Network social capital and labour market outcomes Evidence from Ireland

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Abstract

Using data from the International Social Survey Programme 2008 this paper tests empirically the effects of network social capital on Irish employment outcomes, while controlling for possible endogeneity. We allow the effects of social networks to vary for different groups and across different localities. We also test the hypothesis that network social capital works as a complement to human capital in the labour market, rather than as a substitute.

We find that social participation and employment are not endogenous and that 'weak ties' matter for employment outcomes, whereas 'strong ties' are less important. The effects, however, vary across age and location. We also find that social and human capital may be substitutes rather than complements when it comes to the labour market. These findings are discussed with relevance and examples for policy.

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1. Introduction

This paper analyses the extent to which a person's social network impacts on their chances of getting employment in an Irish context. First, we outline for the reader the ways in which social participation may lead to employment outcomes. We then test empirically whether people with higher levels of social participation are more likely to be in employment while controlling for possible endogeneity.

The approach adopted by this paper is empirical in nature. Using data from the International Social Survey Programme 2008 for Ireland this paper estimates a number of models controlling for the possible endogeneity of social participation. We allow the effects of social networks to differ across different groups and localities. We also test the hypothesis that network social capital works as a complement to human capital in the labour market, rather than a substitute (Brüderl & Preisendörfer, 1998; Piazza – Georgi, 2002; Rooks et al, 2009). In our final section, we discuss the relevance of our findings to Ireland's unemployment problem while acknowledging the limitations of study.

Our paper is based on a commonly held premise that people can 'get ahead' in the labour market not only through education but also through knowing the right people. When it comes to social capital Woolcock & Narayan (2001) note that the commonly heard aphorism that "it's not what you know, it's who you know" sums up the most basic understanding people have of the concept. From an economic perspective this suggests that the type, frequency and

quality of a person's social contacts can convey some economic advantage to the individual. Individuals with access to 'better' social networks may be in an improved position to leverage social contacts and to gain access to opportunities and information which would otherwise be unattainable. There is growing evidence that the type of social capital embodied by social networks can result in improved labour market outcomes (Granovetter, 1973; Mouw, 2003, Aguilera, 2002). Indeed, in a tight labour market the advantages gained through social networks may be an important determining factor in individual's chances of finding employment.

This paper contributes to the existing literature on employment outcomes in Ireland in two major ways. Firstly, despite recent years resulting in a growing number of studies on Ireland's labour market (McGuiness et al, 2012; O'Connell et al, 2012) no previous study has explicitly considered the effect of social networks on Irish labour market outcomes. This is a considerable gap in the literature given that international studies have suggested that people are more likely to receive their information about jobs from relatives (17.5%), friends (12.8%) and acquaintances (14.7%) than either public (6.8%) or private (2%) employment agencies (ISSP, 2001).

Table 1: Sources of information about jobs

Country	Great Britain	Northern Ireland	Total
From parents,brother,sister	6.3	5.9	6.1
From other relatives	4.5	4	4.2
From a close friend	11.9	10	10.8
From an acquaintance	8.4	9	8.8
Public employment agency	8	12.8	10.8
Private employment agency	6.7	3.5	4.8
School or university office	3.4	3.1	3.2
Advertisement or a sign	26	28.9	27.7
Contact by employer	6.7	5.4	5.9
Call or ask for work	9.1	6.4	7.5
Other	9.1	10.9	10.2

Source: (ISSP, 2001)

Indeed there is some evidence of the importance of informal networks in Irish job search with the 2012 European Quality of Life Survey (Eurofound, 2013) showing that 45.5% of Irish people, when asked the questions 'from whom would you get support if you needed help when looking for a job?', indicated that they would ask people within their social network first, compared to 38.4% indicating they would go to service providers or formal institutions. This appears to be even more important for young people with 57% of those under 24 and 54% of 25-34 year olds saying they would first turn to these social networks before a service provider or formal institution.

Secondly, this paper progresses to analyse not only whether social networks affect employment outcomes but whether these networks affect different groups differently. This progresses the analysis beyond looking simply at the question; do social networks matter and on to the question of for whom do they matter and why? From this we present lessons for jobseekers and labour market policy.

The remainder of this paper is structured as follows. Section 2 presents an overview of the Irish labour market and its trends in recent years. Section 3 presents an overview of the

literature in this area and the links between social networks and people's employment outcomes. Section 4 presents the methodology utilised by this paper. Section 5 discusses the data used by this paper and looks at the presence of social networks across various groups. Section 6 presents the results of the econometric analysis. Finally, in Section 7 we present the conclusions of our findings and the lessons which may be learned for policymakers.

2. Context

The Irish labour market

Over the half decade to Q4 2012 the rate of unemployment in Ireland rose from lows in the region of 4.5% to almost 14.2% of the total labour force. Indeed these unemployment figures to some extent masks the true scale of losses to the economy as they do not include people who have left the labour force through discouragement or emigration. As such a more useful figure to illustrate the damage to the Irish labour market a more useful figure may be the fall in employment. As of Q4 2012 there were 240,400 less people working in the Irish economy than in Q4 2008, a seasonally adjusted fall of 11.6% of the levels of employment four years previously and of 14.6% from peak employment levels in Q1 2008. Falling employment has also been added to by rising underemployment with the number of people in unemployment or underemployment now making up around 20.5% of the labour force.

Figure 1: Irish labour force 2008 - 2012
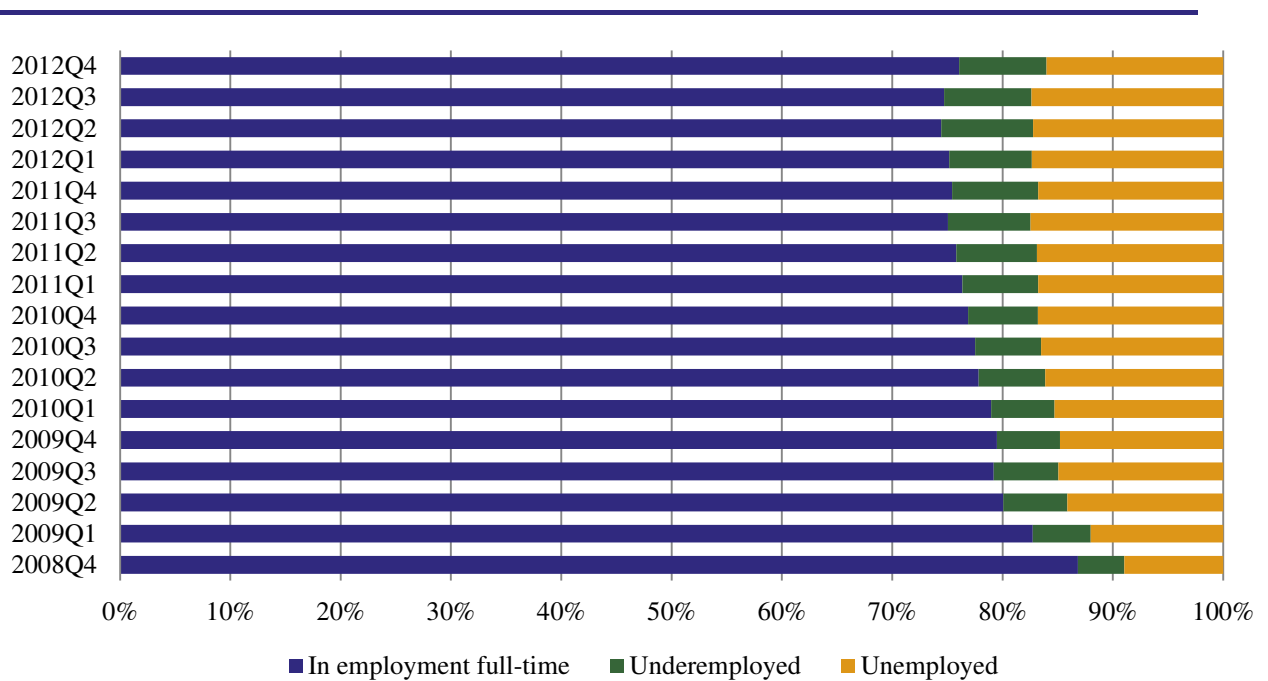
Source (CSO, 2013)

One of the more damaging trends in Irish unemployment has been the rise in long term unemployment (unemployed for one year or more) as a percentage of those people unemployed. It has risen from about 23% of overall employment in Q4 2008 to 60% four years later. Given that long-term unemployment can have severe repercussions for individuals' health, psychological wellbeing and future labour market outcomes (Bell & Blanchflower, 2010; Jackman & Layard, 1991) this is an extremely worrying trend both from a social and economic perspective.

