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Entrepreneurship and Regional Deprivation

Byron Graham^{a} and Karen Bonner^a*

^aQueens Management School, Queens University Belfast, BT9 5EE

* Corresponding author. E-Mail address: byron.graham@qub.ac.uk

Abstract

Purpose

People living in deprived areas can face barriers to entrepreneurship, which may be reduced through policy intervention. This study aims to examine the relationships between deprivation, entrepreneurial skills, networks and social attitudes. We also examine the relationship between these factors and entrepreneurial behaviour.

Design/methodology/approach

The study draws data from the UK Global Entrepreneurship Monitor (GEM) collected between 2011 and 2017. We focus specifically on Northern Ireland. The GEM data is matched to area level deprivation data. Logistic regression is used to study the relationships between deprivation and entrepreneurship.

Findings

People living in deprived areas perceive they are less likely to have the skills to start a business, and are less likely to know someone who has started a business in the past two years. These factors are also found to be related to entrepreneurial behaviour. In terms of social norms, they are also more likely to perceive that other people would view starting a business as a good career choice. We also find some evidence that people living in deprived areas are less likely to engage in entrepreneurial behaviour.

Research Implications and Limitations

Policies could focus on reducing the barriers to entrepreneurship. Entrepreneurship could act as a means of reducing individual and area level deprivation, by providing opportunities for those living in deprived areas. The main limitation is the use of single item measures.

Originality/value

Our study makes theoretical and practical contributions to the literature focusing on entrepreneurship and deprivation, and draws on a novel dataset and context.

Keywords: *Entrepreneurship; Deprivation; Global Entrepreneurship Monitor*

Introduction

Entrepreneurship is regarded as a driver of economic growth with new businesses generating jobs, promoting increased competition and driving productivity increases through innovative new business ideas. Academic and policy practitioners have suggested that entrepreneurship can also act as a vehicle for alleviating poverty and reducing levels of deprivation (Frankish et al. 2014; Sutter et al. 2019; Small Business Service 2004) although there has been some debate about the quality of businesses created by those in deprived areas, and hence doubts about the economic impact (Shane 2009) and the impact on social exclusion (Blackburn and Ram 2006). Despite these arguments, which are thought to be very nuanced, the mechanism for reducing deprivation is thought to primarily work via instituting social change and promoting inclusion (Ghani et al. 2014); the business owner or self-employed person gains economic autonomy and provides localised jobs and services (Blackburn and Ram 2006) resulting in multiplier effects throughout the community (Lyon et al. 2002). Central to this proposition however, is that the entrepreneur has adequate resources or access to them in order to start a business. It is recognised, however, that in deprived areas individuals face barriers to entrepreneurship due to a lack of such resources including social capital resources such as access to networks and role models; human capital resources in terms of education, skills, self-confidence and motivation; financial resources due to a lack of access to formal and informal sources of finance; and physical resources including available work spaces, and (Williams and Williams 2011). Previous studies have also found social norms to be important predictors of entrepreneurship (Nishimura and Tristán 2011).

At a localised level the role of external partners is emphasised as the source of information, finance, training and market access which enables entrepreneurial activity to be nurtured (Chliova et al. 2015). It is thus assumed that by co-ordinating such partners policy makers can foster the individual and social conditions for entrepreneurship, via the provision of required resources; the resulting increase in entrepreneurial activity helping to reduce levels of deprivation at both the individual and area level (Frankish, et al., 2014). Despite this assumption, relatively little attention has been given in the literature as to how such resources differ by area level deprivation. There is also a lack of research focusing on the impact of deprivation on the social norms for entrepreneurship. We thus draw on data from the Global Entrepreneurship Monitor (GEM) to study the associations between deprivation and key social and human capital resources. Specifically, we consider the relationships between deprivation and individual level knowledge and skills and networks. We also consider the relationship between deprivation and whether entrepreneurship is considered socially to be a good career choice. We then examine the link between these factors, deprivation and entrepreneurial behaviour, focusing on entrepreneurial intentions and business ownership. We select Northern Ireland as the area of focus. Although it is difficult to compare levels of deprivation across the UK, on an adjusted basis it is estimated that Northern Ireland is the most deprived of the four constituent UK countries with 37 per cent of the population living in deprived areas (Abel et al. 2016). Northern Ireland also typically has lower early-stage entrepreneurial activity rates than the rest of the UK (Hart et al. 2017). Despite this, the region's Executive makes little reference to entrepreneurship in its strategy for tackling poverty and social exclusion (OFMDFM 2006). Northern Ireland therefore represents an important test case for exploration of the association between entrepreneurship and deprivation and provides potential avenues for policy intervention.

Our results highlight important relationships between deprivation and some of the key drivers of entrepreneurship, with implications for policy makers and regional development organisations. People living in more deprived areas are less likely to know a recent entrepreneur, and are less likely to report having the skills to start a business. In terms of the social perception of entrepreneurship, people in more deprived areas are more likely to feel that other people in the UK would agree that starting a business as a good career choice. Engagement in entrepreneurship is also less likely for those living in more deprived areas, but there is no significant difference in entrepreneurial intentions.

Literature

Theoretical Context

Entrepreneurship can be regarded as the act of setting up a business to exploit a profitable market opportunity. This process, with opportunity recognition at its centre, can be regarded as intentional (Krueger et al. 2000) with the resulting venture created as a result of planned behaviour (Bird 1988; Katz and Gartner 1988). Theory on the latter, specifically Ajzen's model (1991) cites self-efficacy and attitudes of the entrepreneur as well as cultural and subjective norms as determinants of business creation (Ajzen 1991). However, it fails to recognise the importance of the immediate local environment in which the entrepreneur is situated. Krueger and Brazeal's (1994) model of entrepreneurial potential therefore provides a more useful vehicle for understanding the wider locational influences on new business creation, particularly for deprived areas. Their model suggests that the entrepreneurial event occurs due to a combination of individual and environmental factors, including the attitudes and attributes of the entrepreneur as well as the support available to him or her. In the context of deprivation, it could be argued that the lack of the latter is key, given the likely lack of local role model entrepreneurs to provide support and encouragement in such disadvantaged areas.

