

# **Effects of structural, relational and cognitive social capital on resource acquisition: a study of entrepreneurs residing in multiply deprived areas**

## **Abstract**

Emerging research demonstrates that structural social capital facilitates the resource acquisition of entrepreneurs residing in multiply deprived areas. However, their usage of relational and cognitive social capital that translates to accessible resources is not well understood. We contribute to knowledge and comprehensively examine effects of structural, relational and cognitive social capital taken together on the resource acquisition of entrepreneurs residing in multiply deprived areas. Results from a national survey of entrepreneurs residing in multiply deprived areas across England show that large networks, bonding ties, trust, reciprocity, obligations and expectations, and shared language and codes facilitate their resource acquisition. Also, we demonstrate that they are reluctant or unable to bridge social distance and adopt narrative storytelling. Furthermore, the results indicate that entrepreneurs residing in multiply deprived areas in the most deprived regions suffer from less resource acquisition.

**Keywords:** Entrepreneurship, Multiple Deprivation, Social Capital, Resources

## **1. Introduction**

Promoting entrepreneurship in multiply deprived areas to tackle social exclusion is an important public policy agenda in England (Bennett, 2014; Blackburn and Ram, 2006; Down, 2012; Greene et al, 2008; Huggins and Williams, 2009; Lee and Drever, 2014; ODPM, 2004; Southern, 2011), and internationally (EC, 2013; OECD, 2015). Multiply deprived areas are distinct localities-places characterised by interconnected problems such as poverty, crime, persistent unemployment, limited services and large numbers of socially excluded individuals (Boon and Farnsworth, 2011; Karner and Parker, 2008). Entrepreneurship in multiply deprived areas is particularly challenging, because of scarce well-functioning business support (DeClercq and Honig, 2011; Frankish et al, 2014; Lee and Cowling, 2012; UKCES, 2011). Social capital is an inherently humanistic and intangible asset inhering in networks and indispensable source of informal support for entrepreneurs (Anderson and Jack, 2002; Gedajlovic et al, 2013; Westlund and Bolton, 2003). However, the usage of social capital by entrepreneurs residing in multiply deprived areas that translates to accessible resources ‘is an under-researched topic’ (Williams et al, 2017:719). For both Kwon and Adler (2014) and Putnam (2015), it is imperative to better understand the nature and characteristics of social capital that could foster social inclusion.

In the management and entrepreneurial process, social capital is multifaceted and comprises ‘structural’ network configurations, ‘relational’ behaviours and ‘cognitive’ constructions of communication (Nahapiet and Ghoshal, 1998). Particular importance is paid to how entrepreneurs residing in multiply deprived areas draw on structural social capital- especially, bonding ties for much of their informal support and resources (Anderson and Miller, 2003; Lyon et al, 2007; Williams and Williams, 2011, 2012; Williams and Huggins, 2013). However, we simply do not know enough about the usage of relational and cognitive social capital by entrepreneurs suffering from a combination of multiple disadvantages (Foley

and O'Connor, 2013; Kerr and Dyson, 2016). Therefore, the *purpose* of this paper is to examine their usage of structural, relational and cognitive social capital taken together and effects on resource acquisition. More comprehensively addressing the usage of social capital by entrepreneurs residing in multiply deprived areas also pays greater attention to the considerable interest surrounding 'where' entrepreneurship takes place and spatial context (Trettin and Welter, 2011; Welter, 2011; Zahra and Wright, 2011; Zahra et al, 2014).

This study is based on data from a nationally representative survey of entrepreneurs residing in multiply deprived areas of England who had completed the New Entrepreneurship Scholarship NES training programme. The entrepreneurs all resided in the most deprived Lower Super Output Areas LSOAs according to the Index of Multiple Deprivation IMD – such areas are typically urban and there are usually multiple obstacles to enterprise development (DCLG, 2008; DfES, 2003). The NES initiative provided training to entrepreneurs residing in multiply deprived areas and aimed to help them develop enterprise skills and confidence (Jones and Jayawarna, 2010; Lee et al, 2011; Rouse and Jayawarna, 2006, 2011; Taylor et al, 2004). Therefore, NES entrepreneurs are a highly relevant sample.

The remainder of this paper is structured as follows. First, we identify the challenges of entrepreneurs residing in multiply deprived areas and examine social capital theory. Then we present the survey method, regression models and results. Finally, we discuss the importance of the results for theory, policy-makers and practice.

## **2. Literature Review**

### **2.1 Spatial context, multiple deprivation and entrepreneurship**

Spatiality refers to where entrepreneurship takes place and the distinctiveness of places-localities (Anderson, 2000). Put another way, the 'characteristics of physical business location; business support infrastructure; local communities' (Welter, 2011:168). Different

spatial contexts such as distressed, depleted and multiply deprived areas influence levels and types of entrepreneurship (Trettin and Welter, 2011; Zahra and Wright, 2011; Zahra et al, 2014). Distressed areas reflect economic dislocation and structural unemployment – often in large agglomerations – brought about by corporate relocation and plant closures as a response to global competition (Grabher, 1993; Welter et al, 2008). The economic shock suffered in distressed areas creates job losses, destabilises local value chains and reduces entrepreneurial opportunities (Izquierdo et al, 2008). Depleted areas typically refer to underdeveloped peripheral localities on the edge of cities or large urban areas that are less industrialised, suffer from a sense of malaise, lack higher order markets and risk losing local talent (Benneworth, 2004; Huggins et al, 2017; Johnstone and Lionais, 2004; McKeever et al, 2015). Small and isolated rural communities can also be considered peripheral depleted localities, because of lower population density and limited local markets (Anderson et al, 2016; Muller and Korsgaard, 2018; Ring et al, 2010).

