

## **Delivering job search services in rural labour markets: The role of ICT**

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## **ICT, JOB SEEKING AND THE 'RURAL TECHNOLOGY GAP'**

### **Abstract**

Policy makers and service providers have increasingly come to view information and communication technologies (ICT), and particularly the Internet, as an important tool in providing disadvantaged groups and areas with access to information, services and markets that would otherwise be inaccessible. It has also been argued that the Internet has the capacity to facilitate social networking between and within communities. This paper examines the current and potential role of ICT as a tool for providing job search services and social networking opportunities for unemployed people in rural labour markets. Drawing on the results of a survey of 489 registered unemployed people in two rural areas in Scotland (one a very remote rural labour market, the other peri-urban) the paper discusses the job search methods deployed by individuals and their attitudes towards, and experience of using ICT. It finds that, despite the promotion of ICT by the UK government's Jobcentre Plus agency, telephone and Internet-based services play only a marginal role in job seeking activities. More disadvantaged job seekers, in terms of income and educational attainment, were also less likely to have used the Internet to look for work. However, the higher proportion of those in very remote areas using on-line services implies that ICT-based provision has the potential to become a valuable job search tools in these communities. The paper argues for the further development of ICT-based services, but emphasises the need for support to be provided by community technology centres and formal services 'on the ground' in rural areas.

# **ICT, JOB SEEKING AND THE 'RURAL TECHNOLOGY GAP'**

## **Introduction**

Policy makers and service providers in the United Kingdom and elsewhere have increasingly come to view information and communication technologies (ICT), and particularly the Internet, as an important tool in providing disadvantaged groups and areas with access to information, services and markets that would otherwise be inaccessible (DTI, 2000; NTIA, 2000; ILO, 2001). Public and third sector agencies are turning to ICT in an attempt to widen access to official information and services, and provide new gateways to education and employment (Servon and Nelson, 2001). Beyond the provision of basic services, it has also been argued that the Internet has the capacity to supplement social capital and improve 'connectivity' and networking between and within communities (Patterson and Wilson, 2000; Wellman, 2001).

This paper specifically examines the current and potential role of ICT as a tool for providing job search services and social networking opportunities for unemployed people in rural labour markets. Drawing on the results of a survey of 489 registered unemployed people in two areas of Scotland (one a very remote rural labour market, the other peri-urban) the paper discusses the job search methods deployed by individuals and their attitudes towards, and experience of using ICT. The paper seeks to investigate the extent to which ICT-based services for the unemployed offer a realistic alternative to the face-to-face information and advice provided by the UK government's employment service, through its 'Jobcentre Plus' network. It also discusses the implications of the absence of these formal services in more remote rural areas, and in particular the extensive use of informal job search methods (especially social networks) which can further exclude the

most disadvantaged. Finally, the potential for ICT to play a more prominent role, both in terms of delivering formal services and widening access to social networks is examined.

Following this introduction, Part 2 of the paper discusses the potential benefits offered by ICT in terms of providing services and extending social networks in rural and other local labour markets. Part 3 then provides a brief description of the study areas and methodology used for the research. Part 4 presents the main survey findings, and Part 5 draws conclusions and discusses areas for policy action.

### **ICT and social inclusion in rural areas: opportunities and limitations**

#### *ICT, service provision and social networks in rural areas*

Rural areas are, by definition, affected by their relative peripherality from industrial and population centres, and their dispersed patterns of economic and social activity (McQuaid, 1997; Storgaard, 1998; Bryden and Bollman, 2000). The geographical remoteness of many rural communities from major centres of economic activity clearly affects the availability of public services, which tend to be concentrated in highly populated areas of industrial development (Robinson, 2001). The scattered and sparsely populated settlements which are typical of many rural areas also generate specific practical and financial problems for public agencies charged with delivering services. The potential benefits accruing from the use of remote, ICT-based services are therefore particularly apparent in these more isolated rural communities, which are often characterised by weak physical service infrastructures, and where other forms of interaction can be expensive, time-consuming and (as a result) infrequent (Hudson, 1995, 2001; Zappacosta, 2001).

