly profits. However, they worked longer hours if they had a first degree in order to enjoy these benefits from self-employment. For individuals entering self-employment from employment, the only significant effects for education were for women holding first degrees or another higher qualification and for men holding another higher qualification. Women were slightly more likely to remain self-employed, worked slightly more hours and enjoyed increased monthly profits. Men with another higher qualification enjoyed slightly increased profits from self-employment. For those entering self-employment from unemployment, the effects of higher education levels were limited to increased monthly profits for men with first degrees, and significantly longer hours worked for women with first degrees or other higher qualifications.

The conclusion therefore is that those continuing in self-employment enjoyed greater overall effects than those entering from employment, who in turn enjoyed greater benefits than those coming from unemployment.

With the exception of continuing male entrepreneurs, the financial returns from self-employment are positively correlated with human capital, but at the cost of extended working hours, and as a result a loss of leisure time and greater risks of poor health. There is therefore a 'price to pay', in terms of longer working hours, from self-employment, even when the financial returns are positive. This reverses previous studies, which found that individuals remain self-employed for non-financial benefits even when the financial benefits are low. Individuals stay, or become, self-employed because of the financial benefits, but tend to do this at the cost of working longer hours, which in turn can have non-financial disadvantages, and in particular negative effects on work-life balance (Annink et al., 2016).

In terms of proposition 2, there was a positive, but curvilinear relationship between age and positive income outcomes from self-employment. This relationship is non-linear, indicating that successful outcomes from self-employment do not have a simple relationship with age, i.e. the older you get, the more likely you are to be a successful entrepreneur. For male entrepreneurs, the highest profits from self-employment were earned on average at 50.7 years old. For women, the age at which they secure the highest monthly profit was 47.5 years. As proposed earlier in this paper, age is related to the individual's years of labour market experience, and so can be used as an indicator or proxy for the prior experience (Holtz-Eakin et al 1994).

The non-linear relationship indicates an optimal age at which to maximise returns from self-employment, before which income is still rising and after which there are marginal reductions in earnings. This may explain why self-employment rates in some countries fall off as individuals approach retirement (Heim, 2015).

Proposition 3 is also upheld for most groups. Of the 36 equations, good health is positive and significant in 31 of them. For continuing entrepreneurs, good health has a positive impact on staying self-employed. For women continuers, it is also correlated

with increased monthly profits. For men entering self-employment from employment, good health increased the likelihood of becoming self-employed, as well as the number of hours worked and monthly profits. However, for employed women entering self-employment, there is no significant relationship with health. For individuals entering from unemployment good health was positively correlated with likelihood to become self-employed, number of hours worked and monthly profits. The longer hours and the greater responsibility commonly associated with self-employment mean that the less healthy are more likely to find it demanding (Rees and Shah 1986). Taylor (2001) found that having a health condition that limits the type or number of working hours possible reduces the probability of self-employment by 1%.

Proposition 4 is broadly supported, although results vary by group. Being married increases the likelihood for both men and women to stay self-employed and increases the number of hours worked by male entrepreneurs, supporting Davidsson and Honig's (2003) proposition that this is an important indicator of social capital, which can be deployed to the benefit of the business. Marriage has a similar effect on men entering self-employment from employment. Marriage has a positive and significant impact on entrepreneurial entry from unemployment for both men and women and increases the number of hours worked (Table 5). Marriage is also good for venture survival (Table 3). Proposition 5 is supported in terms of the effects on working hours, although the results also indicate that children represent a disincentive for men as well as women to stay self-employed. For continuing entrepreneurs, regardless of gender, the number of children reduces the prospects of continuing in self-employment. The effects on men and women differ in terms of hours worked – with self-employed women working fewer hours the more children they have. Self-employed men with children generate higher monthly profits, whereas women entrepreneurs generate less. Hundley (2000) argued that for women in self-employment, housework and childrearing limit the number of hours available to work on the business. This in turn appears to suppress financial returns from self-employment. As a result, married women with children appear more likely to be 'pushed' than 'pulled' into self-employment because of the flexibility offered by this form of work even though their income is suppressed (Patrick et al., 2016). Male entrepreneurs with children continue in self-employment when profits from this activity are high. They appear willing to trade off longer working hours, which represent less time with their children, for higher financial returns.

Conclusions and implications

These results confirm that there are both positive and negative outcomes from self-employment. For men with higher human, physical and relational capital, in particular, the proposition held that there was a positive impact on reduced working hours and higher profits for those continuing in self-employment (Scholin et al., 2016). For other groups with high human capital, the results identified positive financial returns but not reduced working hours. Female entrepreneurs experienced some benefits but these appear limited by commitments to children. There was little indication that men entering self-employment from employment enjoyed reduced working hours or significantly higher profits, whereas there was evidence that women entering from employment with higher levels of capital earned higher monthly profits, but worked longer to generate this income. For the unemployed entering self-employment, there was little evidence of a relationship between higher personal capital and reduced either working hours or higher monthly profits. In these cases, individuals enter self-employment to work longer hours but without increased monthly profits, suggesting a

form of 'self-exploitation'. This reinforces earlier findings that have found that even when the unemployed become self-employed, their earnings are lower than those entering from employment or continuing in self-employment (Caliendo et al., 2015). These results provide a basis for identifying both positive and negative outcomes from self-employment. The results indicate that successful entrepreneurs stay self-employed because they enjoy sustained financial and non-financial benefits. For those entering from employment, the effects are slightly but marginally positive, and the financial benefits are greater for women than men. This may explain recent increases in self-employment amongst women, particularly those with higher personal capital. For those entering from unemployment, the impacts are more likely to be negative.