By contrast, multiply deprived areas typically reflect urban areas with complex infrastructure and social problems (Cattell, 2001; Karner and Parker, 2008; North and Syrett, 2008; Percy-Smith, 2000). As such, deprived areas and their residents suffer ‘from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, poor health and family breakdown’ (ODPM, 2004:2004:2). Related to this, there are large numbers of socially excluded sub-groups e.g. ethnic minorities, unemployed, low income, lone parents (Boon and Farnsworth, 2011; Bretherton and Pleace, 2011; Daly and Silver, 2008; Kitching, 2006). It has long been recognised that there is weak economic growth and enterprise performance in multiply deprived areas (Blackburn and Ram, 2006; Crisp, 2013; Southern, 2011). Indeed, new businesses started by entrepreneurs residing in multiply deprived areas suffer from scalability and growth issues and are often unable to generate a living wage (Greene et al, 2008; Jayawarna et al, 2011; Rouse and

Jayawarna, 2006, 2011; Shane, 2009; UKCES, 2011). Access to finance and business support is particularly problematic and infrastructure lacking (Huggins and Williams, 2009, 2011; Lyon et al, 2007; North and Syrett, 2008; Williams and Williams, 2011, 2012).

## **2.2 Social embeddedness and social capital**

All enterprises are strongly dependent on access to both material (e.g. equipment, finance) and non-material (e.g. knowledge, skills) resources (Drucker, 1985). The concept of social embeddedness reflects social relations that influence economic outcomes and resource sharing (Granovetter, 1992; Uzzi, 1996). Social embeddedness is important in the entrepreneurial process and resources accrue from high integrity social relations (Jack, 2005; Jack and Anderson, 2002; Johannisson et al, 2002). For instance, supportive social relations help entrepreneurs to overcome the liabilities of newness and smallness (Aldrich and Zimmer, 1986; Birley, 1985; Larson and Starr, 1993; Witt, 2004). In addition, social embeddedness is crucial for enhancing the processes of entrepreneurial learning and strategy development (Elfring and Hulsink, 2003; Hoang and Antoncic, 2003; Lechner and Dowling, 2003; Neergaard, 2005). More specifically, entrepreneurs residing in multiply deprived areas can access useful resources from socially embedded relations to tackle the multiple challenges and obstacles associated with deprivation (Blackburn and Kovalainen, 2009; Slack, 2005). Supportive social relations are a relatively inexpensive way to access valuable resources (Klyver and Foley, 2012).

Social capital theory extends the embeddedness concept and provides a more holistic frame for the study of social action (Bourdieu, 1986; Lin, 2000, 2001). Thus, social capital represents different types of network relations and everyday sociality that facilitate access to resources (Coleman, 1988; Fukuyama, 1995; Portes and Landolt, 2000; Putnam, 2000). It inheres in networks and can represent both a collective and individual intangible asset

(Beugelsdijk and Schaik, 2005; Woolcock and Narayan, 2000). With this said, much scholarship applies the individualistic approach and endeavours to understand ‘how individuals invest in social relations’ (Lin, 1999:32). Social capital creates value for organisations and managers, and is highly valuable (Adler and Kwon, 2002; Inkpen and Tsang, 2005; Kwon and Adler, 2014). As Moran (2005:1129) suggests, social capital ‘may well prove to be the firm’s most enduring source of competitive advantage’. The everyday social capital usage by entrepreneurs is associated with the acquisition of scarce and valuable resources needed for growth (Anderson and Jack, 2002; Batjargal, 2006; Gedajlovic et al, 2013). Entrepreneurs residing in multiply deprived areas can overcome a lack of formal business support and mentoring by building social capital to access resources (Jayawarna et al, 2011; Jones and Jayawarna, 2010; Lee et al, 2011). For Nahapiet and Ghoshal (1998), three social capital dimensions promote managerial and entrepreneurial benefits; structural (network size, diversity); relational (trust, norms); and cognitive (language and codes, narratives).

*2.2.1 Structural social capital.* The structural dimension of social capital refers to the building of network ties and ‘who you reach’ (Nahapiet and Ghoshal, 1998:244). Likewise, Adler and Kwon and (2002:34) stress the importance of ‘One’s contacts’. More specifically, it refers to the features of network *size* and *diversity* (Nahapiet and Ghoshal, 1998; Payne et al, 2011).

The beneficial outcomes associated with social capital depend on connections and *size* of the network (Bourdieu, 1986; Burt, 1992). While large networks require significant time investments (Parker et al, 2016; Semrau and Werner, 2014), business executives and managers ‘with bounteous Rolodex files enjoy faster career advancement’ (Putnam, 2000:20). Entrepreneurs with large supportive networks are able to access abundant resources and more fully exploit opportunities (Besser and Miller, 2011; Liao and Welsch, 2005; Smith

et al, 2017). Also, proactive social interaction and large networks enhance the intellectual resource acquisition of innovative and growth focused entrepreneurs (Anderson et al, 2007; Barbieri, 2003; Yli-Renko et al, 2001). For jobseekers and the unemployed, proactive social interaction reduces job search costs (Freitag and Kirchner, 2011). In a similar way, disadvantaged entrepreneurs residing in multiply deprived areas obtain work and contracts more easily by expanding their networks (Lee et al, 2011; Miles and Tully, 2007).

Network *diversity* represents the structural characteristics of bonding and bridging networks (Woolcock and Narayan, 2000). Bonding is a ‘sociological superglue’, promotes a sense of belonging and enables ‘getting by’ (Putnam, 2000:23). Thus, bonding characterises strong homogeneous ties with family, friends, colleagues and acquaintances (Callois and Aubert, 2007; Malecki, 2012; Patulny and Svendsen, 2007). In the workplace, bonding promotes common goals and identities and access to tacit knowledge (Edelman et al, 2004; Rost, 2011; Tsai and Ghoshal, 1998). In the entrepreneurial process, family, friends and local clubs provide mutual and repeatable support (Bauernschuster et al, 2010; Carter et al, 2003; Cooke and Wills, 1999; Davidsson and Honig, 2003). As regards underrepresented entrepreneurial sub-groups, local bonding ties promote a safety net for ethnic minority and migrant entrepreneurs (Bizri, 2017; Deakins et al, 2007; Lyon et al, 2007), and traditional indigenous entrepreneurs (Dana and Light, 2011; Light and Dana, 2013). Entrepreneurs suffering from the challenges associated with multiple deprivation and social exclusion draw on close bonds to access moralistic and durable informal support (Anderson and Miller, 2003; Lee et al, 2011; Shortall, 2008). Indeed, the most common source of support for entrepreneurs’ residing in multiply deprived areas is close family and friends (Blackburn and Smallbone, 2014; Williams and Huggins, 2013; Williams et al, 2017).