Moreover, the model, drawing on Shapero's (1981) triggering or displacement event, emphasises the role of the desirability of entrepreneurship versus other opportunities available to the individual. In deprived areas it is likely that this desirability is reduced due to a lack of information and lack of self-belief by the individual, both in terms of their own skills and ability to help themselves out of poverty (Rabow et al. 1983). The absence of business acumen and know-how also reduces the likelihood of entrepreneurship as individuals lack the business skills to turn their ideas into reality (Slack 2005). To increase desirability potential entrepreneurs thus need to see the rewards from entrepreneurship, while feasibility can be enhanced through the provision of "credible information, credible role models, and emotional/psychological support as well as more tangible resources" (Rabow et al. 1983 p.99).

The literature on the drivers of entrepreneurship furthermore distinguishes between opportunity driven and necessity driven entrepreneurship (Williams 2012). It could therefore be assumed that in deprived areas individuals would be pushed into entrepreneurship due to their lack of skills impacting on their ability to gain employment. However, there is a complex interplay between necessity driven and opportunity driven drivers of entrepreneurship (Williams and Williams 2012) and in fact across the UK levels of necessity entrepreneurship are relatively low (Hart et al. 2017).

Entrepreneurship and Deprivation

Previous studies on entrepreneurship and deprivation have highlighted the role of support as well as the need for tangible resources in the entrepreneurial decision (Frankish et al. 2014; Huggins et al. 2017; Huggins and Williams 2011; Lee et al. 2011; Williams and Williams 2011). Financial resourcing for starting a business is a frequently cited barrier to business start-up in general (Roper and Scott 2009; Lofstrom et al. 2014) but this in itself is also linked to wider resources such as human and social capital, with these playing a central role in terms of credibility and ability with regards to accessing financial capital (Jayawarna et al. 2011). For those in deprived areas, in addition to having a lack of cash reserves, access to finance is further exacerbated by low house prices and the prevalence of social housing making it difficult to generate the required collateral for formal finance providers (HM Treasury 1999; HM Treasury 2008). Informal sources of finance, such as that provided by friends and family, may also be less prevalent due to the low incomes and savings of individuals within the immediate social networks of those residing in deprived areas (Slack 2005). Despite these perceived financial barriers Lee and Drever (2014) fail to find evidence to support the notion that firms in deprived areas have more difficulty accessing finance when controlling for other firm characteristics. Additionally Hurst and Lusardi (2004) find that, in terms of the entrepreneurial decision, wealth is only important for those at the very highest levels of the distribution, and flat for the remaining 95% of the wealth distribution.

In addition to being inter-connected with financial resources, human capital and social capital in themselves can also act as barriers to entrepreneurship. These factors include “networks, prior experience, education and family ties” (Frankish et al. 2014 p. 1091). Human capital theory suggests that the knowledge and skills of individuals enables them to recognise and exploit opportunities for entrepreneurship (Penrose 1959). Lack of business education and skills are thus thought to be a particular barrier for those in deprived areas with individuals who do enter entrepreneurship operating mostly in informal businesses (Williams and Williams 2011) or ‘easy to enter’ sectors (Greene et al. 2008) due to being excluded from higher value activities due to their lack of education and professional qualifications (Frankish et al. 2014). It is also argued that many of those who enter such entrepreneurship do so out of a lack of alternative economic activity options; these ‘necessity’ type businesses offering low quality entrepreneurship with minimal returns (Blackburn and Ram 2006; Shane 2009). In contrast, Gimeno et al. (1997) argue that higher levels of education can discourage entrepreneurship by providing better employment opportunities.

The role of social capital is increasingly regarded as important in the start-up decision, particularly the role of social ties and networks in connecting entrepreneurs to resources such as knowledge, information and finance (Manolova et al. 2006; Smith and Lohrke 2008). In the entrepreneurship literature knowledge of a business owner is positively correlated with entrepreneurial activity (Arenius and Clercq 2005). In deprived areas however, where there is a lack of business ownership, there will be fewer such role models and mentors (HM Treasury 2005; Slack 2005). Support agencies and third party brokers, such as accountants, bank managers and solicitors, may be able to provide general advice but this may not necessarily reflect the conditions of deprived areas, such as lack of demand or under-served markets (Oc and Tiesdell 1999). Drawing on survey research carried out in deprived urban areas of the UK, social capital is found to be important in resource acquisition for entrepreneurship (Lee et al.

2011; Lee et al. 2018; Williams et al. 2017; Williams et al. 2018). Social capital can also have a positive impact on the performance of entrepreneurial ventures (Stam et al. 2014).

These resource constraints thus act as barriers to entrepreneurship and are further exacerbated in deprived areas by environmental factors, particularly in relation to the immediate location. High crime rates, poor image and lack of available work spaces act as a deterrent to the setting up of businesses (Williams and Williams 2011). Distance from the city centre; lack of meeting points and an unattractive ambience are also contributing factors (Welter et al. 2008). These issues may not only discourage potential entrepreneurs but could also act as a deterrent to customers and employees. The lack of a critical mass further dissuading the set-up of other associated businesses.