These findings contribute to the literature and our understanding of self-employment in the following five ways.

Firstly, positive and negative outcomes from self-employment can be identified, and are related to levels of not only human, but also physical and relational, capital. In essence, individuals with higher levels of these three forms of capital appear more likely to generate greater financial returns from self-employment, albeit with the corollary that in most cases, this will entail longer working hours. One way of looking at this conclusion from our analysis is as follows. Higher human capital, when extended from formal education to also include experience, enhances the prospects of an individual to set up and run a successful business, as this capital endowment improves decision-making, analysis and business judgement. Good health – a physical consideration – allows these successful entrepreneurs to work the longer hours that tend to be associated with this form of work, as does support from a spouse and a sense of obligation towards dependent children. Our findings indicate that even though continuing male entrepreneurs can escape the bind of having to work longer hours to generate higher monthly profits, they are still likely to work longer hours the more children they have. This indicates an extrinsic motivation for being self-employed, namely a desire to support one's own children and offer them greater financial support as they grow up.

Secondly, the notion of personal capital based on physical and emotional as well as human capital extends our framing, and hence understanding, of entrepreneurship through self-employment. Personal capital can be considered to be the internalised resources and assets that founders of businesses apply to their new ventures in ways that enable its formation and increase its prospects for survival, growth and ultimately success. The deployment of the notion of personal capital – bringing together knowledge-based considerations with physical capabilities and the wider emotional support structures and obligations of the family – extends treatments of entrepreneurship through self-employment beyond a resource-based economic perspective to wider considerations of the factors that lead individuals to start and run their own businesses.

This reflects a wider literature that increasingly challenges 'rational actor' and '*homo economicus*' explanations of individual's economic behaviour (e.g. Thaler, 2015), based on a wider recognition in cognition and behavioural research that individuals are not rational but instead are emotional, irrational, impulsive and prone to animal spirits that shape social sentiment (Akerloff and Shiller, 2009l Sutherland, 2007). It also complements the 'cognitive turn' in entrepreneurship research, which has looked at cognition broadly, and in particular heuristic biases such as over-confidence and over-exuberance, as a means of better understanding entrepreneurship (e.g. Baron, 2014; Cassar, 2010). Where this study diverges from behavioural and cognitive perspectives is

in the consideration of physiological, i.e. health-focused, and affective, i.e. emotional support, factors that may influence decisions to become self-employed and then succeed in this endeavour.

Thirdly, the analysis offers a re-framing of the literature on gender barriers to engaging in entrepreneurship. Much of the literature over the last two decades has found that women face distinct, and generally greater, barriers to entrepreneurship and self-employment than men, which can be personal and social as well as economic (e.g. Carter et al., 2001; Cowling and Taylor, 2001; De Bruin et al., 2007. A recent analysis challenged the extent to which women consider non-economic factors when thinking about starting their own businesses (Saradikis et al., 2014), suggesting instead that the decision to start up is predominantly an economic consideration. Our analysis indicates that marriage and having children have a negative effect on propensity to stay in self-employment for females, so supporting the idea that women suffer from non-economic constraints that limit their ability to engage in self-employment. However, our findings also indicate that higher levels of personal capital can offset these constraints and that women with these endowments can generate superior financial returns from self-employment. In other words, where relational capital arising from the particular family circumstances allows continuing women entrepreneurs to work longer hours, they can then generate significant positive financial benefits from self-employment. Where family commitments cannot be avoided, then there are likely to be constraints to self-employment. In other words, women can be successful in self-employment, but to do so must overcome family, and in particular, childcare commitments and constraints (Mazzarol et al., 1999).

Fourth, there is a positive relationship between personal capital and entrepreneurial success. Higher levels of these forms of capital increase the prospects for successful outcomes from self-employment, in particular monthly profits. The positive impact of working fewer hours for higher profits is limited to continuing male entrepreneurs, indicating that for most individuals increases in earning from self-employment require more working hours. Continuing entrepreneurs have higher human capital and as a result enjoy financial and non-financial benefits that incentivise continued self-employment.

Conversely, the outcomes for self-employed people entering from unemployment tend to be negative or non-existent, and the likelihood was higher that these individuals had lower human, physical and relational capital. This group – whose capital is low and who are entering self-employment from unemployment – appear at risk from self-exploitation, but also are less likely to have successful businesses because their personal capital tends to be lower than for entrepreneurs continuing in self-employment or entering from employment. Individuals who become self-employed from unemployment are less likely to experience positive outcomes and instead tend to work longer hours for unpredictable or in many cases inferior financial returns.

Fifth, there appears to be an opportunity to consider whether policy intervention to encourage self-employment could be more targeted at certain individuals. In particular, there is the potential to encourage employees with high levels of personal capital to enter into self-employment. These individuals are more likely to enjoy the benefits of higher monthly profits, whether or not this financial return is accompanied by reduced working hours. There is also an opportunity to encourage successful entrepreneurs to continue in self-employment, because they are much likely to exit into equivalent or superior paid employment, due to their higher levels of personal capital and possibly as a result of demonstrating entrepreneurial success in running their own business. In

other words, if business start-up policy seeks to stimulate higher levels of successful self-employment, the emphasis should be on encouraging two groups to start their own ventures: those who are already successful entrepreneurs; and employees with high personal capital.