Bridging social capital ensures broader identities, getting ahead and economic development (O’Brien et al, 2005; Putnam, 2000; Tura and Harmaakorpi, 2005). As such,

bridging characterises weak heterogeneous and divergent ties with industry, political, cultural and bureaucratic elites (Callois and Aubert, 2007; Malecki, 2012; Patulny and Svendsen, 2007). Innovative and competitive enterprises tend to make better use of weaker bridging contacts and accept creative tension (Landry et al, 2002; McEvily and Zaheer, 1999; Pirolo and Presutti, 2010). For Stam et al (2014:167), the ‘novelty benefits associated with bridging social capital are more critical for entrepreneurs’. Divergent bridging enables entrepreneurs to access novel resources and promotes early growth (Cooke et al, 2005; Martinez and Aldrich, 2011; Mosey and Wright, 2007; Scholten et al, 2015). In particular, business, legal and financial relationships facilitate the identification of niche opportunities and highly productive entrepreneurship (Audretsch et al, 2011; Hernandez-Carrion et al, 2017; Kwon and Arenius, 2010). Some research demonstrates that entrepreneurs residing in multiply deprived areas develop bridging ties with business support advisors (Jones and Jayawarna, 2010; Welter et al, 2008). In contrast, both Williams and Williams (2011) and Williams and Huggins (2013) show that they lack role models and rarely use public enterprise support agencies, professional advisors or financial institutions.

*2.2.2 Relational social capital.* According to Nahapiet and Ghoshal (1998:244), the relational dimension of social capital reflects ‘behavioral’ attitudes and norms. Also, reliable interaction is dependent on the ‘motivations’ and ‘willingness’ of an individual or group (Adler and Kwon, 2002:25). As such, it represents *trust*, *reciprocity* and *obligations* and *expectations* (Nahapiet and Ghoshal, 1998; Zheng, 2010).

Social *trust* and safeguarding the concerns and wellbeing of other people, and not trust in government or institutions, is the main driver of social interaction (Iyer et al, 2005; Putnam, 2000). Broadly speaking, social trust is sometimes labelled personal trust and depends on individuals showing integrity, honesty, concern, loyalty and benevolence (Adler, 2001; Levin and Cross, 2004; Tsai and Ghoshal, 1998; Wu, 2007). Managers and employees



overcome the stress and friction of everyday barter through multiple trustworthy and honest relations (Castro and Roldan, 2013; Chua, 2002; Fryxell et al, 2004). Entrepreneurial opportunity identification is inherently risky and high-trust social relations reduce uncertainty and information search costs (Dakhli and DeClercq, 2004; Kwon and Arenius, 2010; Kwon et al, 2013). Thus, entrepreneurs adhere to the principles of high integrity and fairness to ensure durable support in turbulent and uncertain times (Cooke et al, 2005; Molina-Morales and Fernandez, 2006; Welter and Smallbone, 2006). In multiply deprived areas, a moral disposition underpins civic action and sustainable enterprising behavior (Crisp, 2013; Schnur, 2005). As such, trustworthy social relations appear to reinforce the psychological security of entrepreneurs residing in multiply deprived areas (Lee et al, 2011; Welter et al, 2008).

*Reciprocity* is a behavior that represents the repeatability of interaction and returning of favours (Adler and Kwon, 2002; Putnam, 2000). As Putnam (2000:20) suggests, reciprocity is a 'favour bank' and often very 'specific: I'll do this for you if you do that for me'. However, Putnam (2000:20) notes that reciprocity can be immediate and direct or: 'long-term and conjectural'. Reciprocity facilitates fair exchange, eases relational maintenance and promotes collegiality (Chiu et al, 2006; Chua, 2002; Landry et al, 2002; Hsu and Hung, 2013). Reciprocating in a timely manner increases the chances of an entrepreneur accessing repeatable and highly valuable knowledge (Bowey and Easton, 2007; Hite, 2005; Jonsson and Lindbergh, 2013; Runyan et al, 2006). Young entrepreneurs are underrepresented in the mainstream economy and reciprocity demonstrates respect and reliability (Turner and Nguyen, 2005). Additionally, entrepreneurs residing in disadvantaged urban areas spearhead neighbourhood renewal and reciprocate favours to maintain ongoing continuous social support (Daly and Silver, 2008; Lee et al, 2011).

*Obligations* and *expectations* refer to a desire and motivation by individuals and groups to sustain responsible behavior (Bourdieu, 1986; Nahapiet and Ghoshal, 1998). That

is, obligations and expectations generally represent important ‘rules of conduct’ (Putnam, 2000:20). Obligations suggest a social-economic commitment or mutually agreed duty (Robert et al, 2008). Expectations are a binding property and reflect anticipation that rightful requests will be fulfilled (Chiu et al, 2006; Nahapiet and Ghoshal, 1998). Entrepreneurs can expect certain commitments and responsibilities to be upheld and obliged in long-term supportive relationships (Gao et al, 2011; Hite, 2005). In particular, Casson and Della Guista (2007) suggest that ‘customary obligations’ and ‘anticipated expectations’ underpin entrepreneurial social capital. Disadvantaged entrepreneurs accept expectations and obligations, because they regulate and anchor consistent social interaction (Upton, 2008). To bolster social capital and resource acquisition, then, enterprises in multiply deprived urban areas need to respect the expectations of others and focus on meeting obligatory commitments that improve interaction (Kerr and Dyson, 2016).