Figure 2: Unemployment and long-term unemployment 2008 – 2012
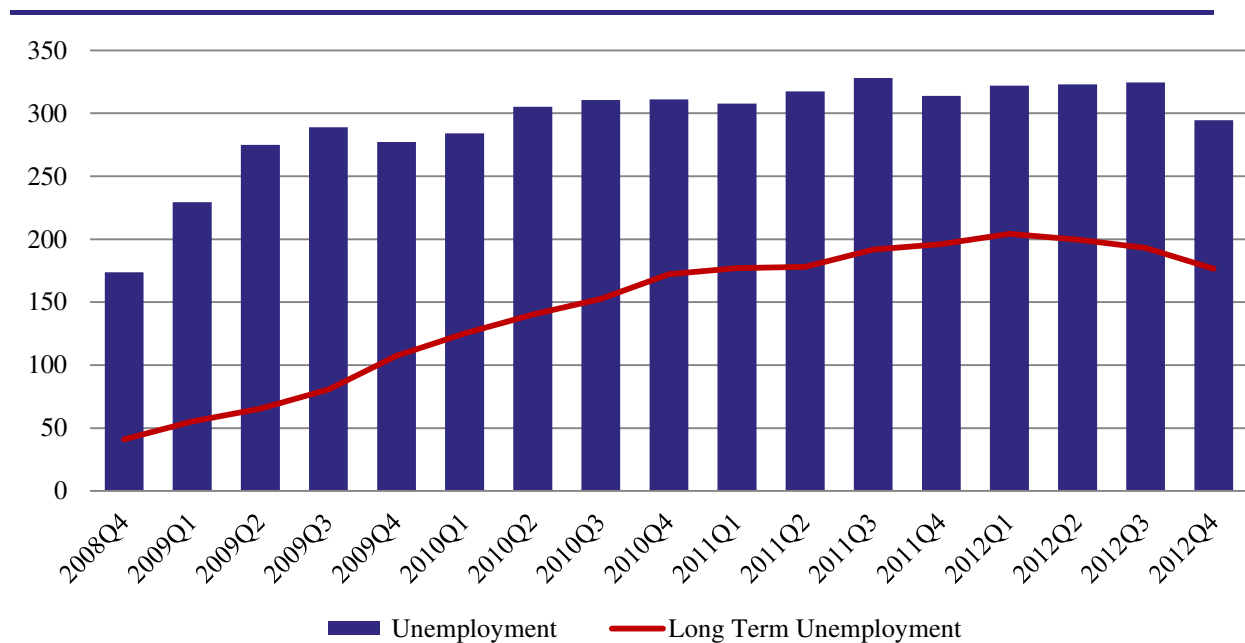
Source: (CSO, 2012)

Unemployment in those aged under 25 has also been on the rise in the past five years. Although this group has traditionally had higher reported rates of unemployment for a variety of reasons, the level of unemployment among those who are active in the labour market has risen dramatically in recent years. Youth unemployment levels were 9.8% in January 2008 and had risen by over 20 percentage points to 30.4% by January 2013. Figure 3 displays the rising youth unemployment rate in Ireland between 2008 and 2013. It is clear that the labour market situation of young people has deteriorated significantly since 2008 with the unemployment rate for young males now standing at over 35%.

Figure 3: Unemployment among those aged 25 and under
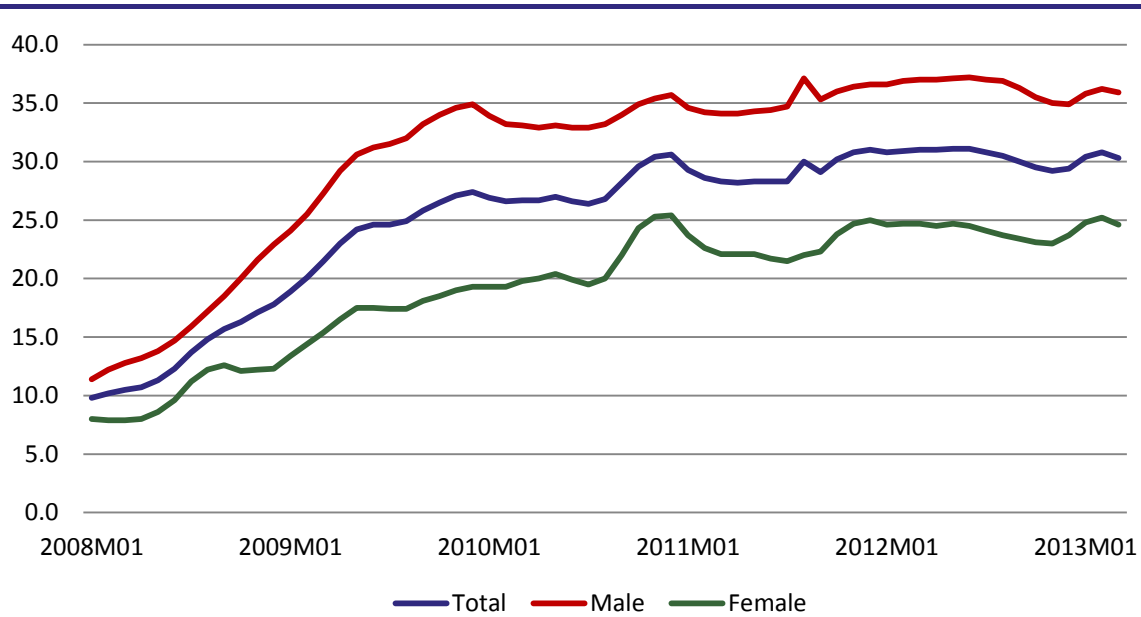
Source: (Eurostat, 2013)

Finally, there is a large degree of geographic variation in unemployment rates across the country. Figures 4 and 5 present maps of unemployment by electoral area for the country using data from the 2011 census. Darker areas represent relatively high unemployment. Figures for Dublin and Cork city are presented in Appendix 3[1].

Legend 1: Unemployment Maps of Ireland
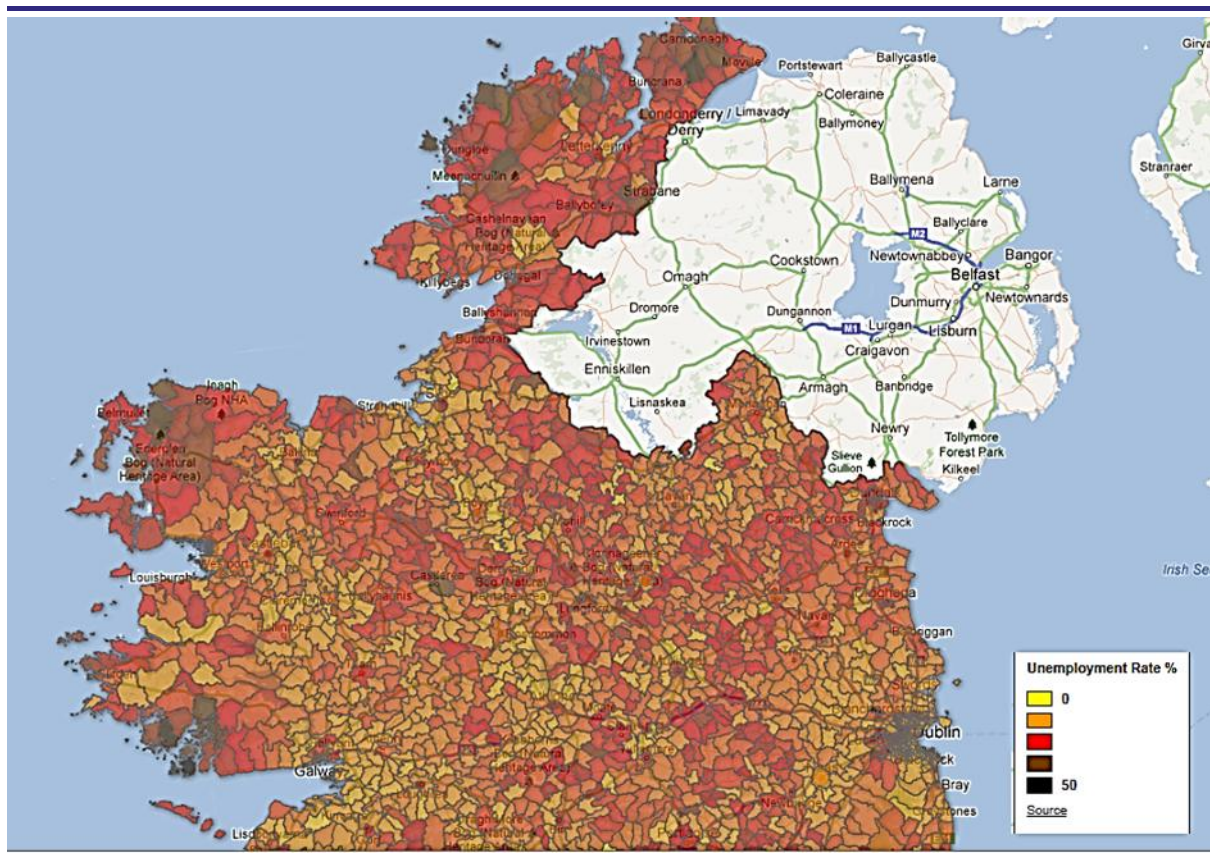
Unemployment Rate	Colour
0% -10%	
10% -20%	
20% - 30%	
30% - 40%	
40% - 50%	

Source: (Census, 2011)

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[1] Maps for other cities, regions or areas are available from the author on request.