In more general terms, it has also been suggested that the capacity of the Internet in particular to facilitate information sharing and individual participation can lead to the growth of more demand-responsive services from the 'bottom up'. Community-based Internet projects offering easy-access to official public services, but also hosting alternative, independent information and discussion sites may be one positive outcome of the expansion of web-based provision (Burrows et al., 2000). As noted above, the Internet also has the potential to supplement social capital by assisting individuals to extend their personal networks (Wellman, 2001). There is some evidence that those who become involved in the exchange of ideas and information on-line can often transfer their 'virtual' activities and relationships to the 'real' world. Internet interactions can fill the gaps left by a lack of face-to-face contacts, and also lead to the expansion of personal networks in 'physical space', with positive outcomes in terms of access to social capital (Wellman et al., 2001). As Carter and Grieco (2000) note (referring to the urban context) the Internet can contribute to social capital building by empowering the individual and developing networks, thus countering the enforced localism of life in disadvantaged and isolated communities. Given the importance granted to social capital building as a means of responding to exclusion in rural areas (Nel and McQuaid, 2002) it is unsurprising that the Internet and other ICT innovations have been welcomed and promoted by policy makers (Lindsay et al., 2001).

In the specific area of job seeking, developing individuals' access to social capital by expanding personal networks can be crucial. A number of recent studies of job seeking have specifically stressed the importance of personal contacts and social networks to job search success, particularly where opportunities are limited (Holzer, 1988; Hannan, 1999; Ooka and Wellman, 2001). These findings support the conclusions of Granovetter's (1973, 1974, 1982) groundbreaking work, which originally highlighted the role of personal contacts within the job search strategies deployed by higher skilled workers, but

more importantly noted the importance of the 'strength of ties' in affecting the success of job search efforts. Granovetter argues that 'weak ties' (acquaintances, colleagues) provide more important, 'non-redundant' job information than do 'strong ties' (kin and close friends). Networks of acquaintances or weak ties tend to be less 'dense' and closely knit, and therefore offer a wider range of contacts, with important consequences for the dissemination of information about job opportunities.

The potential value of social networks to the job search process has particular relevance in rural areas (Beggs et al., 1996; Reimer, 1997; Hofferth and Iceland, 1998). Despite apparent recent changes in the character of the countryside due to gradual industrialisation and commuter belt expansion, social relations within rural communities have retained a distinctive culture and dynamic, and informal networks continue to play an important role in rural life, particularly in more remote areas (Halfacree, 1994). Beggs et al. (1996) argue that personal networks in rural areas tend to be small, dense and homogenous. They involve less frequent contact, and are more likely to be based on kinship and neighbourhood rather than loose friendships. Such personal networks also tend to be characterised by multiplexity, in terms of the multiple roles played by participants and different forms of social resource exchanged within relationships. The density of rural networks (i.e. their strong inter-connectedness) and their resulting homogeneity can therefore contribute to social and labour market exclusion - unemployed people in rural areas have more restricted access to the 'weak ties' that contribute to successful job seeking. Furthermore, disadvantaged groups, such as the long-term unemployed and others with weak work records (for example young people) will particularly struggle to access social networks and identify job opportunities (Lindsay et al., 2001; Pavis et al., 2001).

This paper does not seek to specifically address the importance of the 'strength of ties' in job search success. Exit information was not gathered from interview

respondents, all of whom remained registered as unemployed at the last time of contact. A range of factors may have impacted on the outcomes eventually experienced by these job seekers, including their own 'employability assets' and the attitudes and recruitment methods of employers (Adams et al., 2000, 2002; McQuaid and Lindsay, 2002). Accordingly, the below analysis merely seeks to examine the use of informal social networks, Internet services and other job search methods from the viewpoint of the unemployed job seeker (as well as discussing job seekers' attitudes to using ICT). The extent to which the Internet can play an important role in delivering services for the unemployed, and facilitating the extension of social networks, will depend upon the current approach to job seeking adopted by individuals and their willingness to incorporate technology-assisted activities into their current behaviour. However, it should also be noted that many amongst the unemployed are likely to face considerable barriers to accessing and using ICT. For these people the 'digital divide' or 'technology gap' may as yet seem unbridgeable.