Although it has been suggested that there are lower levels of entrepreneurship in more deprived areas compared with less deprived (Lee and Cowling 2013), evidence on entrepreneurial activity in deprived areas is limited. Where it has been researched it supports the idea that there are increased barriers to entrepreneurship in disadvantaged areas, with a negative relationship shown between levels of deprivation and start-up activity (Thompson et al. 2012). The authors find that those living in the most deprived areas in Wales are significantly less likely to be early-stage entrepreneurs due to a combination of lower levels of demand and lower levels of education which also result in a lack of employees, business partners and an absence of community role models. Notably, they report that lack of access to services in such communities is positively linked to being an entrepreneur, likely due to lack of competition and availability of business opportunities. There is however also evidence to suggest that unemployment can both encourage and discourage entrepreneurship (Audretsch et al. 2001) due to the aforementioned necessity reasons versus lack of entrepreneurial resources amongst the unemployed.

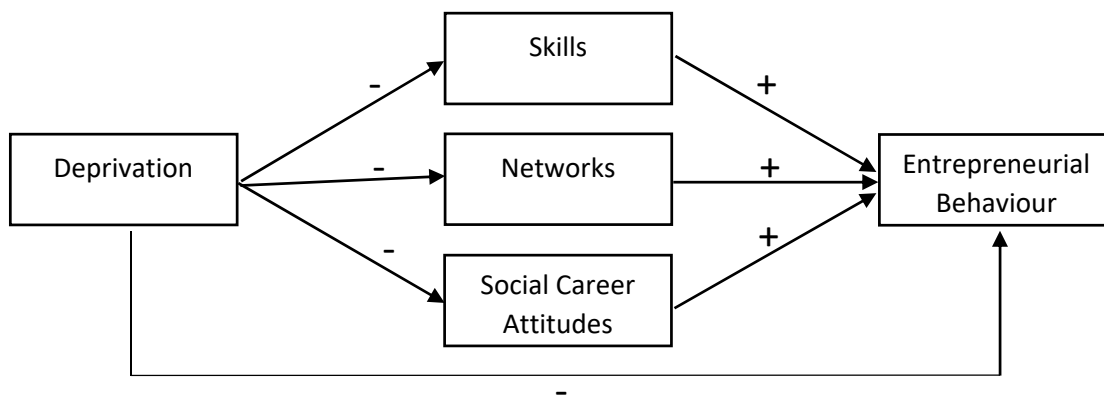
Despite the barriers to entrepreneurship faced by those living in deprived areas it has been shown that such activity can act as a route out of disadvantage. Frankish et al. (2014) provide such support, finding that business owners from deprived areas are more likely, than non-owners, to move into a more prosperous area and thus improve their living conditions. This finding, however, casts doubt on the ability of entrepreneurship to reduce area-level deprivation if successful entrepreneurs migrate to other areas. It therefore calls into question whether policy intervention to increase entrepreneurship in deprived areas would have the desired effect. The evidence for this is mixed; Williams and Huggins (2013) find that the type of entrepreneurship in deprived areas has low growth potential and suggest that policy interventions have little additionality or impact. In contrast, Jayawarna et al. (2011) find that regional grant aid and training for entrepreneurs in disadvantaged areas has a positive effect on entrepreneurship. They highlight the positive impact from the intervention in terms of increased turnover for the businesses and improved viability.

Given the paucity of literature on the relationship between deprivation and entrepreneurship and the high levels of deprivation in Northern Ireland this paper seeks to address a gap in the literature by assessing this relationship. In particular, we seek to assess the link between deprivation, attitudes and networks; and the link between deprivation and entrepreneurial behaviour. We consider potential avenues for policy intervention.

Conceptual Framework

Based on the literature review we propose a conceptual framework which links deprivation to skills, networks, social career attitudes and entrepreneurial behaviour. This framework is presented in figure 1. We expect that deprivation will impact negatively on the perceived skills, networks, and whether entrepreneurship is perceived socially to be a good career choice. We also expect these factors to be important drivers of entrepreneurial behaviour. People living in deprived areas are also expected to engage in less entrepreneurial behaviour than those living in more well off areas.

Figure 1: Conceptual framework for the study



Methodology

The empirical analysis draws on two data sources. The first is the Global Entrepreneurship Monitor (GEM). The GEM is an annual survey carried out in approximately 50-70 countries worldwide including the UK. In the UK it is administered via a telephone survey to a representative sample of the UK population. The survey asks respondents about their background, their attitudes to and perspectives on entrepreneurship, and their engagement in entrepreneurial activities. We draw on Northern Ireland data collected through the UK GEM survey across seven survey waves between 2011 and 2017.

The second data source is the Northern Ireland Measures of Multiple Deprivation (NIMDM). The NIMDM is a composite measure aimed at measuring deprivation across 7 domains: income; employment; health and disability; education, skills and training; access to services; living environment; and crime and disorder. The domains are then combined to produce the NIMDM. The NIMDM and its domains are made available at Small Area (SA) level. SA's are area level groupings of people, each consisting of around 400 individuals (Northern Ireland Statistics and Research Agency 2013). In total there are 4537 SA's in Northern Ireland, and

they are designed to be socially similar (Northern Ireland Statistics and Research Agency 2013).

The deprivation measures are combined with the GEM survey data, resulting in a dataset containing 11,088 observations. The two datasets were linked by matching the survey respondent's postcode to the SA level Multiple Deprivation Measures. This resulted in a relatively complete, clean dataset for further analysis. The independent and dependent variables for each model are described below.