Figure 4: Unemployment by local authority area Ireland North

Source: Authors own calculations using Google Fusion Tables and CSO SAP data from Census, 2011

From figures 4 and 5 we can see the variation in unemployment rates across local electoral areas. On a national level it is clear that although unemployment in general is high (much of the country is over 10%) unemployment black spots exist particularly in parts of West Galway, Mayo and Donegal which are traditionally more isolated communities. There are also unemployment black spots in urban communities, with the areas surrounding the Waterford and Limerick urban areas a stand out at a national level. Within cities however there is also a large variation. Unemployment is much higher for example on in the North and West of Dublin city than it is in the south of the city. The same pattern can be observed in Cork, with the city north of the River Lee suffering from much higher rates of unemployment than other areas of the city (Appendix 3:Figure A3.1 & A3.2).
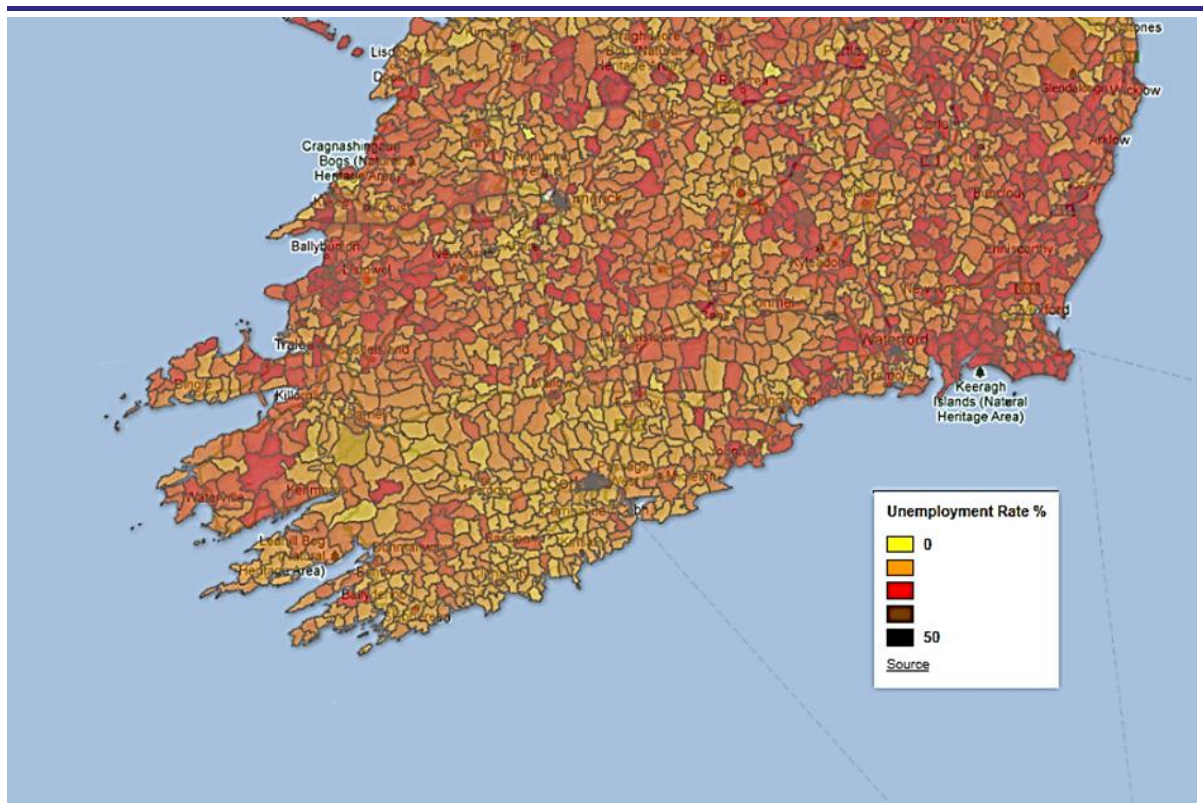
Figure 5: Unemployment by local authority area Ireland South

Source: Authors own calculations using Google Fusion Tables and CSO SAP data from Census, 2011

The fiscal cost of unemployment

Rising unemployment has seen increased strains being put on the Exchequer as an increasing number of households have seen one or more members lose employment and become eligible for social transfers. This trend can best be seen in the rising demand and interest in the services of the DSP online. Figure 4 presents the rise in numbers on the Live Register and the rise in Irish Google searches for 'social welfare' over the worst periods of job losses between 2008 and 2010[2].

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[2] The rise in Google searches for social welfare also shows a similar trend to that for popular employment website 'jobs.ie', this may also say something about the changing nature of job search during the recession.

Figure 6: Live register and Google searches for 'social welfare'
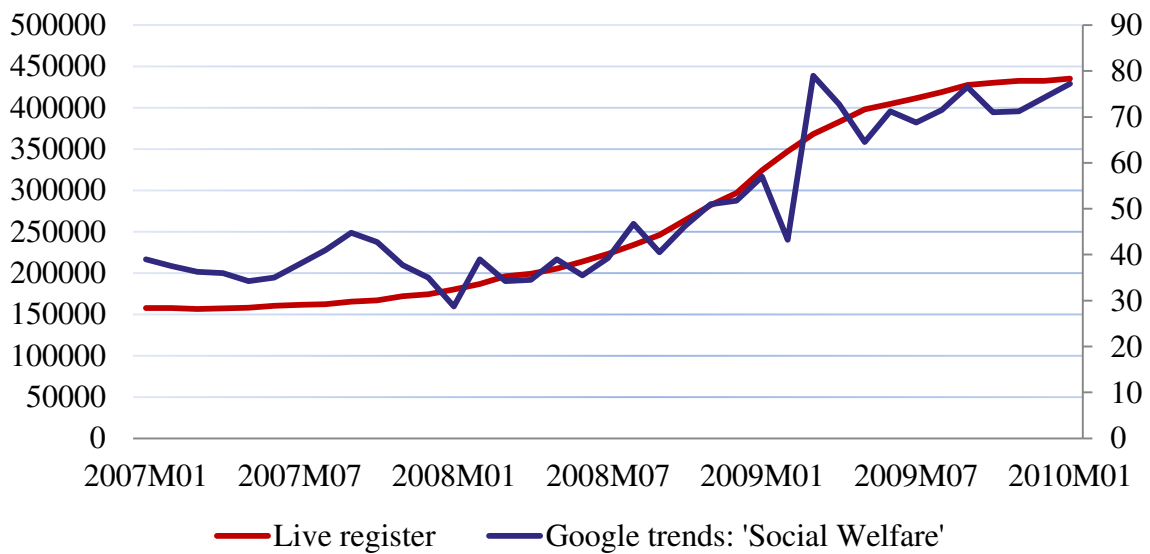
Source: (CSO, 2013; Google Trends, 2013)

It is clear from figure 6 that rising unemployment has seen rising claims on the Department of Social Protection's resources. As it stands, almost 20% of the total expenditure by the Department of Social Protection (€3.7 billion annually) is now being spent on jobseekers payments, not including other ancillary supports such as rent allowance. As of 2011 the total number of people claiming jobseekers payments was nearly 350,000 with over 200,000 adult and child dependents.

Table 2: Main categories of Jobseekers expenditure in the years 2002 - 2011

	€m		Recipients		Adult and Child Dependents	
	Jobseekers allowance	Jobseekers benefit	Jobseekers allowance	Jobseekers benefit	Jobseekers allowance	Jobseekers benefit
2002	512	423	74,470	63,300	56,940	64,920
2007	875	545	78,640	54,970	53,990	17,720
2009	2,003	1,726	156,580	155,120	105,530	54,540
2011	2,645	1,027	238,650	110,480	157,110	46,760

Source: (DSP, 2011)

As a result expenditure on non-pay social protection items has gone from 14.19% of total government expenditure in 2005 to 23% in 2012, doubling in absolute terms from €6 billion per annum to over €12 billion.

Figure 7: Non Pay social protection expenditure
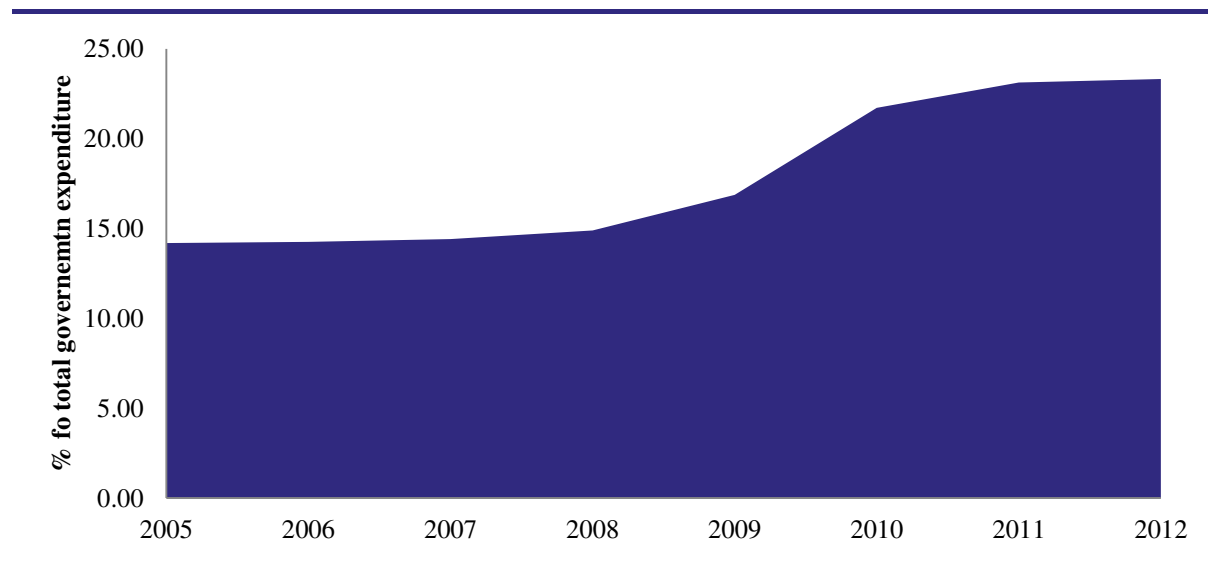
Source: (Department of expenditure and reform, 2013)

Despite substantial costs of unemployment to the exchequer employment supports for working age adults have remained only a fraction of income supports. In 2012 there was 17c spent on employment supports for €1 of income supports. This is driven in part by rising unemployment claims with lack of matched resources for employment supports but also by institutional factors. The government's main policy paper on labour market activation policy 'Pathways to Work' recognised that the Irish state had traditionally adopted a "passive approach" to labour market supports, a consequence of which was "the development of a significant core of long-term unemployed, even in the midst of an economic boom, and the deskilling of many people in the labour market" (Government of Ireland, 2012). This was particularly true in the 1980's recession where economic growth was followed by jobs growth slowly and to a limited extent.