Conversely, due consideration should be taken if policy interventions encourage individuals with lower personal capital to become self-employed. These individuals are much more likely to work longer hours and earn lower incomes. There may still be a case to encourage self-employment amongst these individuals, however, especially when earnings will be higher for these individuals than social welfare receipts. They may also gain procedural utility from running their own business, which compensates for lower incomes and longer working hours. However, these individuals are unlikely to generate significant wealth, and so the rationale for encouraging individuals who are unemployed to become self-employed cannot rest on an economic growth argument, but should instead look at savings on welfare spending and the personal non-financial benefits of this form of work.

Implications and directions for future research

The analysis in this paper established a particular case where those continuing in self-employment enjoy persistent financial and non-financial benefits that were superior to employment. It also identified a positive relationship overall between personal capital and superior financial returns from self-employment, although effects varied across groups. The analysis also found that lower personal capital reduces the likelihood of positive effects from self-employment. As such, our analysis offers a richer understanding of why self-employment can be either positive entrepreneurship or negative self-exploitation.

The approach extended notions of capital to incorporate considerations that are increasingly cognisant of a wider range of factors and variables that affect successful entrepreneurship. As such, one implication for future research that can be tested and developed is to further explore the notion of personal capital. In this study, we focused on health and family status. However, other aspects of personal capital - such as mental health, wider network relationships and the social capital that can be derived, and other forms of relational support, such as those from friends or particularly identity groups – could also be incorporated into the notion of personal capital. There is therefore scope to further extend and test this concept. In essence, the conceptual contribution of the idea of personal capital is that individuals are accumulators and receptacles of assets, attitudes and behaviours that can either enhance or constrain entrepreneurial activity. Testing this empirically, and also building a more holistic theoretical treatment of this notion, offer future opportunities for research.

As with any data source, there is a particular cultural, economic, social and institutional context within which the data are generated. A further direction for future research would therefore be to define and apply the concept of personal capital in other contexts, and determine whether the effects on successful entrepreneurship still hold, and whether the effects are similar or different. A second possible direction for future research would therefore be to apply the approach and conceptualisation developed in this paper in multiple different contexts.

There are also limitations to this approach. A focus on personal capitals privileges the individual entrepreneur, and hence their agency, and so risks proposing that the only determinants of successful entrepreneurship are the actions, capabilities and decisions of these individuals. However, there are structural and environmental factors that will

also affect levels of entrepreneurship and outcomes. These should be considered and recognised when approaches focus solely or predominantly on the individual agent.

References

Ackerman, P. and Humphreys, L. (1990), "Individual differences theory in industrial and organizational psychology", *Handbook of Industrial and Organizational Psychology*, Vol. 1, pp. 223-282.

Acs, Z. (2006), "How is entrepreneurship good for economic growth?", *Innovations*, Vol. 1 No. 1, pp. 97-107.

Akerloff, G. and Shiller, R. (2009), *Animal Spirits*, Princeton University Press: Princeton.

Anderson, A. and Jack, S. (2002), "The articulation of social capital in entrepreneurial networks: a glue or lubricant?", *Entrepreneurship & Regional Development*, Vol. 14 No. 3, pp. 193-210.

Andersson, P. (2008), "Happiness and health: well-being among the self-employed", *The Journal of Socio-Economics*, Vol. 37 No. 1, pp. 213–236.

Annink, A., Den Dulk, L. and Amoros, J. (2016), "Different strokes for different folks? The impact of heterogeneity in work characteristics and country contexts on work-life balance among the self-employed", *International Journal of Entrepreneurial Behavior & Research*, Vol. 22 No. 6, pp. 880-902.

Astbro, T. and Bernhardt, I. (2005), "The winner's curse of human capital", *Small Business Economics*, Vol. 24 No. 1, pp. 63-78.

Atherton, A. (2009), "Rational actors, knowledgeable agents. Extending pecking order considerations of new venture financing to incorporate founder experience, knowledge and networks", *International Small Business Journal*, Vol. 27 No. 4, pp. 470-495.

Atherton, A. (2006), "Should government be stimulating start-ups? An assessment of the scope for public intervention in new venture formation", *Environ Plann C Gov Policy*, Vol. 24 No. 1, pp. 21-36.

Atherton, A., Faria, J., Wheatley, D., Wu, D., and Wu Z. (2016), "The decision to moonlight: does second job holding by the self-employed and employed differ?", *Industrial Relations Journal*, Vol. 47 No. 3, pp. 279-299.

Audretsch, D. and Thurik, R. (2001), "What's new about the new economy? Sources of growth in the managed and entrepreneurial economies", *Industrial and Corporate Change*, Vol. 10 No. 1, pp. 267-315.

Baron, R. (2014), "Thinking about cognition and its central role in entrepreneurship: confessions of a 'reformed behaviorist'", in, *Handbook of Entrepreneurial Cognition*, [Ed.s] Mitchell, R., Mitchell, R., and Randolph-Seng, B., Edward Elgar: Cheltenham.

Bates, T. (1990), "Entrepreneur human capital inputs and small business longevity", *The Review of Economics and Statistics,* Vol. 72 No. 4, pp. 551-59.

Baum, R. and Locke, E. (2004), "The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth", *Journal of Applied Psychology*, Vol. 89 No. 4, pp. 587-598.

Baum, R., Locke, E. and Smith, K. (2001), "A multidimensional model of venture growth", *Academy of Management Journal*, Vol. 44 No. 2, pp. 292-303.

Becker, G. (1964), *Human Capital*, University of Chicago Press: Chicago.