Dependent Variables

To examine the relationships between deprivation and entrepreneurship we use seven dependent variables focusing on the conditions for entrepreneurship, entrepreneurial intention, and entrepreneurship. The full question wording for the dependent variables is presented in Appendix 1. Three binary dependent variables were used to study entrepreneurial skills, networks, and social norms, which focused on whether or not the respondent knew an entrepreneur; whether or not the respondent felt they had the skills to start a business; and whether or not they felt that other people in the UK would view starting a business as a good career choice. Although the latter of these variables is a perception of the population rather than individual perception, we include this to capture the underlying assessment of entrepreneurship as a viable career option as it could be argued that entrepreneurial activity is lower in more deprived areas due to its perceived improbability rather than due to lack of resources. Perceptions of whether the respondent has the skills to start a business allows us to capture an important element of the individual's perceived human capital. Whether or not the respondent knows an entrepreneur allows us to capture an important component of social capital.

Four binary dependent variables were used in the second group of models to study entrepreneurial behaviour. Latent entrepreneurship was captured by focusing on whether or not the respondent plans to start a business within the next three years. Engagement in entrepreneurship was captured using two variables, one focusing on whether or not the respondent currently owns a business, and another focusing on whether or not the respondent currently owns a business over 42 months old. Total early stage entrepreneurship was included as our final dependent variable, and is a combined measure of nascent entrepreneurship and established businesses.

Independent Variables

The focal independent variable for the study is deprivation, measured using the NIMDM described above. The deprivation ranks were converted to deciles for inclusion in the final models. Implicit in our discussion is that the conditions for entrepreneurship are related to intended and actual entrepreneurship. We test this proposition in our full models by including the three binary variables measuring entrepreneurial conditions alongside deprivation and the control variables.

Control Variables

Previous research has found gender to be an important determinant of entrepreneurial activity, and we therefore include gender as a control variable. Age has also been found to be an important determinant of entrepreneurship and we therefore include a categorical variable

measuring three age groups: 18-29, 30-39, and 40+. Although respondents to the Northern Ireland survey were predominantly white, we also include ethnicity as a control variable in the models. As entrepreneurship could be influenced by wider economic and social conditions at the time of the survey we also control for the year in which the survey was carried out.

Data Analysis

The first step in our analysis strategy is to produce descriptive summaries of the data, and to visualise the key dependent variables by level of deprivation. Logistic regression is then used to examine the associations between the dependent and independent variables due to the binary nature of the dependent variables. All data processing and numerical analyses were carried out using the R software for statistical computing, version 3.4.2. Visualisations were created using Microsoft Excel.

Results

Descriptive Statistics

The descriptive statistics for the dependent variables, broken down by deprivation decile are presented in table 1. To help with interpretation these are presented visually in figure 2 and figure 3. Across all levels of deprivation, 37.54% of respondent's report that they have the skills to start a business. Fewer people in the most deprived areas report they have the skills to start a business (31.77%), compared with less deprived areas. The highest proportion of respondents reporting to have the skills to start a business are in decile 6 (40.59%), but deciles 4-10 are all around 40%.

In terms of entrepreneurial networks, 24.33% of respondents state that they know someone who started a business within the past two years, with the highest percentage in decile 7 areas (27.14%). The lowest proportion of respondents who report that they know an entrepreneur are from areas in decile 9 (21.71%) followed by respondents living in the most deprived areas in decile 1 (22.09%).

Across all levels of deprivation, 50.5% of respondents agreed with the statement that most people in the UK would agree that starting a business is a good career choice. This was highest in the most deprived areas (decile 1) with 56.38% reporting that people in the UK would rate it as a good career choice. In contrast, the lowest proportion is in the most well off areas, with 46.5% of respondents in decile 10 stating that most people in the UK would agree that entrepreneurship is a good career choice.

Focusing on the behavioural measures, there appears to be a small amount of variation in the number of people planning to start a business, which ranges from a minimum of 4.42% in decile 4 to 6.65% in decile 7. In contrast, there is more variation in actual engagement in entrepreneurship across the deprivation levels. Fewer respondents in the most deprived areas report that they own or manage a business, with only 5.73% of respondents in decile 1, compared with a high of 13.56% of respondents in decile 6. There is a similar pattern with the proportion of people who own and run an established business, with only 2.18% in the most deprived areas, compared with a high of 7.81% of respondents in areas in decile 6. TEA is also lowest in the most deprived areas (3.81% in decile 1), and highest in areas in decile 7, with 6.18% of respondents engaged in TEA.

Descriptive statistics for the control variables are presented in table 2. A majority of respondents (65.25%) fall in the 40+ age range, with 17.67% aged between 18 and 29 and 15.42% aged between 30 and 39. Just over half of respondents are male (54.81%), and nearly all have a white ethnicity (97.88%).

Table 1: Descriptive statistics showing the percentage of respondents selecting ‘yes’ for each variable, by deprivation decile.

MDM (decile)	Ent. Skills	Ent. Network	Socially a good career choice	Latent Entrepreneur	Business owner	Established business owner	TEA
1	31.77%	22.09%	56.38%	5.91%	5.73%	2.18%	3.81%
2	35.49%	24.23%	51.83%	5.53%	10.83%	5.54%	5.81%
3	35.74%	23.84%	49.80%	5.04%	9.74%	4.64%	4.73%
4	39.09%	24.04%	49.44%	4.42%	12.00%	6.54%	5.36%
5	37.72%	25.73%	52.07%	5.36%	12.65%	6.36%	4.82%
6	40.59%	24.00%	53.56%	5.89%	13.56%	7.81%	5.81%
7	38.89%	27.14%	49.54%	6.65%	12.17%	5.90%	6.18%
8	38.15%	25.27%	48.31%	5.07%	12.22%	6.09%	5.64%
9	39.06%	21.71%	47.75%	4.34%	9.64%	5.81%	4.45%
10	38.84%	25.50%	46.50%	4.42%	11.11%	5.91%	5.00%
Mean	37.54	24.33	50.5	5.26	10.93	5.682	5.132
n	10909	11062	9858	10932	11074	11088	11088
missing	179	26	1230	156	14	0	0

Figure 2: Bar charts showing the percentage of respondents who selected ‘yes’ for each of the attitudinal and network variables by deprivation decile.