Table 3: Expenditure on job activation measures in selected years

	2007	2010	2011	2012
Programme	€m	€m	€m	€m
Total employment supports	590.4	728.2	788.9	964.4
Total working age income supports	3,491.5	6,669.2	6,183.4	5,700
Ratio of employment supports to income supports	0.17	0.11	0.127	0.17

Source: (DSP, 2011)

Although the problems and solutions to Ireland's high unemployment may be mostly demand driven, the long term effects of this unemployment will be a rising number of people who have experienced long-term unemployment, disconnect from the labour market and de-skilling. For example, the collapse in construction employment means many are now facing a labour market for which their formal training is no longer suited, creating a large structural employment problem. In this context it would be an error to assume our understanding of the supply side and its importance in the Irish labour market is complete. This paper seeks to add to this understanding by advancing understanding of how people find jobs in Ireland, how important social networks are to this process and how this may translate to for jobseekers, business and policymakers.

3. 'It's not what you know, it's who you know' - Social capital and the labour market

'It's who you know' - social networks and labour market outcomes

Social capital is a multifaceted concept which has been the subject of much study, following from the seminal contributions of Bordieu (1986), Coleman (1988), Putnam (1995) and Lin (1999). Numerous competing theories of social capital have been set forward (Woolcock & Narayan, 2000), of which there is no settled consensus. This paper uses measures of individual investment in social networks and relations to assess the impact of social capital on

labour market outcomes. This use of social networks and relations as a measure of social capital (Portes, 1998; Li, 1999; Burt, 1992; Bourdieu, 1986) is closer to the definition of network social capital as: "resources embedded in a social structure which are accessed and/or mobilised in purposive actions" (Lin, 1999). The advantage of this approach over others is that it focuses on the source of social capital rather than its effects and allows us to regard the potential effects of social capital as both positive and negative (Woolcock and Narayan, 2000)

The study of social capital in the labour market has stressed the advantages which individuals can derive from their networks (Montgomery, 1991, Beugelsdijk & Smulders, 2003). Indeed, there is strong evidence that the type of social capital embodied by social networks can result in improved labour market outcomes (Granovetter, 1973; Montgomery, 1991; Mouw, 2003, Aguilera, 2002). Utilising this 'network view' (Woolcock &Narayan, 2000) of social capital we present the hypothesis that the type and extent of an individual's social network will affect their labour market outcomes. We assert that this effect is likely to vary depending on a person's social context. We also present the hypothesis that social networks work as a complement to human capital in the labour market, rather than a substitute (Brüderl & Preisendörfer, 1998; Piazza – Georgi, 2002; Rooks et al, 2009). This section briefly sets out the theoretical justification for these hypotheses with reference to previous literature.

Studies of network social capital in job search models have identified a number of key mechanisms through which social networks can lead to improved labour market outcomes. These are closely related to Lin's (1999, p.31) identified elements: 'information, influence and social credentials'. Firstly, individuals are likely to gain information about employment from people in their social networks. Indeed, employers are also likely to gain information on

available employees through social ties (Lin, 1999). In imperfect markets information gained through social ties may reduce search costs for recruiting organisations and for individuals searching for employment. When it comes to social ties, however, not all ties are necessarily equal.

One of the key theoretical advances in the importance of social networks to the labour market developed from Grannovetter's (1973) 'strength of weak ties' paper. Granovetter showed that individuals were more likely to gain novel information from weak ties or acquaintances than their strong ties, for example their friends or family (Granovetter, 1973). People's 'strong ties' tend to congregate in the same social circles as them. The new information an individual can gain from those ties, will therefore be limited. Weak ties on the other hand will have access to information which an individual may not have through his/her own close social network thus presenting new information about employment opportunities to the individual[3].

People may also receive labour market advantages as firms ask current employees to refer individuals for a position or to give advice on the competence and reputation of job applicant who are known to them. Employers may also look for referrals from people within an applicant's social network (Montgomery, 1991). In this way employers may use social networks to screen job applicants. The ability to gain new information from social networks and the reputational advantages which may be gained from social contacts can help overcome search costs and information asymmetries for the employers and employees leading to improved labour market outcomes for those with broad social networks and/or social networks of good quality.

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[3] This idea is analogous to Burt's (2004) hypothesis that people can gain advantage from 'structural holes' in their social network

All ties are not equal

The data used in this study provides an indicator for individuals' investment in these social networks but not necessarily the quality of those networks as used in popular position generator approaches (Lin et al, 2001). This disadvantage may be overcome to an extent by observing the variation in social capital and its effects across social groups with the assumption that access to and quality of social networks is heterogeneous across social groups. In other words, we test the hypothesis that positive labour market externalities arising out of individuals' investment in social ties may vary depending on the individual's social or even geographical location. For example, Lindsay et al (2003) show that young rural dwellers' disadvantage in terms of social networks allied to the prevelance of informal job search methods in rural areas, results in barriers to employment for these job seekers. On the other hand there may also be benefits to social capital networks for marginalised groups such as single parents. Where access to affordable childcare is a barrier to work, strong familial bonds may help overcome this and encourage return to work.

Of course people's social networks may also have a more malignant effect. Woolcock and Narayan (2000) illustrate this best with the example of a parent wondering about their children falling in with the 'wrong crowd'. Although the 'wrong crowd' may not be seen as desirable, they remain social networks in the same manner as any other group. Calvo-Armengol and Zenou (2004) have presented a formal model showing that an individual's propensity to participate in criminal activity may be affected by criminal activity in their social network or area. In addition the literature has identified links between strong local bonds and low levels of labour mobility (David et al, 2010). People with strong familial or friendship supports and ties in an area may be less willing to move to find work particularly

to areas where they have little or no ties. Thus not all social ties will have positive externalities for the individual. This leads us to our first hypothesis.

H1 - An individual's social network will positively affect their labour market outcomes. The extent to which this occurs will, however, vary depending on an individual's social location.

'It's not what you know' – Social capital and human capital

Woolcock and Narayan's (2000) observation that most people understand social capital in terms of the phrase 'it's not what you know, it's who you know' reveals much about people's understanding of not just social capital itself but also of its relationship with human capital. That understanding being, that these two types of capital are, at least, weak substitutes for one another. Indeed there may be some logic in this. Piazza – Georgi (2002) observes that these two forms of capital seemed to act, in some circumstances at least, as substitutes. The investment of people's time is a key ingredient in the development of both social and human capital. As such, when time is a scarce resource people may choose to invest it in human capital to the detriment of social capital. This is particularly true if people perceive human capital other as having greater potential monetary benefits, or indeed put greater value in these benefits.

This view, however, is not universally held, with some researchers seeing social and human capital as complements (Brüderl & Preisendörfer, 1998; Rooks et al, 2009). Denny (2003) notes that volunteering (a common measure or social capital) typically takes place out of work time so there may be little or no trade-off between higher human capital and the development of social capital. That is the higher opportunity cost of time (due to better

wages) associated with greater human capital may not affect participation in voluntary activities as they arise outside of normal working hours. Denny (2003) adds that if the voluntary activity permits informal job-search then a positive effect could arise. Thus social networks may not be a complement rather than a substitute to human capital.

H2 - Social networks work as a complement to human capital in the labour market, rather than a substitute.

4. Methodology

Baseline model

In order to assess the effect of individual's social networks on their employment prospect we employed a two part strategy. In our first step we, we run a probit analysis (1) to assess the association between social participation and the probability of being in employment either full or part time. When estimating this model we control for levels of education, socioeconomic characteristics, familial background and other personal characteristics such as age and gender.

A simple representation of our baseline model is presented in eqn. (1):

$$E_i = \propto_0 + \beta WT_i + \vartheta ST_i + \delta HC_i + \sigma Z_i + \varepsilon_i \quad \text{(Equation 1)}$$

Where E is a binary indicator of individual *i's* labour market outcome reflecting whether they are employed or not, WTi is a measure of individual *i's* participation in social activities which may give rise to weak ties, ST_i represents the frequency with which an individual fraternises with strong ties such as family and friends, HCi is a measure of individual i's human capital attainment, Zi is a vector of control variables and ε is the error term.

The probability a person will be in employment is written as:

$$P_i = PROB\ (EOi = 1) = \emptyset(\propto_0 + \ \beta WT_i + \vartheta ST_i + \ \delta HC_i + \ \sigma Z_i + \varepsilon_{i)}\ (2)$$

Where $\emptyset$ (.) is the normal distribution function. The vector of parameters WT, ST, H and Z are estimated by the maximum likelihood methods under the assumption that the residual term ε is uncorrelated with the exogenous variables.