Bell, A. J. D., and Jones, K. (2015). "Explaining Fixed Effects: Random Effects modelling of Time-Series Cross-Sectional and Panel Data", Political Science Research and Methods, Vol. 3 No. 1, pp. 133-153. DOI: 10.1017/psrm.2014.7

Bellu, R., Davidsson, P. and Goldfarb, C. (2006), "Toward a theory of entrepreneurial behaviour: empirical evidence from Israel, Italy and Sweden", *Entrepreneurship & Regional Development*, Vol. 2 No. 2, pp. 195-209.

Benz, M. (2005), "Not for the profit, but for the satisfaction? – Evidence on worker well-being in non-profit firms", *Kyklos*, Vol. 58 No. 2, pp. 155-176.

Benz, M. and Frey, B. (2008), "Being independent is a great thing: subjective evaluations of self-employment and hierarchy", *Economica*, Vol. 75, pp. 362–383.

Benz, M. and Frey, B. (2004), "Being independent raises happiness at work", *Swedish Economic Policy Review*, Vol. 11, pp. 95–134.

Berthoud, R. and Burton, J. (2008), *In Praise of Panel Surveys*, The Institute for Social and Economic Research (ISER).

Blair, S. and Lichter, D. (1991), "Measuring the division of household labor: gender segregation of housework among American couples", *Journal of Family Issues*, Vol. 12, pp. 91-113.

Blanchflower, D. (2000), "Self-employment in OECD countries", *Labor Economics*, Vol. 7 No. 5, pp. 471–505.

Blanchflower, D. and Oswald, A. (2004), "Well-being over time in Britain and the USA", *Journal of Public Economics*, Vol. 88, pp. 1359–1386.

Blanchflower, D. and Oswald, A. (1998), "What makes an entrepreneur?", *Journal of Labor Economics*, Vol. 16 No. 1, pp. 26–60.

Block, J. and Koellinger, P. (2009), "I can't get no satisfaction—necessity entrepreneur-ship and procedural utility", *Kyklos*, Vol. 62 No. 2, pp. 191–209.

Bosma, N., van Praag, M., Thurik, R., and de Wit, G. (2004), "The value of human and social capital investment for the business performance of startups", *Small Business Economics*, Vol. 23 No. 3, pp. 227-236.

Brooks, C., (2014). Introductory Econometrics for Finance 3rd Ed., Cambridge University Press.

Brush, C., Greene, P., and Hart, M. (2001), "From initial idea to unique advantage: the entrepreneurial challenge of constructing a resource base", *Academy of Management Perspectives*, Vol. 15 No. 1, pp. 64-78.

Caliendo, M., Hogenacker, J., Kunn, S. and Wiessner, F. (2015), "Subsidized start-ups out of unemployment: a comparison to regular business start-ups", *Small Business Economics*, Vol. 45 No. 1, pp. 165-190.

Carter, S., Anderson, S. and Shaw, E. (2001). *Women's business ownership: A review of the academic, popular and Internet literature*, Report to the Small Business Service, Department of Marketing, University of Strathclyde, Glasgow.

Cassar, G. (2010), "Are individuals entering self-employment overly optimistic? An empirical test of plans and projections on nascent entrepreneur expectations", *Strategic Management Journal*, Vol. 31 No. 8, pp. 822-840.

Clark, K., Drinkwater, S. and Robinson, C. (2017), "Self-employment amongst migrant groups: new evidence from England and Wales", *Small Business Economics*, Vol. 48 No. 4, pp. 1047-1069.

Clark, T. and Linzer, D. (2014), "Should I use fixed or random effects?", *Political Science Research and Methods*, Vol. 3, No. 2, pp. 399-408.

Coleman, J. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94 No. S, pp. S95–S120.

Cowling, M. and Taylor, M. (2001), "Entrepreneurial men and women: Two different species?", *Small Business Economics*, Vol. 18 No. 3, pp. 167–175.

Cressy, R. (1996), "Are business startups debt-rationed?", *The Economic Journal*, Vol. 106 No. 438, pp. 1253-270.

Davidsson, P. and Honig, B. (2003), "The role of social and human capital among nascent entrepreneurs", *Journal of Business Venturing*, Vol. 18, pp. 301-331.

Dawson, C., Henley, A. (2012), ""Push" versus "pull" entrepreneurship: an ambiguous distinction?", *International Journal of Entrepreneurial Behavior & Research*, Vol. 18 No. 6, pp.697-719.

De D, (2000), "SME policy in Europe", In *The Blackwell Handbook of Entrepreneurship* [Ed.s] Sexton, D. and Landstrom, H., pp 87–106, Blackwell: Oxford.

De Bruin, A., Brush, C. G. and Welter, F. (2007), "Advancing a framework for coherent research on women's entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 323–339.

Dillon, E. and Stanton, C. (2017), "Self-employment dynamics and the returns to entrepreneurship", *NBER Working Papers*, Working Paper 23168 http://www.nber.org/papers/w23168, NATIONAL BUREAU OF ECONOMIC RESEARCH, Cambridge, Mass.

Douglas, E. and Shepherd, D. (2002), "Self-employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization", *Entrepreneurship Theory and Practice*, Vol. 26 No. 3, pp. 81-90.

Duchesneau, D. and Gartner, W. (1990), "A profile of new venture success and failure in an emerging industry", *Journal of Business Venturing*, Vol. 5 No. 5, pp. 297-312.

Evans, D. and Leighton, L. (1989)' "Some empirical aspects of entrepreneurship", *American Economic Review*, Vol. 79 No. 3, pp. 519-535.