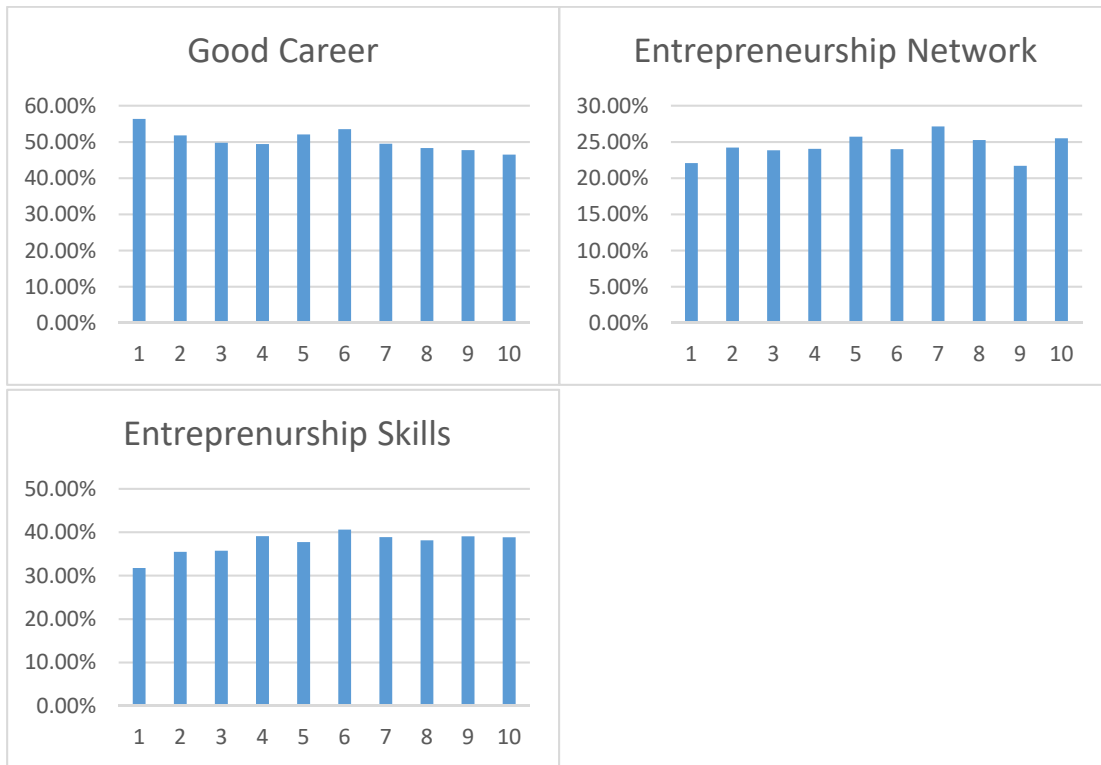


Figure 3: Bar charts showing the percentage of respondents who selected ‘yes’ for each of the entrepreneurial behaviour variables, by deprivation decile.

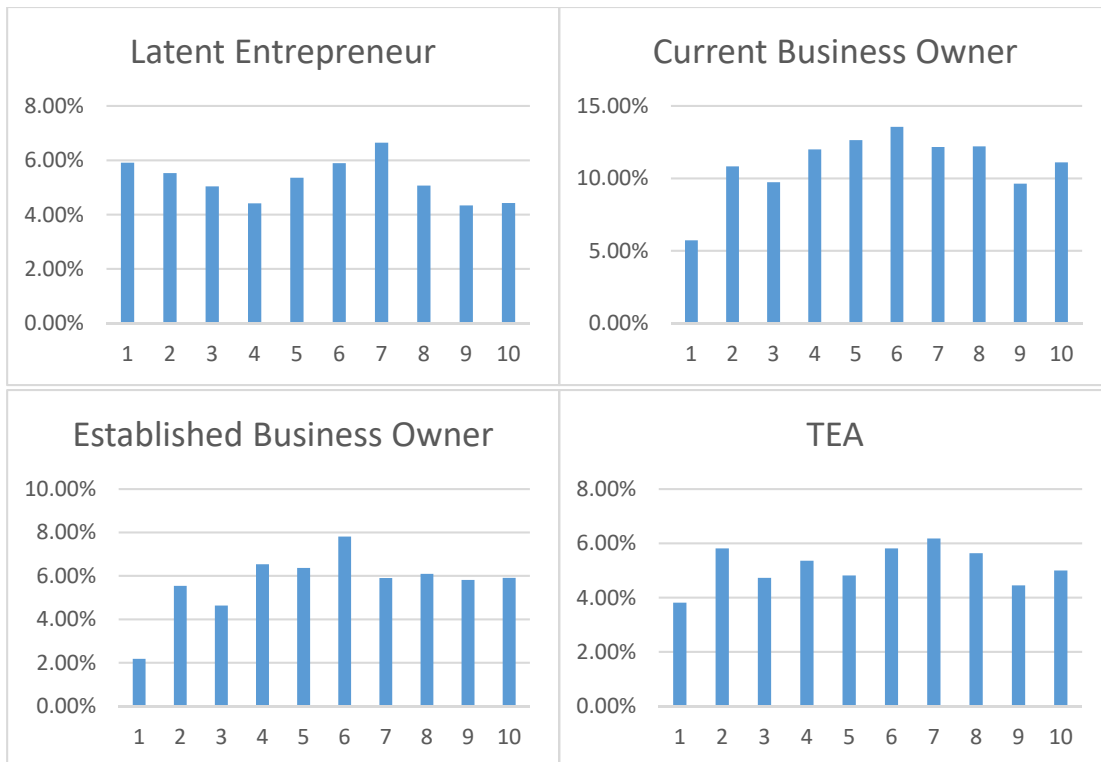


Table 2: Descriptive statistics for the control variables

Variable	Percentage	N
Age 18-29	17.67%	1959
Age 30-39	15.42%	1710
Age 40+	65.21%	7230
Age missing	1.70%	189
Male	45.19%	5011
Female	54.81%	6077
Ethnicity:		
White	97.88%	10853
Mixed	0.30%	33
Asian	0.63%	70
Black	0.17%	19
Ethnicity missing	1.02%	113