Endogeneity of social participation

One of the implicit assumptions we are confronted with when estimating (1) is that WT participation in social activities is exogenously determined. One of the issues which may be raised in our analysis is the possibility that participation in social networks is simultaneously determined with employment outcomes or some unobserved factors impacting on both. Where this is the case, estimating the models above would not allow us to assess the causal impact of social networks on employment outcomes and may result in inconsistent parameter estimates.

In other words, it would be impossible to tell whether social networks affect a person's employment outcomes or if our results represent higher participation in social activities from people in employment as they have greater resources to do so. To account for this possible endogeneity we estimate a bivariate probit regression of equations 3 and 4:

$$E_i = \propto_1 + \ \beta WT_i + \ \sigma Z_i + \varepsilon_i\ (\text{Equation 3})$$

$$WT_i = \propto_2 + \ \mu Ins_i + \ \sigma Z_i + \tau_i\ (\text{Equation 4})$$

As previously, the employment status (*EO*) of individual *i* depends on her social participation and a vector of other independent variables. The weak ties of individual *i* is determined by the same covariates but also by an instrumental variable Ins. We use levels of generalised trust in other as our instrument in line with Narayan and Pritchett (2000). Our assumption is that trust has a positive effect on an individual's participation in social groups, but only effects employment outcomes through this social capital. To test the instrument validity, we perform a bivariate estimation of (3) and (4) with trust in both sides and a t-test to assess if a generalised trust is not associated with employment outcomes but strongly associated with social participation.

The simultaneous estimation of (3) and (4) is also more efficient than the alternative approaches (Greene, 2008) which, would involve substituting predicted values from (2) for WT in (1), as the bivariate approach takes account of the potential correlation between the disturbances of the two regressions.

Additionally, the likelihood ratio (LR) test reported in the bivariate approach can be used to test the hypothesis that WT is endogenous. Knapp and Seaks (1998) have shown that a likelihood ratio (LR) test of the null hypothesis that the correlation coefficient of the error terms ε and τ is zero is equivalent to a Hausman endogeneity test. An insignificant sign on this test would signify endogeneity is not present and that it is appropriate to report the results of the probit estimation of (1) (Rowell, & Connelly, 2010).

In an additional step to test the endogeneity hypothesis we perform an augmented regression test by including the residuals of our endogenous covariate, as a function of all exogenous variables, in a regression of the original model. A significant sign on the residual would

signify the presence of endogeneity. Again if our coefficients signifying endogeneity are not statistically significant it is appropriate to report our probit estimation of (1) only, as using instrumental variable estimates when they are not necessary can create more problems than they solve (Bound, Jaeger & Baker 1995).

Finally, this paper develops upon our analysis thus far by acknowledging that while social networks may impact on individuals employment outcomes it will likely effect different groups differently. To test this we add a number of interaction variables to our model. These models are constructed by multiplying two variables by each other. When one variable is continuous, its centred mean is used to control for multicoliniairty.

5. Data

Measures

The data used in this paper is taken from the 2007 ISSP (International Social Survey Programme) which is available through ZACAT the GESIS online archive provided by the Leibniz Institute for the Social Sciences. The 2007 ISSP focused on leisure time and sports activities and contains information from north of 50,000 individuals across 36 countries internationally. The data for Ireland was collected using face to face interviews between August and the end of October 2008, yielding 2,049 respondents. A unique sample was selected using the Economic and Social Research Institute's (ESRI) random sampling system RANSAM and comprised a purposive selection of 140 district electoral divisions. The sample was representative of the overall population with calibration to population totals by age group, sex, household size, economic status, level of education and region.

Table 4 displays summary statistics of the variables utilised by this paper. Firstly, our dependent variable is binary indicating whether the respondent is employed or not. Flinn and Heckman (1983) suggest that the behaviour of individuals who are inactive because they are disabled, retired or otherwise unable to work differs from other groups of unemployed. For the purpose of our study individuals in the sample who are retired, still in education or who have identified as unable to work due to a disability were excluded from the sample[4]. Control variables used in the study include demographics and education variables, variables indicating the degree or urbanity in which the respondent resides and finally the household composition of the respondent. Some of these measures will be used later in the paper to identify differences in the effectiveness of social interaction across social groups.

Finally, we have two measures of social capital, one indicating weak ties and another strong ties. Our proxy measure of weak ties is a binary indicator of whether the respondent participates in a sports, cultural, religious, community/civic or political group more than once or twice a year. Our hypothesis is, that people who participate more in these groups are more likely to establish useful contacts outside their close social group. Strong ties are measured by whether an individual spends time with friends or relatives once a week or more.

Descriptive statistics

From table 4 we can see our measures of social capital in their un-aggregated form. 56% of our sample partakes in one of the outlined social activities. This participation is higher in sports groups than in any other group, with 36% of the sample participating in the activities of a sporting group. The least common form of social participation is in political groups with only 7.5% of the total sample participating in these groups. When it comes to strong ties 44%

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[4] See Appendix 1 for a full breakdown of measures used in this paper.

of our sample meet with friends once a week or more, compared to only 21% with family. This is not unexpected; however, as individuals may be less likely to live in close geographical proximity to relatives than friends in many cases. Overall 49% of our sample spends time with either family or friends in a given week.

Table 4: Descriptive statistics from the International Social Survey Ireland

Variable	Mean value	Standard Deviation
Employment Status		
Employed	75.95%	-
Unemployed	24.05%	-
Demographic Characteristics		
Gender: Male	41.06%	-
Gender Female	58.94%	-
Age	41.6	12.56
Years of education	13.66	3.98
Location		
Urban, a big city	13.78%	-
Suburb, outskirt of a big city	17.66%	-
Town or small city	23.98%	-
Country village	20.96%	-
Farm or rural property	23.62%	-
Household composition		
More than one adult with children	41.13%	-
Single parent	5%	-
Other	53.87%	-
Weak Ties		
Sports	36.4%	-
Cultural	25.05%	-
Religious	28%	-
Community/Civic	27.06%	-
Political	7.54%	-
At least one of the above	56.07%	-
Strong Ties		
Friends	43.58%	-
Family	21.39%	-
One of the above	49.46%	-

From figure 8 we can see that participation in social groups and organisations is highest among people in large cities where opportunities may be greater to participate due to greater numbers of these groups and ease of transport to them. Interestingly, however, people in rural areas and villages are more likely than those in towns and suburbs to participate in social

groups. This may well represent stronger community ties in more established rural areas compared to suburban areas with less developed ties.

Figure 8: Social participation by location
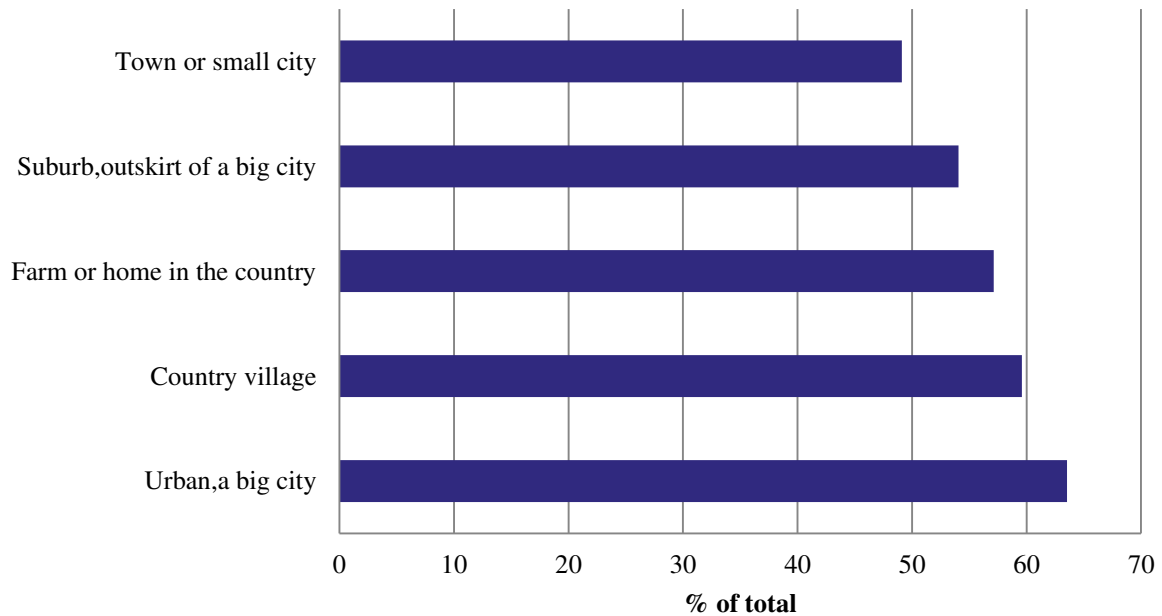
Participation in social groups also varies across demographic groups. Participation in these social groups is 10 percentage points higher among males than females. People with more than 14 years full time education are also much more likely to participate in these groups than those with less than 14 years. This would suggest education may play some part in people gaining access to networks of people and information. Previous papers such as Denny (2003) have suggested there may be some link here.

Interestingly for our hypothesis and tests of endogeneity people who are employed are more likely to participate in these social groups than those without a job. This seems to suggest that being in employment does not exclude the opportunity to participate in social activities. Indeed, this may represent comparative social isolation for those who are unemployed.