#### *ICT, the digital divide and the 'rural technology gap'*

Servon and Nelson (2001) note the importance of access to community-based ICT facilities in addressing the 'urban technology gap' experienced by individuals living in disadvantaged areas in American cities. The same access problems are faced by many people in rural labour markets. However, just as Servon and Nelson acknowledge the failure of urban initiatives that have been 'parachuted in', with few support services to assist communities and individuals, the 'rural technology gap' has similarly survived large-scale infrastructure investment projects in many countries and areas, including the Highlands of Scotland (Black et al., 1996; Gillespie et al., 2001).

Indeed, despite a wave of 'techno-optimism' in the early 1990s, more recent analyses of ICT access and usage, in both urban and rural areas, suggest that claims that the Internet will inevitably result in the 'death of distance' as a barrier to employment and social inclusion are at best premature (Grimes, 2000; Van Winden, 2001; Graham, 2002). The introduction of new technologies has generally tended to benefit the least disadvantaged, while large numbers of individuals continue to be excluded as a result of their educational or financial status. Servaes and Heinderyckx (2002: 105) argue that a genuine or perceived lack of *need* explains the failure of many individuals to use ICT, but also note that: "denying a need is in some cases a legitimate cover-up for ignorance, fear or lack of financial means". More affluent and skilled workers are much more likely to possess the skills, knowledge and financial resources to fully exploit the opportunities offered by the Internet and other technological advances (Russell and Drew, 2001).

Beyond these more obvious problems surrounding skills and access to the required technology, it has also been suggested that the relative failure of some groups and communities to embrace ICT can be traced to issues of 'culture and content'. The promised dynamism and responsiveness that was supposed to characterise ICT-based provision is not particularly evident in the UK, where official information sites and helplines largely continue to treat the client as a passive consumer of highly structured services (Corrigan and Joyce, 2000). Meanwhile, localised initiatives have often failed to fully identify the needs of communities, or to provide a role for end-users in the design of services (Day, 2001). As a result, it has been suggested that the content of ICT-based services has not managed to bridge the 'cultural distance' between service professionals and information-users (Hellowell, 2001). Nevertheless, UK policy makers remain convinced of the value of ICT in providing services, especially in rural areas (DEFRA, 2000; Scottish Executive, 2000). In the specific area of provision for the unemployed, the national employment service, Jobcentre Plus, has promoted its 'Internet job bank' and



national telephone helplines as important supplementary services throughout the country, and as its primary means of contact with job seekers in many remote rural areas (Employment Service 2000). The agency's objective is to offer ICT-based provision that can replicate the range and quality of counselling and information available to clients receiving 'face-to-face' services at Jobcentre facilities in less remote labour markets.

The below analysis seeks to contribute to the debate on the provision of services through the Internet and other forms of ICT, by examining the nature and extent of the 'rural technology gap' experienced by unemployed job seekers in two areas of Scotland. The extent to which job seekers have access to the skills and technology required to fully exploit ICT will largely determine the current effectiveness of policies that emphasise the use of remote services in isolated rural communities. However, perhaps more importantly, the formal and informal search methods deployed by job seekers, their awareness of ICT as a means of networking and obtaining information, and the changing balance between these factors in both remote and semi-rural areas, will be crucial in determining whether the Internet is to play a more central role in delivering services for the unemployed in the near future.