*2.2.3 Cognitive social capital.* The cognitive dimension of social capital represents perceptual tools and communicative actions (Inkpen and Tsang, 2005; Nahapiet and Ghoshal, 1998). Put another way, cognitive social capital illuminates an individuals system of meaning and their adoption of shared *language, codes* and *narratives* (Lee, 2009). It essentially refers to the ‘cognitive strength of the individual’ (Tanas and Sae, 2007:180).

Shared *language* and *codes* promote communicative efficiency and underpin a broad range of interactive situations (Lee, 2009; Zheng, 2010). Shared language is the extent to which business actors ‘exchange information, ask questions and discuss business’, while codes are ‘a frame of reference for observing and interpreting’ (Nahapiet and Ghoshal, 1998:253). The ease of interpersonal communication is important for effective team based formation (Chiu et al, 2006; Chua, 2002; Kirsch et al, 2010), and links to accelerated knowledge transfer and actualized strategy (Camps and Marques, 2014; Hsu and Hung, 2013). Different knowledge codification and perceptual routines reflect a special type of

coded behavior and promote effective team-based cooperation (Davenport and Daellenbach, 2011; Lorenzen, 2007). In the entrepreneurial process, acknowledging the communication needs of others promotes venture legitimacy and credibility (DeCarolus and Saporito, 2006; Jonsson and Lindbergh, 2013; Westerlund and Svahn, 2008). Also, entrepreneurs adopt common communication paths to access knowledge and crystallise their skills and learning (Garcia-Villaverde et al, 2018; Jonsson, 2015). According to Foley and O'Connor (2013), the ease and efficiency of communication seems essential for underrepresented entrepreneurs to build new ties and share information. As regards schematic codes, knowledge codification routines facilitate the fermentation of entrepreneurial opportunity development (Bowey and Easton, 2007), including in disadvantaged circumstances (Lee and Jones, 2008).

Shared *narratives* enrich communicative meaning and comprise 'fairy tales, myths and legends, good stories and metaphors' (Nahapiet and Ghoshal, 1998:254). In particular, storytelling and personal narratives are a crucial form of everyday communication (Lee, 2009). Storytelling in the workplace represents multiple accounts of events, successes, exertions, failures, topics and imaginative ideas (Araujo and Easton, 2012; Widen-Wulff and Ginman, 2004). The use of short narrative vignettes and metaphors reinforce team identity and facilitate knowledge creation (Chiu et al, 2006; Chou et al, 2006; Chua, 2002). Narrative storytelling helps entrepreneurs to develop a personalised rapport with exchange partners (Lounsbury and Glynn, 2001; Navis and Glynn, 2011; Phillips et al, 2013). Thus, storytelling, anecdotes and analogies enable entrepreneurs to acquire the resources and 'money they need to exploit identified opportunities' (Martens et al, 2007:1125). According to O'Connor and Gladstone (2015), socially excluded individuals must cognitively adapt and use various narrative communicative styles to identify and seize opportunities. Based on this, it seems sensible to suggest that entrepreneurs residing in multiply deprived areas must cognitively adapt and efficiently tell personal stories to enrich and ferment supportive relations.

*Summary.* Inequalities suffered by entrepreneurs residing in multiply deprived areas exacerbate the resource challenges associated with small business ownership. The usage of relational and cognitive social capital by entrepreneurs residing in multiply deprived areas to access resources is not well-understood, when compared to their usage of structural social capital. Therefore, we contend that, it is imperative to comprehensively answer the following research question, so they may better tackle multiple disadvantages. What are the effects of structural, relational and cognitive social capital taken together on the resource acquisition of entrepreneurs residing in multiply deprived areas?

### **3. Method**

#### **3.1 Data collection**

A great deal of existing research on entrepreneurship across regional, sub-regional and national localities adopts quantitative survey methods and statistical analysis to establish relationships (Trettin and Welter, 2011). Our study pertaining to the social capital of entrepreneurs residing in multiply deprived areas and effects on resource acquisition questions whether a relationship exists and to what extent. Therefore, we utilise data from a national survey. The respondents had all completed the government funded New Entrepreneurship Programme NES programme which was specifically designed to train aspiring entrepreneurs residing in multiply deprived areas (Jayawarna et al, 2011; Lee et al, 2011; Slack, 2005; Taylor et al, 2004; UKCES, 2011). Importantly, the NES entrepreneurs all resided in the most deprived Lower Super Output Areas LSOAs according to the Index of Multiple Deprivation IMD (DfES, 2003; DCLG, 2008). According to the DCLG (2011:1), '98 per cent of the most deprived LSOAs are in urban areas'. The target population was 497 participants who had successfully completed the NES programme and actualised their business. The survey instrument was a structured questionnaire. As regards data, 184

completed questionnaires were returned by mail. Non-respondents were followed-up via telephone interview, which resulted in the completion of a further 58 questionnaires. After data cleaning, the final total number of usable responses was  $n=211$ . The response rate of 48.7% compares well with other questionnaire based studies (Cooke et al, 2005). The respondents demographic characteristics were as follows: 54% were male and 46% were female; and most entrepreneurs were between the ages of 30 and 40. The average firm size was 2.78. In addition, 62% were operating in the service sector and 38% were operating in manufacturing or other sectors.

Test for differences in the response behaviour between the data collection methods employed in the study did not reveal any significant differences. Non-response bias was tested using wave analysis, as late respondents to mail surveys tend to be similar to non-respondents. The comparison of early and late respondents on the variables – firm size, sector and gender of the entrepreneur – did not reveal any significant differences. In addition, the Harman one factor test, marker variable procedure and multifactor measurement model procedure showed that common method variance is not likely to be a major concern in this study (Podsakoff and Organ, 1986; Podsakoff et al, 2012).