Figure 9: Social participation by demographic characteristic
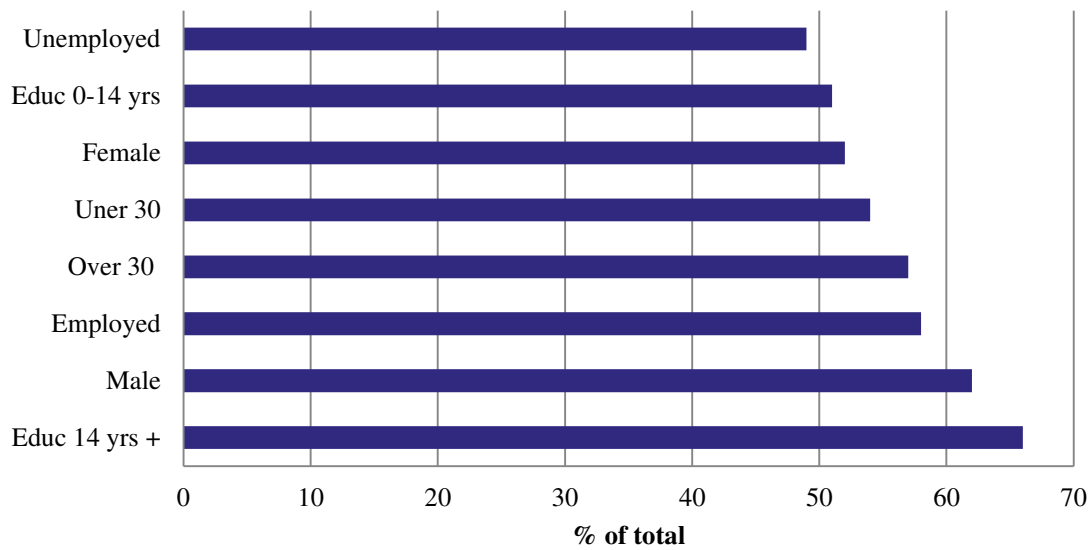
6. Empirical analysis

This section presents results of empirical analysis and follows on with discussion of its implications. Table A2.1 (Appendix 2) presents the test of the quality of our proposed instrument, followed by a test of endogeneity in table A2.2 (Appendix 2). Table 5 presents the results of four models of our full sample estimation. The first a probit estimation of the full sample; the second a probit estimation with an alternative specification of one of our main variable of interest; the third displays a probit regression with an added interaction term testing hypothesis 2 and finally we present a full sample probit estimation with interaction terms testing for differences across geographical and social groups.

Tests of endogeneity

Firstly we tested the quality of our proposed instrument as discussed in section 4. Our results (Appendix 2: Table A2.1) show that the degree to which a person has generalised trust in others is a significant determinant of participation in social groups our proxy for weak ties but has no significant relationship with probability of being employed. Given the theoretical reasons for believing trust may be a valid instrument (Narayan and Pritchett, 2000) and the results of our t-test it is determined that measures of generalised trust are a valid instrument for our purposes. We then used two tests of endogeneity, with the null hypothesis being that social participation was exogenously determined.

Results of our augmented regression test outlined in section 4 (Appendix 2: Table A2.2) shows no significant effect of the residual values which would suggest that endogeneity is not present. Allied to this our test of endogeneity (Knapp and Seaks, 1998), the likelihood ratio (LR) test of the null hypothesis, suggested that we also cannot reject the null hypothesis that our measure of weak ties is exogenous. These results are repeated with an alternative measure of bridging social capital (number of associations) using an instrumental variables method and again we cannot reject the null hypothesis of exogeniety.

Econometric results

In cases where endogeneity is unclear or does not appear to be present such as this, the use of instrumental variable methods would be analogous to the cure killing the patient[5]. As such we report the results of the probit estimation of (1), which will give us a more useful

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[5] The same tests were conducted on our measure of bonding social capital with results again suggesting that endogeneity was not present. Results are not presented here in the interests of brevity but are available from the author on request.

approximation of the effects of our variables of interest. These results are presented in table

7. For ease of interpretation marginal effects are presented.

Table 5: Probit estimation of the full sample

Variable	Model 1	Model 2	Model 3	Model 4
Demographic Characteristics				
Gender : Male	.259***	.259***	.26***	.27***
	(.020)	(.020)	(.02)	(.03)
Age	.016 ***	.016***	.017***	.023***
	(.006)	(.006)	(.006)	(.006)
Age2	-.0002 ***	-.0002 ***	-.0002***	-.0002***
	(.00007)	(.00007)	(.00007)	(.0007)
Years of education	.023 ***	.022***	.023***	.023***
	(.004)	(.004)	(.0052)	(.006)
Years of education2	-.000	-.000	-.000	.000
	(.00002)	(.00002)	(.00006)	(.00002)
Location (3)				
Urban, a big city	-.077 **	-.079 *	-.0677*	-.181***
	(.046)	(.046)	(.046)	(.093)
Town or small city	-.012	-.014	-.011	-.029
	(.037)	(.037)	(.037)	(.065)
Country village	-.088 ***	-.092**	-.089***	-.093
	(.041)	(.041)	(.04)	(.071)
Farm or rural property	-.064 **	-.069 **	-.064*	-.064
	(.039)	(.039)	(.039)	(.06)
Household (3)				
More than one adult with children	-.105 ***	-.106 ***	-.105***	-.106***
	(.027)	(.027)	(.065)	(.02)
Single parent	-.205 ***	-.206 ***	-.205***	-.205***
	(.065)	(.066)	(.065)	(.06)
Network Social Capital				
Weak ties	.042 **	-	.042**	-.073
(Binary indicator)	(.02306)		(.0232)	(.05)
Weak ties	-	.025 ***	-	-
(Number of associations)		(.008)		
Strong ties	-.029	-.031	-.029	.073
	(.023)	(.022)	(.023)	(.05)

Table 5:
Continued

Variable	Model 1	Model 2	Model 3	Model 4
Interaction terms				
Education*weak ties	-	-	-.005 (.024)	.006 (.007)
Education*strong ties	-	-	-	-.008 (.007)
City* weak ties	-	-	-	.133*** (.04)
City*bonding	-	-	-	-.028 (.086)
Town or small city* weak ties	-	-	-	.131*** (.04)
Town or small city* strong ties	-	-	-	-.14 (.09)
Country village* weak ties	-	-	-	.09 (.05)
Country village* strong ties	-	-	-	-.11 (.08)
Farm or rural* weak ties	-	-	-	.078 (.05)
Farm or rural* strong ties	-	-	-	-.107 (.08)
Age* weak ties	-	-	-	.004*** (.001)
Age* strong ties	-	-	-	-.005*** (.001)
Male* weak ties	-	-	-	.035 (.05)
Male* strong ties	-	-	-	-.069 (.05)
Obs	1392	1392	1392	1392
Chi2	240.50	246.58	239.99	266.47
Prob>Chi2	0.0000	0.0000	0.0000	0.0000
Liklihood ratio	-648.18	-645.15	-648.16	-634.92
Pseudo R2	0.156	0.160	0.1562	0.1734
Note:	(1)*** indicates significance at 99% ** indicates significance at 95% * indicates significance at 90%(2) Marginal Effects are presented for ease of interpretation(3) Reference categories are suburb, outskirt of big city and other (households with no children). (4) Standard Errors are presented in brackets			

Our reported coefficients from model 1 suggest that controlling for age, gender, location,

education and household makeup participation in sport, cultural, civic, community, religious

or political groups increases an individual's chances of being employed by 4.2%. Additionally, results of our alternative specification model 2 suggest that the number of associations in which an individual participates has a positive effect on employment outcomes. This is interesting as it indicates that diversity of associational membership is a good thing. Our measure of strong ties on the other hand reveals no significant results, suggesting that regularity of meeting with family and friends has no impact on job prospects.

In model 3 we add an interaction term of years of education and our binary indicator of participating in various social groups. This is the test of our second hypothesis. In line with Rooks et al (2009, p.18) we interpret a positive and significant coefficient of the education variable and the social capital variable in model 3 as indicating the two may be substitutes. A significant coefficient on either variable implies a positive effect on the dependent variable, holding the other independent variable constant. Thus, by investing time in the development of social or human capital and reducing time spent at another, similar employment outcomes can be achieved, although the marginal effectiveness of time spent in these two activities variables may still differ. On the other hand a positive and significant coefficient for the interaction term between human and social capital implies that these forms of capital are complementary. Finally, a positive and significant coefficient for the interaction term and both coefficients implies complementarity, but with some substitutability at the margin.

Our results of model 3 suggest that the first interpretation may be the most relevant here. That being, social capital and human capital are substitutes in determining Irish labour market outcomes. An individual investment in either can increase their chances of finding employment but they do not complement each other.

The marginal effects of investment in the two differ with investment in additional years of education seeming a more efficient use of time. Every year of education is associated with a 2.2% increase in the probability of being employed. As our higher order term for education also suggests that there are no diminishing returns to education our results make the case for continued education as a driver of employment prospects.

Aside from our main variables our results with regard demographics are fairly predictable. Houses with children are less likely to be unemployed with single parents 20.4% less likely to be employed than other groups. The relative size of the coefficient on single parents compared to others may lend weight to the view that childcare costs are an important factor in labour supply (although some of this may represent choice). Age is also a significant determinant of employment status; unsurprisingly age squared is also significant implying diminishing returns on age. In other words there is a u-shaped relationship between age and employment - as people grow older they first are more likely to get a job but this effect diminishes with age. Living in urban areas leads to 7.6% drop in the probability of being employed compared to our reference category people in suburban areas. This effect is also pronounced in rural areas with people in country villages suffering an 8.8% drop compared to suburbanites and people in rural properties suffering a 6.4% drop.