Results of the Regression Analysis

The first set of models focus on the relationships between deprivation and entrepreneurial skills, networks, and norms. These are presented in table 3. Focusing on the factors related to whether or not respondents have the skills to start a business the results show that people living in less deprived areas are more likely to report having the skills to start a business, when compared with the most deprived areas. Older respondents are also significantly more likely to report having the skills to start a business. Females are significantly less likely to report having the skills to start a business.

The second model focuses on the relationship between deprivation and whether the respondent knows an entrepreneur who has started a business within the past two years. Respondents living in areas in the 5th, 7th, 8th, and 10th deprivation deciles are significantly more likely to know a recent entrepreneur compared with those living in the most deprived decile. Older people, and males are also significantly more likely to know a recent entrepreneur. Respondents to the 2016 survey are also significantly more likely to know a recent entrepreneur compared with those responding to the 2011 survey.

The final attitudinal model focuses on the relationships between deprivation and whether the respondent believes other people in the UK agree that entrepreneurship is a good career choice. The results show that people living in deprived areas are more likely to feel that other people in the UK would rate starting a business is a good career choice. The exceptions are people living in decile 6 areas, where no evidence is found for a relationship. Older respondents and males are also significantly more likely to feel that other people in the UK rate starting a business as a good career choice. Respondents in the 2013 – 2017 surveys are more likely to feel that other people in the UK would rate starting a business as a good career choice, compared with respondents in the 2011 survey. Older people are less likely to feel that other people in the UK would rate starting a business as a good career choice

The second group of models, presented in table 4, focus on the relationships between deprivation and entrepreneurial behaviour. The first of these models looks at the relationships between deprivation and latent entrepreneurship. No evidence is found for a relationship between deprivation and whether the respondent intends to start a business within the next three years. Older people and females are less likely to intend to start a business in the next three years.

The second model presented in table 4 focuses on the relationships between deprivation and whether the respondent currently owns and manages a business. The results show that people living in less deprived areas are significantly more likely to own and manage a business compared with those living in the most deprived areas. Older people are significantly more likely to be a current business owner, as are males. Respondents to the more recent surveys (2013-2017) are significantly less likely to be a current business owner compared with respondents to the 2011 survey.

The third behavioural model presented in table 4 focuses on the relationship between deprivation and whether the respondent currently owns an established business. The results of this model show that respondents living in more well off areas are significantly more likely to be running an established business compared with those living in the most deprived areas. Older respondents are also significantly more likely to be running an established business, whereas females are less likely to be running an established business. Compared with respondents to the 2011 survey, respondents in 2014, 2015 and 2017 are significantly less likely to be running an established business.

The final model presented in table 4 focuses on the relationship between deprivation and TEA. Some evidence is found for a relationship between deprivation and TEA, with early-stage entrepreneurial activity more likely for people living in deciles 2, 4, 6, 7, and 8, compared with those living in the most deprived areas. However, no evidence is found for a relationship in the most well off areas, or in decile 3 and 5. Respondents aged between 30 and 39 are significantly more likely to be engaged in TEA compared with those aged between 18 and 29. However, those aged 40+ are significantly less likely to be engaged in TEA compared with those in the 18-29 age group. Females are also significantly less likely to be engaged in TEA, as are respondents with a black ethnicity. Compared to the respondents in the 2011 survey, respondents in 2013 and 2015 are significantly less likely to be engaged in TEA.

Table 5 presents the full models, which focus on the relationships between deprivation and entrepreneurial behaviour. These models, differ from those presented in table 4 in that we also examine the effect of the three attitudinal and network variables on entrepreneurial behaviour. This allows us to examine whether there is a relationship between these variables and entrepreneurial behaviour, as well as examining the relationship between deprivation and entrepreneurial behaviour whilst controlling for these factors. The first model, focusing on latent entrepreneurship show no evidence for a relationship between deprivation and latent entrepreneurship, which is the same as the findings presented in table 4. Significant positive relationships are found between latent entrepreneurship and whether the respondent knows an entrepreneur, whether they believe they have the skills for entrepreneurship, and whether they feel that other people in the UK would rate entrepreneurship as a good career choice. However, only weak evidence is found for the latter relationship. Consistent with the model presented in table 4, the evidence presented in the second model of table 5 shows that people in less deprived

areas are significantly more likely to be a current business owner. There are also significant positive relationships between whether the respondent knows an entrepreneur and whether they are a current business owner, and between whether they believe they have the skills to start a business and being a current business owner. The relationship between deprivation and established business ownership is consistent with the model presented in table 4. We also find evidence for a significant positive relationship between whether the respondent knows an entrepreneur and established business ownership, and between whether the respondent believes they have the skills to start a business and established business ownership. In the full model focusing on TEA, less evidence is found for a relationship between deprivation and TEA with only those living in decile 7 being significantly more likely to be engaged in TEA compared with those living in the most deprived areas. Respondents who know an entrepreneur and who perceive they have the skills to start a business are significantly more likely to be involved in TEA.