### **The study areas in context and sample information**

The research reported in this paper was carried out between November 2000 and May 2001 in two areas of Scotland. The first study area was comprised of two contiguous travel-to-work-areas (TTWAs) in the remote northern Highlands: Wick and Sutherland. Caithness (the area in which Wick is located) and Sutherland are the most northerly counties of mainland Britain, and are therefore particularly remote from major centres of economic investment and industrial activity. The areas are also among the most sparsely populated in Europe (14.8 persons per square km in Caithness and only 2.2 persons per square km in

Sutherland). Both areas have recently been affected by persistently high rates of unemployment and long-term unemployment.<sup>1</sup> Within this general context, the Wick and Sutherland TTWAs face specific challenges as a result of industrial restructuring and the decline of traditional centres of employment. Wick is a small town struggling to cope with the impact of the restructuring of traditional fishing-related industries, whilst the more sparsely populated Sutherland TTWA, covering an extensive geographical area (5,865 square km) has also been highly dependent on now declining primary sector employment. With the disintegration of these traditional industries, tourism, financial services and public sector employment now dominate the limited opportunities within Wick and Sutherland.

It should be noted that the services available to job seekers in these two 'sub-areas' differ markedly. The Wick TTWA is dominated by the town of Wick, which has its own government Jobcentre facility. The much larger Sutherland TTWA hosts a number of very remote settlements, but has no Jobcentre facilities. As a result, unlike their counterparts in the Wick TTWA, many of Sutherland's job seekers are excused from the fortnightly routine of appearing in person at Jobcentre facilities to 'sign on' as actively seeking work (instead contacting Jobcentre staff through a 'freephone' number to receive information and confirm their availability for work).<sup>2</sup> The absence of formal services provided by Jobcentres is likely to impact on the job search strategies deployed by unemployed people, and may result in their readiness to adopt alternative methods, ranging from the use of ICT to a reliance on informal, social networks.

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<sup>1</sup> In November 2000, the unemployment rate for the Scottish Highlands (i.e. in the 'Highland Council' local authority area) was identical to that for Scotland as a whole at 5.0%. At the same time the Wick and Sutherland TTWAs were experiencing much higher levels of general unemployment (at 7.0% and 10.6% respectively). Furthermore, in Wick, 31.9% of all registered job seekers were 'long-term unemployed', having not worked in over twelve months (29.5% in Sutherland). Source: NOMIS/UK Office for National Statistics.

<sup>2</sup> This distinction is important. In most parts of the UK 'signing on' forms the basis for regular, compulsory attendance at Jobcentres by claimants. Although often seen as an expression of the national employment service's 'benefit policing' role, the routine of regular meetings with Jobcentre staff also provides unemployed people with an important focal point for job seeking activities and an opportunity to access information and advice (Lindsay et al. 2001).

The second study area provides a strong contrast. West Lothian is situated in the 'central belt' of Scotland, between the country's two largest cities, Glasgow and Edinburgh. It's largest town, Livingston, is 15 km from Edinburgh, Scotland's rapidly expanding capital. The area is a major centre of manufacturing activity (and has therefore recently experienced job losses as a result of adverse sectoral conditions). Despite these problems, unemployment remains below the national average. However, West Lothian is also a semi-rural/peri-urban labour market, with a number of scattered, sparsely populated settlements, relatively isolated from the area's centres of commerce and services (the towns of Livingston and Bathgate). Accordingly, it might be argued that those residing in outlying areas, without ready access to private transport, may face similar barriers to work to job seekers in more remote rural areas. The area's main towns are, however, well served by Jobcentre facilities.