### **3.2 Measures, reliability and validity**

The constructs and respective measurement items (see Appendix 1) were largely adapted from previous empirical studies. New items were developed and based on existing literature when necessary. The final survey instrument was developed based on feedback from a pilot survey conducted with a random selection of the target population. The measurement items, except for network size, were all measured on a five-point Likert type question ranging from 1 (never) to 5 (very often). All constructs were measured with multi-item scales to enhance reliability and validity. We first examined item-to-item correlations

within each construct (Anderson and Gerbing, 1988), and dropped the business competitors item (see Appendix 1), within the bridging ties construct due to low correlation. Prior to establishing scale reliability, the interval measurement items were subjected to principle component factor analyses, which did result in the theoretically expected factor solutions. The Cronbach alpha reliability coefficients (see Appendix 1), assessing internal reliability, were all at or above the recommended cut off of 0.7 (Hair et al, 1998), except for the newly developed *obligations and expectations* measure based on Nahapiet and Ghoshal (1998). Its reliability coefficient of 0.688 falls within Nunally's (1978) acceptable threshold of 0.5 for newer measures.

In addition, we sought to attain convergent and discriminant validity for each of the constructs by conducting confirmatory factor analysis. The measurement model demonstrates an overall adequate model fit for the proposed factor structure ( $\chi^2 = 279.65$  (138),  $\chi^2/\text{d.f} = 2.03$ ; CFI = 0.941; NFI = 0.923; TLI = 0.942; RMSEA = 0.055). We also observed that the estimated factor coefficients of all indicators met the convergence validity criterion of  $t > 2$  or significance at  $p < 0.05$  (Bagozzi and Yi, 1991). All the indicators loaded on their expected latent constructs ( $p < 0.05$  and  $p < 0.01$ ) with relatively low variance, and were positive and significant. Thus, our findings indicate adequate convergence validity (Anderson and Gerbing, 1998; Bagozzi and Yi, 1991). We then proceeded to examine discriminant validity with a variance extracted test (Bagozzi and Yi, 1991; Fornell and Larcker, 1981). The square root of the average variance extracted (AVE) was compared with the correlations between each latent variable/construct. AVEs for all latent constructs were above or around the 0.5 benchmark. The squared correlation for each pair of constructs was less than the AVE for each individual construct and indicated satisfactory discriminant validity (Fornell & Larcker, 1981).

**3.2.1 Independent Variables.** To assess *structural social capital*, we focused on measuring network size and the network diversity of social interaction ties. We measured network *size* by creating an index variable (i.e. a count measure) based on the number of ties utilised from a list of 9 ties (consisting of the bonding and bridging items in Appendix 1). The measurement items for network size were based on Carter et al's (2003) and Davidsson and Honig's (2003) studies. Also, we followed Carter et al's (2003) and Davidsson and Honig's (2003) approach for capturing network *diversity* and the extent of bonding ties and bridging ties (see Appendix 1).

For *relational social capital*, we focused on measuring trust, reciprocity and obligations and expectations (see Appendix 1). The measurement items for *trust* were adapted from items used by Chua (2002), Fryxell et al (2004) and Levin and Cross (2004). The trust items were also similar to those used by Iyer et al (2005) and intended to capture the social and benevolence elements of trust. As regards *reciprocity*, measurement items were adapted from Chua (2002) and Landry et al (2002). The items selected to test reciprocity were also used by Chiu et al (2006) and Runyan et al (2006), and measured the norms of reliability and returning of favours. There is a paucity of empirical research that comprehensively measures mutual *obligations and expectations*. We therefore developed a new measure based on Nahapiet and Ghoshal (1998:255) to gauge the obligation or duty to undertake some social activity in the future, and general expectations for fair exchange.

To assess *cognitive social capital*, we focused on measuring shared language and codes and shared narratives (see Appendix 1). The measurement items for *shared language and codes* were similar to those used by Chiu et al (2006) and Chua (2002), but adapted to capture expressive and assertive language, questions and sensory codes for turn taking during a conversation. The single item for *shared narratives* was used by Chiu et al (2006) and Chua (2002), and measured the extent of telling stories. This is because measurement of Nahapiet

and Ghoshal's (1998:254) conceptual unit – 'fairy tales, myths and legends' – is particularly challenging.

**3.2.2 Dependent Variable.** For the *resource acquisition* variable, we used a single multi-dimensional construct to ascertain the extent of overall resource acquisition. We combined items adapted from Tsai and Ghoshal (1998) and Yli-Renko et al (2001). Since the items comprise both tangible and intangible resources, we employed subjective measures of resource acquisition.

**3.2.3 Control Variables.** We also developed a set of control variables (demographic, firm and industry characteristics), based on previous studies (Davidsson and Honig, 2003; Yli-Renko et al, 2001), to account for extraneous factors that might influence the resource acquisition of entrepreneurs residing in multiply deprived areas (see footnote of Table 1 for their measurement). In addition, we employed regional dummy variables to capture effects of broader regional level deprivation on resource acquisition. The Index of Multiple Deprivation IMD 2007 ranks by region informed the regional dummies and the least multiply deprived region (South East) was used as the reference group in the regression models.<sup>1</sup>

## 4. Analysis and Results

The social capital and resource acquisition relationships were tested by ordinary least square OLS regression models. Resource acquisition was the dependent variable and each construct was represented by its summary score. The major assumptions of multivariate regression analysis were comprehensively checked. Examination of both the residual plots and partial regression plots indicated that the assumption of linearity was met. Univariate normality was checked by performing the modified Kolmogorov-Smirnov test (Hair et al,

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<sup>1</sup>According to the IMD 2007 (DCLG, 2008:78), 1=most deprived and 32,482=least deprived. The range of IMD ranks by region was as follows: North East=12,480; London=12,650; North West=13,446; West Midlands=14,351; Yorkshire and the Humber=14,560; East Midlands=17,280; South West=18,113; East of England=20,008; South East=21,390. In the IMD 2010 (DCLG, 2011), the South East has the largest share of least deprived LSOAs.



1998). All variables exhibited normal distribution, except entrepreneur age. To remedy the departure from normality, this variable was transformed using its logarithm. The assumption of homoscedasticity was confirmed by the Levene test (all results  $> 0.10$ ) and examination of the residual plots showed no pattern of increasing or decreasing residuals. Inspection of the correlation matrix (Table 1), and of the examination of the variance inflation factor VIF values indicated that multicollinearity was not a serious problem. All VIF values, ranging from 1.02 to 1.83, are well below the conventional threshold of 10 (Hair et al, 1998). The post-estimation checks, such as altering the set of control variables and split-sample analysis, confirmed the robustness of the regression results.