Table 3: Logistic regression models showing the relationship between deprivation, entrepreneurship skills, networks, and socially a good career choice.

	Entrepreneurship Skills	Entrepreneurship Network	Good Career Choice
Multiple Deprivation Measure (decile)			
2	0.18234 .	0.124002	-0.17872 .
3	0.22466*	0.130237	-0.27848**
4	0.37432***	0.133367	-0.24309**
5	0.2852**	0.239326*	-0.17838 .
6	0.43132***	0.157437	-0.08162
7	0.3427***	0.343416***	-0.27365**
8	0.28477**	0.221908*	-0.29741**
9	0.35398***	0.093415	-0.29503**
10 (least deprived)	0.33922***	0.29578**	-0.34072***
Age 30-39	0.46144***	0.098467	-0.17564*
Age 40+	0.18594***	-0.60905***	-0.21045***
Female	-0.84262***	-0.28968***	-0.15295***
Ethnicity:			
Mixed	0.44533	0.003009	-0.14725
Asian	0.31507	-0.16766	0.65881*
Black	0.6255	0.515396	0.02915
Survey Year:			
2012	0.01531	0.025569	0.11264
2013	-0.03586	-0.08232	0.28731***
2014	0.03343	0.0031	0.37865***
2015	-0.06232	-0.01361	0.36546***
2016	0.11588	0.167454*	0.51523***
2017	0.02834	0.128468	0.52156***
(Intercept)	-0.57463***	-0.81177***	0.18994*

Significance codes: . p<0.10 *p<0.05 **p<0.01 ***p<0.001

Table 4: Logistic regression models showing the relationship between deprivation and entrepreneurial behaviour.

	Latent Entrepreneur	Current Business Owner	Established Business Owner	TEA
Multiple Deprivation Measure (decile)				
2	0.02335	0.68118***	0.980785***	0.4257*
3	-0.06507	0.57923***	0.782196**	0.2916
4	-0.21056	0.81437***	1.14671***	0.3815 .
5	-0.01312	0.82803***	1.041976***	0.2708
6	0.13091	0.94528***	1.313956***	0.5171*
7	0.25862	0.80881***	0.985698***	0.5615**
8	-0.05578	0.77492***	0.94708***	0.4154*
9	-0.12015	0.5061**	0.882214***	0.2507
10 (least deprived)	-0.1688	0.63423***	0.93121***	0.3301
Age 30-39	-0.03037	0.62159***	1.139355***	0.3231*
Age 40+	-0.9077***	0.64634***	1.835818***	-0.4384***
Female	-0.89756***	-1.04755***	-1.17119***	-0.9558***
Ethnicity				
Mixed	0.70493	0.17206	-0.56154	0.8536
Asian	1.24367***	-0.45952	-0.11075	0.5316
Black	1.48226*	0.65903	0.357738	1.6170**
Survey Year				
2012	0.30058 .	0.08673	0.008604	0.0000
2013	-0.01089	-0.21521*	0.145442	-0.3917**
2014	0.02927	-0.24555*	-0.3073*	-0.0516
2015	0.0727	-0.45752***	-0.73967***	-0.3075 .
2016	-0.03873	-0.21648*	-0.18565	-0.1632
2017	-0.26405	-0.31327*	-0.29166 .	-0.2304
(Intercept)	-1.99254***	-2.66672***	-4.65404***	-2.5120***

Significance codes: . p<0.10 *p<0.05 **p<0.01 ***p<0.001

Table 5: Logistic regression models showing the relationship between deprivation and entrepreneurial behaviour. Full models including deprivation, attitudinal and network variables.

	Latent Entrepreneur	Current Business Owner	Established Business Owner	TEA
Multiple Deprivation Measure (Decile)				
2	-0.07286	0.69616***	1.006799***	0.37294
3	-0.21742	0.5317**	0.786344**	0.25462
4	-0.34476	0.69683***	0.985519***	0.24952
5	-0.14805	0.72932***	0.902849***	0.13599
6	-0.05771	0.85184***	1.206711***	0.29039
7	0.155474	0.68278***	0.76739**	0.45289*
8	-0.21339	0.64848***	0.719486**	0.32335
9	-0.17391	0.46257*	0.757611**	0.26197
10	-0.34959	0.58171**	0.87385**	0.19115
Good career choice	0.164015 .	-0.01573	-0.02056	0.09641
Knows an entrepreneur	0.834168***	0.67009***	0.382363***	1.18971***
Skills to start a business	1.7131***	1.61441***	1.673121***	2.16421***
Age 30-39	-0.20398	0.49513***	1.037488***	0.14545
Age 40+	-0.90649***	0.67652***	1.877212***	-
Female	-0.59277***	-0.72677***	-0.84809***	-
Ethnicity				
Mixed	0.918286	0.27016	-0.61212	1.13094
Asian	1.257894***	-0.388	0.130466	0.62249
Black	1.463618*	0.34961	0.063408	1.40552*
Survey Year				
2012	0.239793	0.02484	-0.0013	-0.04653
2013	0.009413	-0.24862*	0.130712	-0.34209*
2014	-0.09638	-0.27139*	-0.3346*	-0.07374
2015	0.111352	-0.45944***	-0.79749***	-0.24217
2016	-0.14773	-0.26718*	-0.17158	-0.2826 .
2017	-0.42414*	-0.33803*	-0.28721	-0.29632
(Intercept)	-3.30807***	-3.80268***	-5.76675***	4.44283***