The vast majority of responses in both study areas were gathered through semi-structured, face-to-face interviews (424), supplemented by a small number of postal questionnaires (65). In total, 299 responses were gathered in West Lothian, and 190 in Wick and Sutherland. Substantial minorities in both sample groups were 'long-term unemployed' (using the 'ILO definition' of unemployed and available for work for twelve months or more). As Table 1 illustrates, more than one-third of respondents in the West Lothian sample, and two-fifths of those from Wick and Sutherland were long-term unemployed, and the majority of both sample groups had been unemployed for at least six months. The West Lothian sample group featured a higher proportion of young people (defined here as the 18-24 age group) than the Wick and Sutherland sample (28-20%). Respondents interviewed in Wick and Sutherland were, conversely, much more likely to be aged '50 plus' (an age group which, like 18-24 year olds, is specifically targeted by welfare to work initiatives). However, the majority of both sample groups fell into the middle category ('25-49 years'). The average age of respondents in this category was

similar in both sample groups (at 35.5 years in West Lothian and 37.7 years in Wick and Sutherland).

*INSERT TABLE 1 ABOUT HERE*

The educational attainment of the sample groups was rather similar, despite the presence of a higher proportion of long-term unemployed people in the Wick and Sutherland cohort. The vast majority of respondents in both areas had fairly limited qualifications – 73% of West Lothian job seekers and 79% of those from Wick and Sutherland were not qualified to Scottish Higher Grade/Scottish Vocational Qualification Level 3, the level of qualification generally required for admittance to higher education in Scotland (see Table 2). Only around 45% of the general Scottish labour force are similarly unqualified (Scottish Office, 1998).

*INSERT TABLE 2 ABOUT HERE*

### **Findings: ICT and job seeking in rural areas**

#### *Job search methods used by respondents*

The job search methods currently used by unemployed people in these two very different rural labour markets should offer some indication as to the relative importance of ICT, social networking and more traditional, ‘formal’ services, and the potential for an expansion in the role of Internet or other ICT-based provision. Our initial findings highlight the different approaches adopted in the more remote Wick and Sutherland labour markets, where Jobcentre facilities are few or non-existent, and the more centrally-located West Lothian. In remote rural areas such as Wick and Sutherland, it would appear that informal methods (ranging from direct approaches to employers to

social networking though personal contacts) are a crucial part of day-to-day job seeking activities. In West Lothian, on the other hand, the highly formalised services offered by the Jobcentre Plus agency were more important.

Table 3 illustrates this point. When asked about the job search methods that they used on a weekly basis, West Lothian respondents were far more likely to mention the information facilities and advice of staff in Jobcentres. Almost 70% of West Lothian respondents had received advice from Jobcentre staff on a weekly basis, compared to only 44% of those from Wick and Sutherland. Clearly, the remoteness of some settlements in the northern Highlands makes it impossible for job seekers to travel to the area's 'local' Jobcentres on a regular basis. However, the freephone telephone helplines offered by Jobcentre Plus appear to be unable to replicate the relationship established between job seekers and staff within 'real' Jobcentre settings, at least in terms of numbers of contacts. Conversely, Wick and Sutherland sample members were much more likely to use personal contacts and direct approaches on a regular basis to look for work. Only 42% of West Lothian job seekers (and only 27% of the long-term unemployed) had used their contacts to look for work on a weekly basis, compared to 73% of the Wick and Sutherland sample - a figure which was constant even when the sample was analysed by unemployment duration (around a threshold of twelve months of unemployment) and geography (separating the Wick and Sutherland TTWAs).

*INSERT TABLE 3 ABOUT HERE*

In both study areas, the Internet appears to be an important job search tool for a small - but still significant - group of job seekers, with 16% of Wick and Sutherland respondents and 18% of those in West Lothian using web-based services on a weekly basis. However, in this case the internal geography of the Wick and Sutherland labour markets had more of an impact. The figure of 16% using the Internet on a weekly basis masks a wide

variation between the town-based Wick TTWA, where Jobcentre facilities are available (9%), and the more remote settlements of Sutherland (28%). Although Sutherland job seekers were generally slightly more highly qualified than their Wick counterparts, a characteristic that may have some impact on Internet access (see below), it would appear that 'location matters' in determining ICT use in remote rural areas.