Faragher, E., Cass, M. and Cooper C. (2005), "The relationship between job satisfaction and health: a meta-analysis", *Occup Environ Med*, Vol. 62 No.2, pp. 105-112.

Faria, J. and Wu, Z. (2012). From unemployed to entrepreneur: The role of absolute bequest motive. *Economic Letters*, Vol. 114 No. 1, pp. 120-123.

Fisher, P. (2016), "Does repeated measurement improve income data quality?", ISER Working Paper 2016-11, Institute for Social and Economic Research, Essex University (https://www.iser.essex.ac.uk/research/publications/working-papers/iser/2016-11.pdf).

Frese, M., Krauss, S., Keith, N., Escher, S., Grabarkiewicz, R., Luneng, S. Heers, C., Unger, J. and Friedrich, C. (2007), "Business owners' action planning and its relationship to business success in three African countries", *Journal of Applied Social Psychology*, Vol. 92 No. 6, pp. 1481-1498.

Gartner, W. (1985), "A conceptual framework for describing the phenomenon of new venture creation", *Academy of Management Review*, Vol. 10 No. 4, pp. 696-706.

Georgellis, Y and Yusuf, A. (2016), "Is becoming self-employed a panacea for job satisfaction? Longitudinal evidence from work to self-employment transitions", *Journal of Small Business Management*, Vol. 54, No. S1, 53-76.

Gimeno, J., Folta, T., Cooper, A. and Woo, C. (1997), "Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms", *Administrative Science Quarterly*, Vol. 42 No. 4, pp. 750-783.

Granovetter, M. (2000), "The economic sociology of firms and entrepreneurs", *Entrepreneurship: The Social Science View*, 244-275. Available at SSRN: https://ssrn.com/abstract=1512272

Heim, B. (2015), "Understanding the decline in self-employment among individuals nearing retirement", *Small Business Economics*, Vol. 45 No.3, pp. 561-580.

Henley, A. (2004), "Self-employment status: the role of state dependence and initial circumstances", *Small Business Economics*, Vol. 22 No. 1, pp. 67-82.

Holtz-Eakin D. Joulfaian D. and Rosen H. S. (1994), "Sticking it out: entrepreneurial survival and liquidity constraints", *Journal of Political Economy*, Vol. 102, pp. 53 – 57.

Hughes, K. (2003), "Pushed or pulled? Women's entry into self-employment and small business ownership", *Gender, Work and Organization*, Vol. 10 No. 4, pp. 433-454.

Hundley, G. (2000), "Male/female earning in self-employment: the effects of marriage, children, and the household division of labor", *ILR Review*, Vol. 54 No. 1, pp. 95-114.

Hunter, J. (1986), "Cognitive ability, cognitive aptitudes, job knowledge, and job performance", *Journal of Vocational Behavior*, Vol. 29 No. 3, pp. 340-362.

Krantz, G., Berntsson, L., and Lundberg, V. (2005), "Total workload, work stress and perceived symptoms in Swedish male and female white-collar employees", *European Journal of Public Health*, Vol. 15 No. 2, pp. 209-214.

Lombard, K. (2001), "Female self-employment and demand for flexible, nonstandard work schedules", *Economic Inquiry*, Vol. 39 No. 2, pp. 214-237.

McDonald, R. (1996), "Welfare dependency, the enterprise culture and self-employed survival", *Work, Employment and Society*, Vol. 10 No. 3, pp. 441-447.

Manso, G. (2016), "Experimentation and the returns to entrepreneurship", *The Review of Financial Studies*, Vol. 29, No. 9, pp. 2319–2340.

Mata, J. (1996), "Markets, entrepreneurs and the size of new firms", *Economics Letters*, Vol. 52 No. 1, pp. 89-94.

Mazzarol, T., Volery, T., Doss, N. and Thein, V. (1999), "Factors influencing small business start-ups: A comparison with previous research", *International Journal of Entrepreneurial Behavior & Research*, Vol. 5 No. 2, pp. 48-63.

Mincer, J. (1974), *Schooling, Experience, and Earnings*. National Bureau of Economic Research: Washington, DC.

Moffitt, R. (1982), "The Tobit model, hours of work and institutional constraints", *The Review of Economics and Statistics,* Vol. 64 No. 3, pp. 510-15.

Naude, W., Gries, T., Wood, E., and Meintjies, A. (2008), "Regional determinants of entrepreneurial start-ups in a developing country", *Entrepreneurship & Regional Development*, Vol. 20 No. 2, pp. 111-124.

Parker, S. and Belghitar, Y. (2006), "What happens to nascent entrepreneurs? An econometric analysis of the PSED", *Small Business Economics*, Vol. 27 No. 1, pp. 81-101.

Patrick, C., Stephens, H. and Weinstein, A. (2016), "Where are all the self-employed women? Push and pull factors influencing female labor market decisions", *Small Business Economics,* Vol. 46 No. 3, pp. 365-390.

Patzelt, H. and Shepherd, D. (2011), "Negative emotions of an entrepreneurial career: self-employment and regulatory coping behaviours", *Journal of Business Venturing*, Vol. 26 No. 2, pp. 226-238.

Polanyi, M. (1967), "Sense-giving and sense-reading", *Philosophy*, Vol. 162, pp. 301-325.

Preisendorfer, P. and Voss, T. (1990), "Organizational mortality of small firms: the effects of entrepreneurial age and human capital", *Organization Studies,* Vol. 11 No. 1, pp. 107-129.