We estimated three partial models, one for each social capital dimension plus controls and then the full model with all three sets of variables. Table 1 displays the descriptive statistics and correlation matrix.

**-----Insert Table 1 here-----**

**-----Insert Table 2 here-----**

Table 2 shows the regression analyses related to social capital predicting the resource acquisition of entrepreneurs residing in multiply deprived areas. There are three partial models (model 1 to model 3) and a full model (model 4). The diagnostics indicate that the four models perform well. The three partial models were supported by their highly significant F values ( $p < 0.001$ ). Their  $R^2$  (0.271, 0.433 and 0.302 for the respective structural, relational and cognitive social capital sub-models) and adjusted  $R^2$  (0.243, 0.410 and 0.276, for the respective structural, relational and cognitive sub-models) are reasonable given the cross-sectional nature of the data. Model 4 represents the full model, with all social capital dimensions included. This model offers a stronger multivariate test, allowing for the examination of how structural, relational and cognitive social capital variables simultaneously affect the resource acquisition of entrepreneurs residing in multiply deprived

areas. The F statistic shows that the model is highly significant ( $p < 0.001$ ) and the  $R^2$  of 0.550 and adjusted  $R^2$  of 0.522 are very respectable for cross-sectional data analysis. In terms of model fit, the full model explains additional variance over and beyond the three partial models. Hence, including structural, relational and cognitive social capital in a full model seems to better explain resource acquisition. Furthermore, all three social capital dimensions substantively contribute to the explained variance in the full model, with the sets of structural, relational and cognitive social capital variables explaining 14.4%, 31.0% and 17.7% of the total variance in the full model. In sum, the results demonstrate that structural, relational and cognitive social capital taken together predicts the resource acquisition of entrepreneurs residing in multiply deprived areas.

The following control variables are non-significant across all four models: gender, age, firm size and sector. However, it is very interesting to observe that entrepreneurs residing in multiply deprived areas within the most deprived English regions (North East, North West and London) acquire significantly less resources compared to their counterparts located in the least multiply deprived English region (South East).

The results for *structural social capital* show that *network size* is positively and significantly associated with resource acquisition. Regarding *network diversity*, bonding ties are positively and significantly related to resource acquisition, but bridging ties have no significant effect. This holds for both the partial Model 1 and the full Model 4. Moreover, with both network size and bonding ties seeing their significance level lowered from  $p < 0.01$  in Model 1 to  $p < 0.05$  in the full Model 4. This shows that these structural variables become less significant in explaining the resource acquisition of entrepreneurs residing in multiply deprived areas when considered alongside relational and cognitive social capital.

There is strong and consistent evidence that all three features of *relational social capital* are positively and significantly associated with the acquisition of resources (see

Model 2). Indeed, social *trust*, *reciprocity* and *obligations* and *expectations* are important predictors. Significance levels remain robust when their effects are considered simultaneously with all the social capital variables in the full Model 4. As such, it is clear that complex relational behaviours and motivations influence the resource acquisition of entrepreneurs residing in multiply deprived areas.

The results related to *cognitive social capital* show a mixed picture. There is strong support for a shared *language* and *codes* and resource acquisition relationship in both the partial Model 3 and full Model 4. This finding indicates the importance of entrepreneurs residing in multiply deprived areas developing a meaningful vocabulary and common communication patterns to enrich and ferment exchange. However, the shared *narratives* variable does not seem to have any significant effect (see partial Model 3, full Model 4). This particular result suggests their inability or unwillingness to use storytelling.

## **5. Discussion**

Entrepreneurship in multiply deprived areas is a very specific and particularly challenging spatial context (DeClercq and Honig, 2011; Huggins and Williams, 2009, 2011; Trettin and Welter, 2011; Welter, 2011). The usage of social capital by entrepreneurs residing in multiply deprived areas to acquire valuable resources is under-researched (Williams et al, 2017), with empirical studies primarily focusing on the relevance and importance of structural social capital. Effects of relational and cognitive social capital is treated as an afterthought (Foley and O'Connor, 2013; Kerr and Dyson, 2016). Therefore, we contribute to knowledge and comprehensively examine the usage of structural, relational and cognitive social capital taken together by entrepreneurs residing in multiply deprived areas that translates into accessible resources. As such, social capital usage and resource acquisition that helps them to tackle the challenges they experience.

Related to structural social capital, the results demonstrate that large networks facilitate the resource acquisition of entrepreneurs residing in multiply deprived areas and this converges with existing research. For example, we support Miles and Tully's (2007) findings that demonstrate how disadvantaged entrepreneurs expand their networks. Additionally, the data shows that entrepreneurs residing in multiply deprived areas prefer to build resilient bonding networks to access resources and are unwilling or unable to bridge social distance, which supports current empirical research (Anderson and Miller, 2003; Williams and Williams, 2011; Williams and Huggins, 2013). In this sense, our national level data comprehensively demonstrates that their structural social capital is both an asset and liability (see Adler and Kwon, 2002; Putnam, 2000).

The usage of relational social capital by entrepreneurs residing in multiply deprived areas and effects on resource acquisition is understudied (Kerr and Dyson, 2016). The results demonstrate that social trust helps them to be perceived as reliable and access resources. This supports the few studies that show how trusting relations facilitate civic action and enterprise in disadvantaged urban areas (Crisp, 2013; Lee et al, 2011; Schnur, 2005). There is a paucity of evidence about how and when entrepreneurs residing in multiply deprived areas use reciprocity and obligations and expectations (Kerr and Dyson, 2016). We demonstrate robust findings from survey data and show that reciprocating favours and regulating mutual obligations and expectations facilitate their credibility, and ultimately, access to resources.