Interaction across groups

In model 4 our variables with continuous values are re-valued to their centred mean (essentially the mean of the variables is subtracted from each observation) to counter the

threat of multi-colinearity common in interaction models. This also has some interpretational advantages[6].

It is also important to note that the interpretation of our non-interaction effects (those included in models 1-3) has changed with the addition of interaction terms. The coefficients on our predictor variables (e.g. Male) which are also involved in the interaction (Weak Ties* Male) now represent the effect of that predictor on employment only at the value of zero on all other individual predictors (Weak ties) with which it interacts. So in Model 4, the variable 'male' represents the effect of gender on employment outcomes only for individuals who do not take part in social groups. Given the number of interaction terms we focus on the interaction terms in model 4 which are more relevant for our hypotheses.

Again our results from model 4 show no significant difference in the probability of employment due to the interaction of education and social networks. Social networks are not relatively more advantageous to people with high or low levels of education respectively.

Interestingly weak ties are more effective in large cities, small cities and towns. This suggests that proximity to social outlets and population density may have some effect on the effectiveness of social networks in disseminating information about job prospects. It could also be interpreted as weak ties in urban areas bring more diverse or of better quality. These are both logical conclusions given that urban areas are more diverse and more densely populated. Given the negative signs on binary indicators of urbanity and the positive signs on indicators of weak ties, these results suggest that in social networks some way buffer urban dwellers from negative employment outcomes.

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[6] We can now interpret the coefficients as their effect on the average person rather than from the lowest value. For example the effect of age on a person of average age rather than on a person every year from birth.

Age also positively interacts with social networks in achieving positive employment outcomes. This suggests age and social networks complements in producing positive employment outcomes. As our data contains no information on a person's experience, age is the closest proxy we have for it. Older people may be more likely to have worked for longer, and gained contacts as well as skills in their given industry. These contacts in their social networks may leave them with improved probabilities of finding employment.

7. Conclusion and policy implications

Implications for policy

Our results have lessons for policymakers. This section outlines two policy areas relevant to our work. It goes on to summarise our findings, the limitations of the study and areas for future endeavour. In terms of policy, the broader lesson from this paper is that advantages gained from social ties matters for people's employment outcomes. Reducing search costs for both individuals and businesses should, along with re-skilling, be a primary focus of labour market activation policy. In addition, understanding the mechanisms through which these networks can be translated to positive employment outcomes and giving jobseekers the skills to develop and leverage these networks will be important.

In the context of disadvantaged groups Woolcock and Narayan (2000) state that the challenge to policy from the 'networks' perspective of social capital is to identify policies which nurture the positive aspects of strong ties while helping individuals gain access to a more diverse stock of weak ties. Our research would suggest it is access to weak ties which is more advantageous to jobseekers. Additionally it suggests weak ties may be more

advantageous to certain social groups. We attribute this to a better 'quality' of ties. In order to overcome this labour market disadvantage it is arguable that particular focus should be given to those groups less likely to have 'quality' ties. Again, our research indicates that these groups are people in rural areas and young people. In our policy discussion below we focus on broad policy implications; these, however, are equally applicable to the targeting of disadvantaged social groups.

The two policies outlined in the following section are not meant as exhaustive exploration of the policy implications of this study; neither are they definite solutions to the problems posed in this paper. They do, however, represent relevant and substantive indicators of ways in which policy makers can encourage 'jobs-rich' social ties for jobseekers and thus improve their employment prospects.

Targeting existing funding

As it stands the criteria for civic, cultural and sports capital grants include some criteria prioritising funding for disadvantaged areas. The sports capital grant, for example, includes an option to include proof of the 'RAPID' or 'CLÁR[7]' status of the area in which the organisation operates. Schemes in these areas are given priority under the criteria. Our results show that participation in social, sporting and cultural organisations are a driver of improved employment outcomes, which would suggest that additional criteria, focused on organisations who remove barriers to jobseekers' participation, may be advisable in allocating funding. This would allow the funding to focus on organisations which have an even greater economic and social dividend in addition to the existing criteria.

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[7] RAPID is a scheme identifying disadvantaged urban areas, with CLÁR identifies areas of rural de-population.

Criteria should not create an overt additional burden on organisations applying. Criteria could be as simple as including proof of an observable attempt to remove barriers to groups who are disadvantaged in terms of labour market ties within the overall organisation. This could be achieved through something as small as concessionary membership or larger schemes such as specific outreach programmes or networking opportunities. A positive example of this is the GAA's (Gaelic Athletic Association) and GPA (Gaelic Player Associations) re-training and player welfare schemes which aide unemployed members of the association in finding employment and training both through formal and informal contacts in the organisation. The results of these criteria may be based on evidence of removing the barrier rather than the organisation having to prove any employment dividend.

What is important, however, it that the criteria are clear and observable particularly as the allocation of these types of grants has been criticised in the past for being overtly political. For example Considine et al (2008) and Suiter & O'Malley (2012) both find that sports capital grant allocations are disproportionately to the country or constituency of the Minister for Arts, Sport and Tourism. In addition Suiter & O'Malley (2012)   find that the constituency of the Finance minister and marginal electoral constituencies also get disproportionate funding while local unemployment rates have no effect on spending allocations, despite the criteria.

Allocated funding for the Sports capital grant was €35million in 2012 while in the region of €6.5 million was spent on cultural infrastructure (Government of Ireland, 2013). These are not insignificant sums. Policymakers should encourage clear observable criteria for funding sports, cultural and civic organisations. Funding should be defined both on the organisations merits in servicing a defined sporting, cultural or civic interest but also their accessibility to

the unemployed and those with poor social ties. Indeed, it could be argued that where such organisations actively attempt to support their members in finding employment or training they should be given additional support to expand work in this area.

Expanding employer-employee networks

A second and important policy implication of our research findings is the more general role establishing useful informal contacts has to play in the job market. Establishing formal and informal job rich networks for jobseekers along with re-skilling should be a primary focus of labour market policy. In this government and business have dual roles to play. Establishing local job and training information events where employers, jobseekers and trainers are able to network and develop social ties is something which should be encouraged and something in which local agencies and business should play an active role. These events will increase information available to business and jobseekers at a local level and reduce search costs.

A more targeted approach, however, may be to initiate contact between jobseekers and employers in the already beneficial training environment. The employer-led training initiative 'Skillnets' is an interesting case study in this regard. This scheme has already adopted the language of networks, in bringing businesses together in regional and sectoral networks to co-fund business-relevant training courses which would not otherwise be financially possible. The co-funding of these schemes by the state means that jobseekers are also eligible to participate. The interesting thing about these networks from the point of view of this research is that they not only provide training but also explicitly link jobseekers, current employees and employers in a setting where jobseekers can display their abilities and establish contacts

with the business community. In short, they put jobseekers and those most likely to have information about jobs in a room.

Figure 10: Skillnets network structure
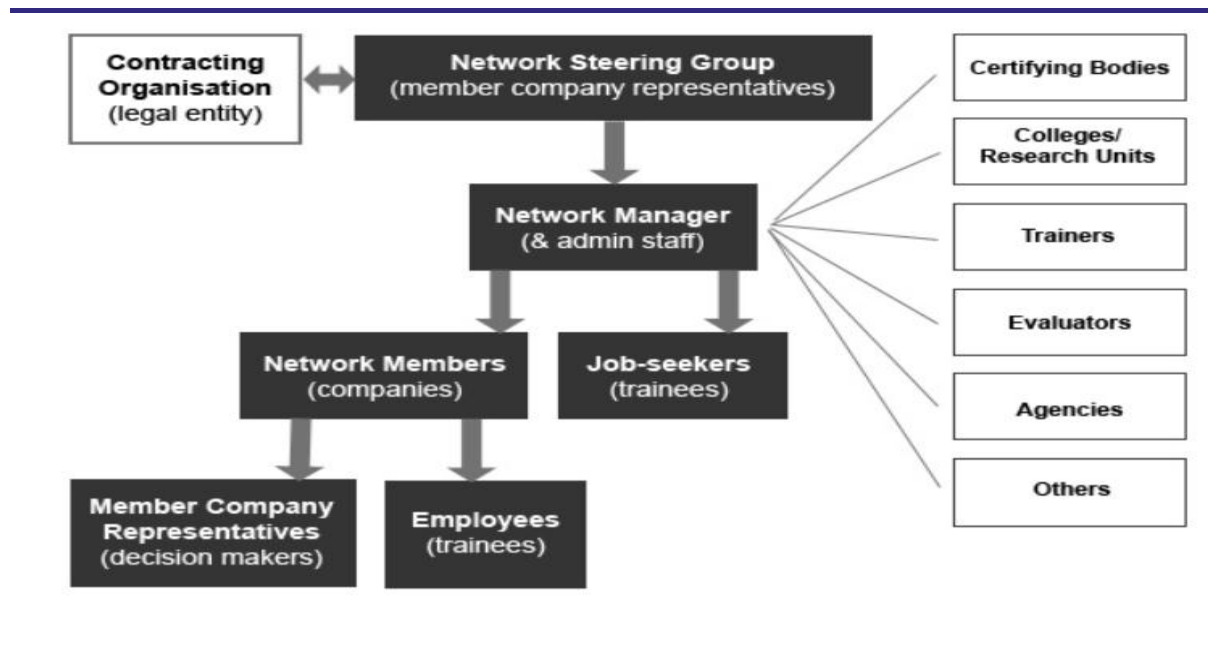
Source: (Circa group, 2012)