Quinlan, M., Mayhew, C., and Bohle, P. (2001), "The global expansion of precarious employment, work disorganization, and consequences for occupational health: a review of recent research", *International Journal of Health Services*, Vol. 31 No. 2, pp. 335-414.

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Rees, H. and Shah, A. (1986), "An empirical analysis of self-employment in the UK", *Journal of Applied Econometrics,* Vol. 1, pp. 95-108.

Rietvald, C., van Kippersluis, H., and Thurik, R. (2015), "Self-employment and health: barriers or benefits?", *Health Economics*, Vol. 24 No. 10, pp. 1302-1313.

Robinson, P. and Sexton, E. (1994), "The effect of education and experience on self-employment success", *Journal of Business Venturing*, Vol. 9 No. 2, pp. 141-156.

Saradikis, G., Marlow, S. and Storey, D. (2014), "Do different factors explain male and female self-employment rates?", *Journal of Business Venturing*, Vol. 29 No. 3, pp. 345-362.

Scholin, T., Broome, P. and Ohlsson, H. (2016), "Self-employment: The significance of families for professional intentions and choice of company type", *International Journal of Entrepreneurial Behavior & Research*, Vol. 22 No. 3, pp. 329-345.

Shane, S. and Venkatraman, S. (2000), "The promise of entrepreneurship as a field of research", *Academy of Management Review*, Vol. 25 No. 1, pp. 217-226.

Sutherland, S. (2007), "*Irrationality*", Pinter and Martin: London.

Taylor, M. (2001), "Self-employment and windfall gains in Britain: evidence from panel data", *Economica*, Vol. 68, pp. 539-565.

Taylor, M. (1999), "Survival of the fittest? An analysis of self-employment duration in Britain", *The Economic Journal*, Vol. 109 No. 454, pp. 140-155.

Thaler, R. (2015), "*Misbehaving: The Making of Behavioral Economics*", WW Norton: New York.

Unger, J., Rauch, A, Frese, M. and Rosenbusch, N. (2011), "Human capital and entrepreneurial success: a meta-analytical framework", *Journal of Business Venturing*, Vol. 26 No. 3, pp. 341-358.

Webb, S. (1995), "Poverty dynamics in Great Britain: preliminary results for the British household panel survey", *Institute for Fiscal studies*: London.

Table 1. Self-employed whose last year's employment status was self-employed (BHPS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	-1.062** (0.49)	-12.53*** (1.99)	469.1** (196)	0.734** (0.33)	2.179 (1.36)	260.9*** (84.7)
First degree	-1.243*** (0.29)	-7.284*** (1.27)	1009*** (111)	1.003*** (0.15)	2.948*** (0.78)	361.2*** (44.4)
Other higher	0.137 (0.20)	0.371 (0.63)	333.8*** (70.3)	0.308*** (0.09)	0.926 (0.58)	128.3*** (29.2)
A level	-0.114 (0.23)	-2.025** (0.94)	247.0*** (83.6)	0.276** (0.12)	1.786*** (0.66)	119.2*** (33.5)
O level	0.427 (0.27)	-1.853** (0.77)	153.5* (79.9)	-0.035 (0.10)	0.718 (0.62)	52.05* (29.5)
Age	0.766*** (0.06)	3.289*** (0.14)	125.5*** (15.8)	0.218*** (0.02)	1.340*** (0.13)	50.35*** (6.50)
$Age^2/100$	-0.823*** (0.07)	-3.772*** (0.17)	-123.8*** (18.5)	-0.249*** (0.03)	-1.544*** (0.16)	-54.49*** (7.94)
Good health	0.309** (0.14)	0.932** (0.39)	35.67 (52.4)	0.164** (0.07)	1.635*** (0.37)	70.39*** (22.2)
Married	0.674*** (0.19)	2.166*** (0.57)	12.96 (67.6)	0.207** (0.09)	0.572 (0.51)	-19.33 (26.7)
No. of children	-0.202** (0.09)	0.036 (0.23)	59.32** (27.6)	-0.175*** (0.04)	-1.751*** (0.24)	-46.54*** (12.3)
Constants	-12.73*** (1.04)	-29.04*** (2.91)	-2174*** (314)	-5.241*** (0.43)	-19.34*** (2.47)	-933.7*** (122)
/lnsig2u	2.320	17.83	1027	1.221	13.77	411.3
Sigma_u	3.190	12.95	1878	1.842	10.77	746.2
rho	0.911	0.655	0.230	0.772	0.621	0.233
Wald chi2(10)	221	745	246	208	208	208
Log likelihood	-1342	-38772	-83002	-3504	-28745	-57377
Observations	9185			6984		

(Source of data: Wave 1 to 18, 1991 – 2009, the British Household Panel Survey.
*; **; and *** denote significance at the 10; 5; and 1% level, respectively.
Figures in parentheses are standard errors.)
Random-effects regression of panel data.