There is a paucity of research pertaining to the usage of cognitive social capital by entrepreneurs residing in multiply deprived areas and effects on resource acquisition (Foley and O'Connor, 2013). We present novel evidence from robust survey data and demonstrate that shared language and schematic codes influence their resource acquisition. Based on Nahapiet and Ghoshal (1998), this suggests the importance of entrepreneurs residing in multiply deprived areas demonstrating communicative competence. However, narrative

storytelling is not significantly related to their resource acquisition. In this way, we demonstrate that entrepreneurs residing in multiply deprived areas risk further exclusion, due to their unwillingness or inability to use narrative storytelling. This is because Putnam et al (2003:282-284) suggest that narratives help an individual to consolidate the ‘collective agenda’, bridge social distance and ‘build new connections’.

According to Trettin and Welter (2011:593), entrepreneurship research must better disentangle the influence of ‘socio-spatial contexts across geographical scales’. Both Frankish et al (2014) and Lee and Cowling (2012) suggest that most studies of entrepreneurs residing in multiply deprived areas focus on a small number of neighbourhoods or single region. We further contribute to knowledge by considering data across all English regions and demonstrate that entrepreneurs residing in multiply deprived areas in the most deprived regions are likely to have less resource acquisition.

## **6. Implications**

From a *policy* perspective, our findings provide relevant insights for policymakers in charge of support interventions for entrepreneurs residing in multiply deprived areas. Policymakers should encourage them to reinforce the following structural, relational and cognitive features to enhance resource acquisition: large networks, bonding ties, trust, reciprocity, mutual obligations and expectations, and shared language and codes. Also, policymakers need to enhance the divergent bridging capabilities of entrepreneurs residing in multiply deprived areas and necessitate the conditions for supportive industry-government-university-community networks. And policymakers must train and mentor entrepreneurs residing in multiply deprived areas to utilise narrative storytelling techniques. Regarding *practice* implications, entrepreneurs residing in multiply deprived areas themselves must more effectively build social capital. They should make smart informed bets and hedge on distant

bridging ties affiliated to reliable institutions and network players. Moreover, entrepreneurs residing in multiply deprived areas need to utilise all communication tools, mental models and schemas, including narrative storytelling.

## 7. Limitations and Future Research

This study is based on cross-sectional data and the results are restricted to a snapshot in time. Another limitation is the extent of causation, but we theoretically grounded an argument that social capital positively influences resource acquisition. While the collection of data from a single respondent on multiple items that reflect a subjective concept could lead to overestimation. In addition, we cannot account for all unobserved conditions, situations, contexts and sub-cultures that may influence the social capital of entrepreneurs residing in multiply deprived areas. Based on our results and the aforementioned limitations, we suggest a number of future research questions (see Table 3). These future research questions are ‘multilevel’ (e.g. *antecedents*, *dimensions*, *outcomes*) and, therefore, provide opportunities for the adoption of various methodological approaches (Gedajlovic et al, 2013; Mason and Harvey, 2013). This is because quantitative methods alone cannot fully explain all the usages of social capital-especially, from the perspective of entrepreneurs themselves.

-----Insert Table 3 here-----

Relatively little is known about the *antecedents* that condition or control the social capital and resource acquisition of entrepreneurs residing in multiply deprived areas. For instance, various socio-cultural/demographic characteristics, communication media, country factors, time stages, and cognitive and psychological aspects require investigation. Social capital *dimensions* are multifaceted and it is possible that complex processes determine the social capital usage by entrepreneurs residing in multiply deprived areas. Different network structural characteristics (e.g. structural holes, cohesion) should be examined, and the

interaction of structural, relational and cognitive dimensions could give rise to distinct benefits. Given our results show no bridging and narrative storytelling effects, striving to identify and understand why seems essential. The social capital of entrepreneurs residing in multiply deprived areas influences resource *outcomes*. That said, different levels/volumes of individual resources and resource combinations should be identified as well as linkages to performance gains. Also, any negative aspects should be considered, including diminishing returns and cognitive lock-in.

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## Appendix 1. Survey constructs and items, and cronbach alphas.

<p><b>Bonding ties.</b> To what extent do you informally interact with the following people:</p> <p>family; neighbours; friends; previous work colleagues; current work colleagues.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.691$
<p><b>Bridging ties.</b> To what extent do you informally interact with the following people:</p> <p>professional/business advisors; business suppliers; business customers; business competitors<sup>2</sup>.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.721$
<p><b>Trust.</b> Thinking about your informal interactions within your network, to what extent have you shown the following:</p> <p>loyalty [making an effort to sustain the relationship]; empathy [understanding sensitive things from their point of view].</p> <p>(1=never to 5=very often)</p>	$\alpha=0.671$
<p><b>Reciprocity.</b> Thinking about your informal interactions within your network, to what extent have you shown the following:</p> <p>honoured a promise; returned a favour.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.725$
<p><b>Obligations and expectations.</b> Thinking about your informal interactions within your network, to what extent have you shown the following:</p> <p>felt obliged to make a promise; expected a favour.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.688$
<p><b>Shared language and codes.</b> Thinking about your informal interactions within your network, to what extent do you do the following:</p> <p>make well-wishing statements; make greeting statements; ask questions; make frank and open questions; make sure other people take their turn in the conversation.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.811$
<p><b>Shared narratives.</b> Thinking about your informal interactions within your network, to what extent do you do the following:</p> <p>tell stories.</p> <p>(1=never to 5=very often)</p>	
<p><b>Resource acquisition.</b> To what extent have you benefited from any of the following when interacting within your network:</p> <p>moral support; business strategy advice; business referrals; industry information; financial support.</p> <p>(1=never to 5=very often)</p>	$\alpha=0.796$

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<sup>2</sup> Dropped due to low item correlation