Significance codes: . p<0.10 *p<0.05 **p<0.01 ***p<0.001

Discussion

Our key assumption is that those in deprived areas face barriers to entrepreneurship, such as a lack of human and social capital resources, which result in lower levels of entrepreneurial behaviour. Resources on their own, however, will not enable entrepreneurship if it is not thought to be a desirable career opportunity. We find, perhaps surprisingly, that people in wealthier areas are least likely to agree that people in the UK would feel that starting a business is a good career choice, whereas people in the most deprived areas are most likely to agree that other people in the UK would feel that starting a business is a good career choice. This may be because those living in the least deprived areas have more career opportunities, or are already in employment and given the risk associated with starting a business and the associated opportunity costs when in employment, people with well-paid professional jobs may be less likely to rate starting a business as a good idea. These findings are important as the desirability effect, as outlined by Shapero (1981), can be regarded one of the pre-conditions for entrepreneurship. Given the higher perceived desirability in more deprived areas, it then becomes important to establish the likelihood of engaging in entrepreneurial activity and whether individuals in those areas have the resources to do so.

Although people in deprived areas report that people in the UK would agree that starting a business to be a good career choice, we find that they are less likely to report that they have the skills to start a business. This supports previous findings (Williams and Williams 2014; Frankish et al. 2014) and highlights the role of human capital in the entrepreneurial decision. Indeed, this perceived lack of skills results in low self-efficacy, as theorised by (Ajzen 1991), thus acting as a deterrent to business creation even for those for whom it appears a good career choice.

Access to social capital is also found to vary by level of deprivation, with those in the wealthiest areas significantly more likely to personally know an entrepreneur than those in the most deprived areas. Although this finding is not unexpected (Slack 2005) this lack of a personal contact acts as a barrier to entrepreneurship as it not only limits access to networking and mentoring possibilities but also curbs exposure to a local role model reducing the legitimacy of entrepreneurship for those with a similar background.

Our findings that those in the most deprived areas have significantly lower human and social capital are perhaps not surprising. We hypothesise that this lack of resources act as a barrier to entrepreneurship and this is supported by our finding that people in deprived areas are less likely to engage in entrepreneurship. Although the rate of business ownership does not increase in a linear way through the deciles, what is clear from the findings is that the most deprived areas have significantly lower levels of both early-stage and established business ownership than those in less deprived areas. This corresponds with other findings from the UK (Lee and Cowling 2013; Thompson et al. 2012) and supports our assumptions that the barriers to entrepreneurship are higher in more deprived areas.

The relationships between deprivation and entrepreneurial behaviour remain even when controlling for the three attitudinal and network variables, with the exception of the model focusing on TEA. We also present evidence for a relationship between whether the respondent knows a recent entrepreneur and entrepreneurial behaviour, and between whether the respondent believes they have the skills to start a business and entrepreneurial behaviour. This confirms our original assumption that these factors are important in entrepreneurial behaviour.

However, less evidence is found for a relationship between whether the respondent believes other people in the UK would rate entrepreneurship as a good career choice and entrepreneurial behaviour.

Conclusion

The findings presented in this study suggest that there are differences in the skills, networks and attitudes towards entrepreneurship, and engagement in entrepreneurial behaviour by level of deprivation in Northern Ireland. These differences do also appear to be related to entrepreneurial skills and networks, the lack of which act as barriers to entrepreneurship in more deprived areas. This is particularly important given that those in deprived areas are more likely to agree that other people in the UK would view entrepreneurship as a good career choice.

The lack of entrepreneurial skills and network resources could be considered a market failure in terms of efficient distribution of resources for entrepreneurship. It could therefore be argued that the level of entrepreneurial activity could be increased by enhancing the required human and social capital resources in these areas. Previous research has suggested that policy interventions are not necessarily needed for entrepreneurial activity in deprived areas nor do they have the desired effect (Williams and Huggins, 2013). However as outlined previously, policymakers could act as the co-ordinating external partner, drawing on existing resources to address the acute resource needs of those in deprived areas rather than implementing additional interventions.

In terms of human capital skills, it suggests a role for the provision of basic business skills and, arguably, softer skills such as self-confidence which could be tackled through provision in local educational establishments. Social capital could be addressed through the provision of networking events.

It is not to say that enhancing skills and networks will result in a large swing towards business creation in deprived areas. Indeed, as previously mentioned, businesses in such areas are not necessarily of high quality. However, providing people with skills and networks which allows them to access alternative opportunities, such as starting their own business, could help address issues such as inclusion and help people in deprived areas to help themselves out of poverty. Northern Ireland typically lags behind other UK regions in terms of entrepreneurial activity and there is no evidence to suggest that opportunities for business creation are any lower there. Thus, there is potential spare capacity for entrepreneurship in the region and it appears that by co-ordinating resources more efficiently policy could promote entrepreneurship to help address some of the deprivation issues as well as increasing entrepreneurial capacity overall.

The main limitations to the study are the reliance on single item measures for the dependent variables. Ideally, we would combine a number of variables, by way of a factor analysis, to more effectively measure these latent constructs. Future research could also consider exploring the relationship between deprivation and entrepreneurship in other areas of the UK or further afield.

Appendix 1: Specific Questions from GEM

Variable	Question
Entrepreneurship Skills	Do you have the knowledge, skill and experience required to start a new business?
Entrepreneurship Network	Do you know someone personally who started a business in the past 2 years?
Latent Entrepreneur	Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?
Good career choice	In the UK, would most people consider starting a new business a desirable career choice?
Current Business Owner	Are you, alone or with others, currently the owner of a business you help manage, self-employed, or selling any goods or services to others?
Established Business Owner	Manages and owns a business that is older than 42 months
Total Early Stage Entrepreneurship (TEA)	Involved in Total early-stage Entrepreneurial Activity

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