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Table 2. Self-employed whose last year's employment status was employee (BHPS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	-0.089 (0.14)	0.036 (0.17)	1.169 (4.55)	0.029 (0.17)	0.044 (0.14)	0.318 (6.26)
First degree	0.007 (0.09)	-0.056 (0.11)	4.448 (2.84)	0.261** (0.11)	0.232*** (0.08)	7.943** (3.41)
Other higher	0.028 (0.05)	0.081 (0.07)	4.075** (1.93)	0.277*** (0.07)	0.129** (0.05)	4.798* (2.51)
A level	0.013 (0.07)	0.032 (0.09)	2.484 (2.23)	0.124 (0.09)	0.094 (0.07)	1.775 (2.91)
O level	0.081 (0.07)	-0.004 (0.09)	2.565 (2.17)	-0.055 (0.08)	0.093* (0.06)	0.475 (2.51)
Age	0.063*** (0.01)	0.098*** (0.02)	1.065** (0.50)	0.007 (0.02)	0.083*** (0.01)	0.727 (0.64)
$Age^2/100$	-0.065*** (0.02)	-0.109*** (0.02)	-1.133* (0.62)	0.004 (0.02)	-0.088*** (0.02)	-0.770 (0.79)
Good health	0.109*** (0.04)	0.232*** (0.07)	3.729** (1.89)	-0.039 (0.05)	0.010 (0.04)	1.318 (2.25)
Married	-0.046 (0.05)	0.164** (0.08)	-0.272 (2.08)	-0.091 (0.07)	0.033 (0.05)	0.259 (2.29)
No. of children	0.058*** (0.02)	-0.043 (0.04)	0.176 (0.95)	0.163*** (0.03)	0.042* (0.03)	0.569 (1.24)
Constants	-4.415*** (0.26)	2.467*** (0.39)	505.9*** (9.88)	-4.387*** (0.36)	-0.737*** (0.26)	-13.02 (11.9)
/lnsig2u	0.803	10.52	1182	1.098	3.061	0.001
Sigma_u	1.494	6.545	186.4	1.731	3.643	224.3
rho	0.691	0.721	0.976	0.749	0.414	0.001
Wald chi2(10)	59.66	62.01	20.64	48.96	92.86	11.98
Log likelihood	-6683	-178419	-359990	-3581	-140607	-325219
Observations	51284			49722		

(Source of data: Wave 1 to 18, 1991 – 2009, the British Household Panel Survey.
*; **; and *** denote significance at the 10; 5; and 1% level, respectively.
Figures in parentheses are standard errors.)
Random-effects regression of panel data.

Table 3. Self-employed whose last year's employment status was unemployed (BHPS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	0.079 (0.37)	-0.893 (1.41)	-17.00 (44.6)	0.055 (0.75)	-0.426 (0.89)	-2.885 (11.4)
First degree	0.251 (0.16)	0.712 (0.67)	48.64** (20.2)	0.563* (0.34)	1.034*** (0.39)	7.402 (4.90)
Other higher	0.149 (0.11)	0.986** (0.43)	-0.118 (13.2)	0.351 (0.23)	0.680** (0.27)	2.325 (3.37)
A level	0.362*** (0.11)	0.382 (0.48)	-3.965 (14.2)	0.546** (0.26)	0.627** (0.28)	5.259 (3.41)
O level	0.324*** (0.10)	1.358*** (0.42)	29.82** (12.0)	0.231 (0.22)	0.002 (0.22)	3.083 (2.72)
Age	0.085*** (0.02)	0.429*** (0.08)	5.979** (2.41)	0.120** (0.06)	0.111** (0.05)	0.207 (0.63)
$Age^2/100$	-0.110*** (0.03)	-0.538*** (0.10)	-7.889** (3.07)	-0.157** (0.08)	-0.129* (0.07)	-0.104 (0.85)
Good health	0.227*** (0.08)	0.779*** (0.29)	21.40** (10.0)	0.436** (0.19)	0.449** (0.18)	3.875* (2.36)
Married	0.301*** (0.10)	1.237*** (0.41)	11.72 (12.4)	0.419** (0.20)	0.379* (0.22)	5.422** (2.74)
No. of children	-0.032 (0.04)	-0.061 (0.15)	-11.28** (4.71)	-0.019 (0.09)	-0.064 (0.09)	-1.287 (1.25)
Constants	-3.825*** (0.44)	-6.708*** (1.39)	-87.11** (42.6)	-5.869*** (1.31)	-2.102** (0.83)	-7.532 (10.4)
/lnsig2u	0.465	5.060	9.056	0.719	1.679	0.001
Sigma_u	0.793	8.183	324.9	1.432	4.271	59.78
rho	0.386	0.277	0.001	0.672	0.134	0.001
Wald chi2(10)	51.96	77.58	29.67	17.97	42.53	17.97
Log likelihood	-995	-16687	-32925	-373	-7988	-16390
Observations	4571			2720		

(Source of data: Wave 1 to 18, 1991 – 2009, the British Household Panel Survey.
*; **; and *** denote significance at the 10; 5; and 1% level, respectively.
Figures in parentheses are standard errors.).
Random-effects regression of panel data.

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Table 4. Self-employed whose last year's employment status was self-employed (UK HLS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	0.238	4.402**	-1091	0.335	4.140***	2068**
First degree	-0.018	-1.930	-3112*	0.328*	1.811	-894.0
Other higher	0.380	7.846***	-1597	0.466	3.212	-815.7
A level	-0.058	-0.004	-1140	-0.092	-0.109	-358.3
O level	0.371***	4.514***	-1917*	-0.240	-0.234	-237.2
Age	0.115***	1.284***	408.5***	0.082***	0.390***	150.6***
$Age^2/100$	-0.110***	-1.264***	-432.3***	-0.080***	-0.392***	-151.3***
Good health	0.175***	2.134	1432***	0.191***	1.035***	477.4**
Married	0.099	3.301	4679***	-0.155	-0.298	939.3
No. of children	0.029	0.777**	154.4	-0.063**	-0.437***	-119.8
Constants	-6.193***	-20.66***	-5895***	-6.144***	-6.352***	-2701***
/lnsig2u	3.039	11.77	9752	2.267	6.397	1.88e-14
Sigma_u	4.570	18.41	13020	3.107	10.35	7216
rho	0.954	0.290	0.359	0.906	0.276	6.75-36
Wald chi2(10)	194.73	235.63	56.84	98.76	107.75	42.26
Log likelihood	-1892	-16791	-42063	-1843	-22370	-60389
Observations	3847			5905		

(Source of data: Understanding Society –UK Household Longitudinal Study: Wave 1-5, 2009-2014. *; **; and *** denote significance at the 10; 5; and 1% level, respectively)
Random-effects regression of panel data.