**Table 1 Descriptive Statistics and Correlations**

Variables	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12
1. Resource acquisition	3.42	0.67												
<i>Structural Social Capital</i>														
2. Network size	7.92	1.77	.312**											
3. Bonding	3.71	0.78	.341**	.465**										
4. Bridging	2.14	0.77	.167*	.431**	.223*									
<i>Relational Social Capital</i>														
5. Trust	4.14	1.12	.512**	.236*	.137	.218*	.193*							
6. Reciprocity	3.65	0.77	.383**	.146	.203*	.242*	.107							
7. Obligations and expectations	3.65	0.85	.343**	.197*	.163*	.074	.241**	.353**						
<i>Cognitive Social Capital</i>														
8. Shared language and codes	4.35	0.74	.523**	.315**	.382**	.214*	.495**	.497**	.253**					
9. Shared narratives	3.17	0.82	.346**	.221*	.112	.073	.368**	.201*	.195*	.391**				
<i>Controls</i>														
10. Entrepreneur age	1.56	.104	-.012	.174	.099	.132	.049	.045	-.055	.118	-.117			
11. Entrepreneur gender	0.45	0.24	.011	.032	.066	-.057	-.062	-.037	-.094	-.001	-.112	.064		
12. Business sector	1.34	.452	-.111	.032	-.032	-.029	-.054	-.071	.043	.027	.061	.022	-.054	
13. Business size	2.78	3.17	.142	.133	.167	.121	.088	.141	.145	.131	.121	-.142	-.122	.151

\*p<0.05; \*\*p<0.01 ; n=211

Entrepreneur age: log years

Entrepreneur gender (1-male; 0-female); Business sector (1-service; 2-manufacturing and others); business size – number of staff

**Table 2 Regression Models**

	Model 1: Structural Social capital		Model 2: Relational social capital		Model 3: Cognitive social capital		Model 4: Full model	
	$\beta$	t stat (sig.)	$\beta$	t stat (sig.)	$\beta$	t stat (sig.)	$\beta$	t stat (sig.)
Constant		-5.51***		-11.17***		-8.79***		-12.08***
<b>Controls</b>								
Entrepreneur age (log)	-0.062	-1.051	-0.030	-0.408	-0.054	-0.891	-0.069	-1.123
Entrepreneur gender	0.020	0.327	0.042	0.591	0.010	0.068	0.025	0.430
Business sector	-0.069	-0.871	-0.065	-1.121	-0.092	-1.454	-0.079	-1.133
Business size	0.054	0.714	0.054	0.377	0.072	1.023	-0.043	-0.678
Region deprivation IMD								
East Anglia	0.088	0.917	0.077	0.825	0.082	0.877	0.079	0.797
East Midlands	0.032	0.213	-0.029	-0.114	0.040	0.365	0.038	0.275
London	-0.111	-1.119	-0.119	-1.189*	-0.124	-1.211*	-0.128	-1.231*
North West	-0.122	-1.312*	-0.133	-1.423*	-0.133	-1.411*	-0.135	-1.399*
North East	-0.137	-1.443*	-0.128	-1.399*	-0.142	-1.510*	0.146	-1.554*
South West	-0.020	-0.114	-0.065	-0.415	-0.071	-0.530	-0.045	-0.323
West midlands	-0.076	-0.653	-0.045	-0.332	-0.081	-0.732	-0.086	-0.413
Yorkshire & the Humber	-0.035	-0.236	-0.034	-0.321	-0.047	-0.444	-0.032	-0.221
<b>Structural Social Capital</b>								
Network diversity:								
Bonding	.315	2.991**					.161	2.43*
Bridging	.051	.771					.025	.260
Network Size	.226	2.716**					.147	2.321*
<b>Relational Social Capital</b>								
Trust			.410	6.138***			.332	4.525***
Reciprocity			.210	2.944**			.176	2.83**
Obligations and expectations			.237	3.428**			.173	2.781**
<b>Cognitive Social Capital</b>								
Shared language and codes					.461	6.621***	.242	3.96***
Shared narratives					.074	1.081	.032	0.224
R <sup>2</sup>		0.271		0.433		0.302		0.550
Adjusted R <sup>2</sup>		0.243		0.410		0.276		0.522
F stat (sig.)		18.813***		35.23***		57.36***		32.18***

N= 211

\*p<0.05; \*\* p<0.01; \*\*\*p<0.001

$\beta$  – standardised regression coefficient

South East is the reference category (least deprived region in England according to the IMD)

**Table 3 Future Research Questions**

Antecedents	Dimensions	Outcomes
Do the <i>ethnicity, religion</i> and <i>class</i> of individual entrepreneurs residing in multiply deprived areas influence the relationship between social capital and resource acquisition?	Do <i>structural holes</i> and <i>brokerage</i> influence the resource acquisition of entrepreneurs residing in multiply deprived areas?	What is the relationship between social capital and <i>levels</i> of <i>individual resources</i> in the context of entrepreneurs residing in multiply deprived areas?
To what extent does communication media (e.g. face-to-face, electronic) influence the relationship between social capital and resource acquisition in the context of entrepreneurs residing in multiply deprived areas?	Do <i>closure</i> and <i>cohesion</i> influence the resource acquisition of entrepreneurs residing in multiply deprived areas?	What is the relationship between social capital and <i>value</i> of distinct <i>resource configurations-orchestration</i> in the context of entrepreneurs residing in multiply deprived areas?
How do <i>time frames</i> influence the relationship between social capital and resource acquisition in the context of entrepreneurs residing in multiply deprived areas (e.g. early, growth, maturity)?	To what extent do structural, relational and cognitive social capital <i>interact</i> , and how does this influence resource acquisition in the context of entrepreneurs residing in multiply deprived areas?	Does the social capital and resource acquisition of entrepreneurs residing in multiply deprived areas matter for firm <i>survival, profitability, innovation</i> and <i>internationalization</i> ?
How do <i>country factors</i> influence the relationship between social capital and resource acquisition in the context of entrepreneurs residing in multiply deprived areas?	Under what circumstances do entrepreneurs residing in multiply deprived areas adopt <i>bridging</i> and <i>storytelling</i> to acquire resources?	Does the social capital and resource acquisition of entrepreneurs residing in multiply deprived areas have any <i>downsides</i> (e.g. lock-in, decision making)?
How do <i>self-monitoring, self-esteem</i> and <i>self-efficacy</i> influence the relationship between social capital and resource acquisition in the context of entrepreneurs residing in multiply deprived areas?		