In 2012 over €22.7m was invested in training over 39,000 employees and 4,000 job-seekers with funding from industry, coming from almost 10,000 companies, covering €10 million of the total cost. Actual support for the Jobseeker Support Programme (JSSSP), as part of this, was €2.8 million (Circa group, 2012); about 0.3% of the overall government spending on employment supports in 2012. Expanding and learning from this network intensive and skills specific form of training is desirable for the number of reasons. Firstly, including employers in the training process reduces the information barrier between business and policymakers around skills needs. As a consequence, these courses are likely to provide skills training much closer to employer or sectoral needs, boosting individual's employability and closing skills gaps. Including jobseekers on the other side has a dividend of providing the

unemployed with an opportunity to develop 'jobs rich' social networks, improving employment outcomes. In the same sense similar programmes, such as JobBridge, are likely to lead to greater useful network ties for participants along with adding to the development of individuals more tangible skills. Indeed, in Indecon's (2013) evaluation of JobBridge undertaken for the DSP over 76% of interns said the internship had helped them establish useful contacts and networks. There is some indication from the report that this may have an impact on employment outcomes. 67.9% of interns who did not find employment said the internship had helped them establish networks and contacts compared to 81% of those who did find employment. This again was higher in graduates than non-graduates. Some of the case studies in the report also underline the importance of the networking aspect of the internships:

Case Study 1: "The highlight of the internship was the level of interaction with people working in similar or related organisations. I have established a fantastic network as a result, which is essential for my line of work."

Case study 2: "I made some great industry contacts and received great feedback and references from those who trained me which will certainly help with my future employment."

(Indecon, 2013, p. 74-75)

Of course this cannot show a causal relationship as there may be some unobserved heterogeneity here or indeed a form of confirmation bias where those who did find jobs were more positive about their internship experience. Making JobBridge data available to

researchers would be a positive step in evaluating how the scheme works and the importance of social networks in this.

Assessing the impact of greater networking and employer input, the impact of these schemes and how they work should, where possible, be used as natural experiments in design of active labour market policy. From this positive elements could be filtered into the overall training infrastructure in Ireland.

Summary

This section summarises our findings in relation to our main hypotheses. We acknowledge the questions left unanswered by our analysis which may provide a source for future study.

The results of this paper suggest a number of observations which are new to literature on the Irish labour market. Firstly, results of our study indicate that participation in sports, social, civic, community, religious and political groups increases an individual's probability of being in employment by about 4%. This finding supports our hypothesis that weak ties will positively affect employment outcomes. We also find that membership of a number of organisations increases an individual's probability of being in employment, suggesting the diversity of weak ties is a good thing. On the other hand, spending time with family and friends however has no direct significant effect on employment outcomes.

Secondly, we test the hypothesis that human capital and social capital are complements in positive labour market outcomes. We find no evidence for this hypothesis; indeed our findings suggest that the two forms of capital are more likely substitutes. Investment in both

social ties and human capital results in better employment outcomes, however, our results also suggest a stronger marginal effect from education. It must also be noted that social skills developed through education will have some part to play in developing weak ties as well.

Finally, our results show that there is some variation in the effects of social networks across social and geographic groups. Individual's age and location plays a role in determining the effect of social networks on labour market outcomes. Age and weak ties are complements; we suggest this relationship may be a proxy for experience and labour market ties gained from employment. Weak ties are also more effective in an urban context suggesting some role for ease of access to social outlets and the density and diversity of urban ties. The suggestion that social networks may be a buffer to unemployment in urban areas more so than rural ones is one that should be returned to in future study.

There are a number of limitations to our study stemming from the fact that our data was not specifically designed to measure social network or labour market outcomes. These do not limit the importance of our findings but it is important to acknowledge the gaps left for future study. The major limitation of our study is that we do not directly measure the quality of social networks as outlined in section 3. We measure investment in social ties and the diversity of the groups but not the 'quality' of those groups in terms of social and economic position of members. We attempt to control for this by allowing our findings to vary across social and economic groups, with interesting outcomes.

The major limitation from our dependent variable is that we do not have a measure of the period for which the person is unemployed. This may be important as a person's motivation

and willingness to get involved in social groups may change as they spend longer without employment. These issues should be returned to in future studies.

From a policy perspective we suggest that by encouraging social organisations to remove barriers to participation by the unemployed and better defining the criteria for sporting, civic and cultural grant schemes policymakers can improve the labour market opportunities of the unemployed. In a more targeted approach, we also suggest government evaluate the causal effects of employer led and network focused approach of re-skilling organisations such as Skillsnet and JobBridge. Lessons may be learned from these organisations on encouraging social ties and reducing search costs for employers and employees thus facilitating improved labour market outcomes.

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Appendix 1: Variable measures

Table A1:1 : Measures of variables used

Variable	Measure
Employment Status	Binary measure of employment where 1 = employed either full or part time. 0 = unemployed or out of the labour force. Individuals identified as suffering from a disability, retired or still in education were excluded from the sample.
Demographic Characteristics	
Gender	Binary indicator 1=Male 0= Female
Age	Age in years
Years of education	Years the individual has spent in education
Location	
Urban, a big city	Binary indicator of where the individuals resides. Self-assessed. 1 = Urban, a big city
Suburb, outskirt of a big city	Binary indicator of where the individuals resides. Self-assessed. 1= Suburb, outskirt of a big city
Town or small city	Binary indicator of where the individuals resides. Self-assessed. 1= Town or small city
Country village	Binary indicator of where the individuals resides. Self-assessed. 1= Country Village
Farm or rural property	Binary indicator of where the individuals resides. Self-assessed. 1= Farm or rural property
Household composition	
More than one adult with children	Binary indicator. Household has one child or more and two adults or more.
Single parent	Binary indicator. Household has one child or more and only one adult.
Other	Binary indicator. Other households without children including single households and those with two or more adults.
Social Capital	
Weak Ties	Binary indicator. 1= an individual has participated in a Sports, Cultural, Religious, Community/Civic, Political or political group once or twice a year or more. 0 = Does not participate in any of these activities
Strong Ties	Binary indicator. 1 = an individual spends time with friends or relatives once a week or more. 0 = an individual does not spend time with either friends once a week or more

Appendix 2: Tests of endogeniety and instruments

Table A2.1: Test of instrument quality

Instrument	Employment	Bridging social capital
Trust	.124	.229 ***
	(.119)	(.069)

Note: *** indicates significance at 99% ** indicates significance at 95% * indicates significance at 90%

Table A2.2: Tests of endogeneity

Test	Model 1	Model 2
Augmented regression	-1.69	-.46
	(15.762)	(.403)
LR test of bi-variate probit model	chi2(1) = .845	N.A.
	Prob > chi2 = 0.358	N.A.
Wald test of exogeniety:	N.A.	chi2(1) = 1.38
	N.A.	Prob > chi2 = 0.239

Note: *** indicates significance at 99% ** indicates significance at 95% * indicates significance at 90%

Appendix 3: Unemployment in Ireland by small area

Legend 1: Unemployment Maps of Ireland

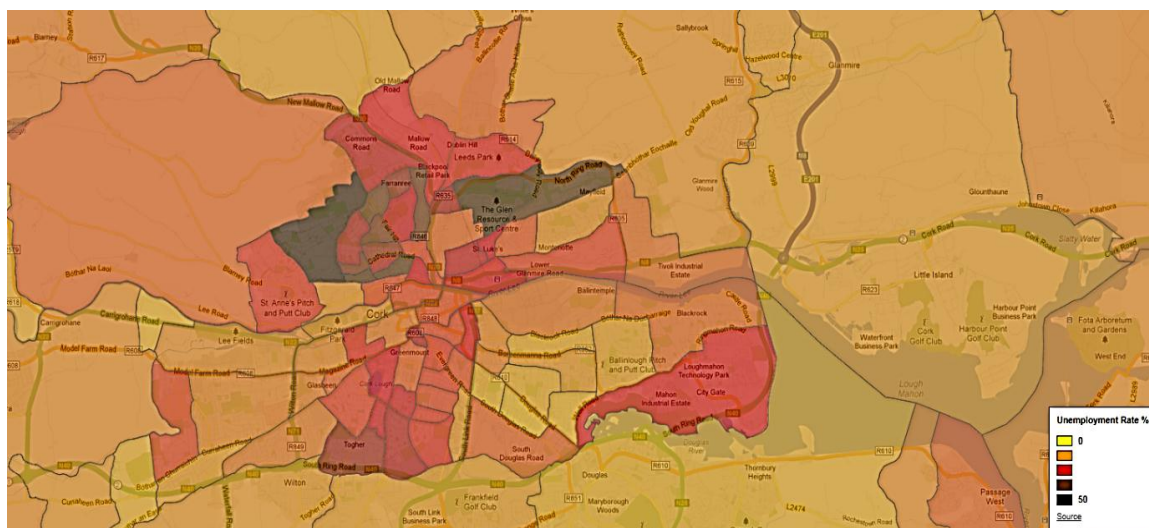| Unemployment Rate	Colour
0% -10%	
10% -20%	
20% - 30%	
30% - 40%	
40% - 50%	

Source: (Census, 2011)

Figure A3.1: Unemployment in Cork city

Figure A3.2: Unemployment in Dublin city