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Table 5. Self-employed whose last year's employment status was employee (UK HLS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	-0.040	-0.514	-1031***	0.152	0.079	-100.6
First degree	-0.096	-0.496	-1208***	-0.036	0.038	-142.5
Other higher	0.064	0.398	-293.6	0.372**	1.303***	-127.0
A level	-0.105	-0.411	-642.7*	-0.082	-0.155	-60.95
O level	0.179***	1.584***	-579.1**	-0.025	0.242	-28.55
Age	0.116***	0.733***	169.6***	0.106***	0.232***	56.12***
$Age^2/100$	-0.117***	-0.744***	-154.6***	-0.109***	-0.250***	-56.09***
Good health	0.110***	0.735***	571.2***	0.199***	0.571***	217.0***
Married	-0.088	-0.427	85.31	-0.080	-0.516*	-194.6
No. of children	0.023**	0.343***	93.72	0.028**	-0.101**	11.23
Constants	-7.520***	-11.71***	-3082***	-7.874***	-3.653***	-988.1***
/lnsig2u	2.883	9.370	5587	2.339	4.911	2552
Sigma_u	4.227	13.95	8734	3.221	6.577	3826
rho	0.947	0.310	0.290	0.912	0.357	0.308
Wald chi2(10)	764.93	774.38	227.05	348.2	313.64	93.07
Log likelihood	-9958	-116400	-299690	-6100	-111915	-324906
Observations	28457			33488		

(Source of data: Understanding Society –UK Household Longitudinal Study: Wave 1-5, 2009-2014. *; **; and *** denote significance at the 10; 5; and 1% level, respectively)
Random-effects regression of panel data.

Table 6. Self-employed whose last year's employment status was unemployed (UK HLS)

	Male (age 16 – 65)			Female (age 16 – 65)		
	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit	Probit: Self-Emp. Yes or No	Tobit: Self-Emp. Hours worked	Tobit: Self-Emp. Monthly profit
Higher degree	-0.084	0.757	-1013	omitted	-1.722	-149.2
First degree	-0.103	-1.472	-716.8	0.333	0.942	-175.7
Other higher	-0.060	-0.004	-720.3	omitted	-0.799	-2.907
A level	0.203	2.308	37.56	omitted	-0.579	-56.06
O level	0.279*	1.842*	-459.4	omitted	-0.433	-16.08
Age	0.145***	0.653***	102.9*	0.098***	0.089*	30.03*
Age^2 /100	-0.148***	-0.646***	-99.60	-0.098***	-0.053	-28.57
Good health	0.186***	1.231***	729.2***	0.261***	0.699***	262.0***
Married	-0.246	-0.707	-416.7	0.138	1.188	-146.8
No. of children	0.098***	0.430*	-7.813	-0.008	0.037	33.70
Constants	-7.182***	-10.52***	-1136	-5.364***	-1.603	-471.6
/lnsig2u	0.321	8.352	8117	0.976	4.010	3501
Sigma_u	3.192	12.51	6289	1.629	6.829	2265
rho	0.910	0.308	0.624	0.726	0.256	0.704
Wald chi2(10)	117.0	104.71	20.87	42.36	47.75	20.34
Log likelihood	-1033	-12357	-31827	-655	-13551	-37185
Observations	3107			3779	4029	

(Source of data: Understanding Society –UK Household Longitudinal Study: Wave 1-5, 2009-2014. *; **; and *** denote significance at the 10; 5; and 1% level, respectively)
Random-effects regression of panel data.

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[1] Self-employment represents a form of entrepreneurship that allows individuals to start their own ventures without employing others.

[2] It is of course not only conceivable but also likely that entrepreneurs receive affective and material support from partners in relationships even if not married. However, there is no evident means of testing this using either BHPS or UKHLS data. As such, we use marriage as a proxy for relational capital that is accumulated over time through commitment to a long-term relationship.

[3] The specific survey questions used are as follows:

1) Please look at this card and tell me which best describes your current situation?
Self-employed... 01
In paid employment (full or part-time) 02
Unemployed... 03
2) How many hours in total do you usually work a week in your job?
3) What was the amount of your share of the profit or loss figure shown on these accounts for this period?
Questions 1) and 2) came from the Employment section and question 3) comes from the Finance section. We also used ten explanatory variables, which were derived from the following five questions (as numbered in the survey):
4) Please think back over the last 12 months about how (her/his) health

has been. Compared to people of (her/his) own age, would you say that
(her/his) health has on the whole been...
Excellent..1
Good..2
Fair..3
Poor...4
or Very poor 5
5)   What is your current legal marital status, are you?
Married.. 1
Separated 2
Divorced..3
Widowed 4
6)   Highest educational qualification (QFEDHI, Derived Variable)
7)   Age at Date of Interview (AGE, Derived Variable)
8)   Number of children in household (NKIDS, Derived Variable)
Question 4) comes from the Health and happiness section while questions 5), 6), 7) and
8) comes from the Personal background section.