A closer examination of the methods used by respondents to successfully identify opportunities reveals the still marginal role of the Internet as a job search tool. Table 4 shows a fairly even spread of search methods used by unemployed people to identify 'the last job that they applied for'. Once again, formal Jobcentre services appear more important in the centrally-located West Lothian labour market, with informal methods playing a greater role in Wick and Sutherland. Once again, within the Wick and Sutherland labour markets, differences in job seeker behaviour between the two TTWAs were apparent. The more remote Sutherland job seekers were more likely to have relied upon informal methods (50% compared to 36% of Wick TTWA respondents), while those from the Wick TTWA were much more likely to have used Jobcentre staff (16% compared to 9%) and information facilities (21% compared to 4%) to identify their most recent job opportunity.

Perhaps more importantly, although job seeking via the Internet appeared to be a regular activity for almost one-fifth of job seekers, very few had recently found success in identifying an appropriate vacancy on-line. Only two respondents (1% of the sample) from Wick and Sutherland had accessed Internet job search sites. No West Lothian-based respondents had used the Internet to identify their most recently pursued job. For many unemployed people, ICT remained of little or no value in their job search.

*INSERT TABLE 4 ABOUT HERE*

Servaes and Heinderyckx (2002) suggest that low take-up and use of ICT among excluded groups can be explained in part by a lack of need or awareness, but also by problems (whether financial or geographical) in accessing technology, and individual gaps in the skills required to effectively exploit ICT. These potential problems of access, skills and awareness provided a framework for a further investigation of the barriers and opportunities presented by ICT-based job seeking. Our objective: to identify the nature and extent of the digital divide or 'technology gap' experienced by rural job seekers.

*Job seekers and ICT: access, skills and awareness*

If facilities delivered via the Internet are to enable job seekers to identify appropriate vacancies, and provide opportunities to extend social networks, *access* to ICT is an issue of central importance. Comparing domestic access to ICT across our two study areas, members of the West Lothian sample emerged as slightly more likely to have a home or mobile telephone (83%, compared with 76% in Wick and Sutherland) and a PC with private Internet connection (26%-19%). Members of the Wick and Sutherland sample who resided in the more rural Sutherland TTWA were clearly more likely to have Internet access (27%, compared to 12% of those in the Wick TTWA). They were also more likely to have a home telephone (85%, compared to 68% in Wick). However, it is perhaps more worrying that a small but significant minority (15%) of those from rural Sutherland reported that they did not have a home or mobile telephone. (Among the long-term unemployed this rose to 21%.) The telephone-based services provided by Jobcentre staff to clients in very remote areas of Sutherland supposedly replicate the quality of advice and counselling offered to those who attend Jobcentre offices in person.

It is questionable whether the minority of Sutherland clients without ready access to a telephone, who are required to 'phone in' from others' residences or public telephone kiosks would agree (Lindsay et al., 2001).

*INSERT TABLE 5 ABOUT HERE*

While area-based factors may account for some of the differences in ICT access and usage, it is likely that other, personal barriers will have limited the ability of some job seekers to take up ICT-based services. As Table 5 illustrates, long-term unemployed people in *all* areas were rather less likely to have Internet or telephone access at home. It would appear that this in turn reflects a combination of financial and skills barriers faced by the more disadvantaged. Whereas only 15% of those job seekers reporting a total household income of less than £150 per week (approximately EUR236) had access to the Internet at home, the figure for all other respondents was 43%. Similarly, only 15% of those in the lower income bracket used the Internet to look for work on a weekly basis, compared to 27% of those with a weekly income above £150.

Those with limited skills were similarly disadvantaged in terms of accessing the Internet. As Table 6 shows, those qualified to the general level of 'SCE Higher Grade or equivalent' were more than three times more likely to have home Internet access than those with no qualifications (37%-12%). Higher qualified job seekers were also much more likely to use the Internet to look for work on a weekly basis (34%-8%).

*INSERT TABLE 6 ABOUT HERE*

Another considerable concern for policy makers must lie in the admission of many job seekers, across *all* income and skill groups, that they lack confidence in using basic ICT. When asked to rate their own attainment across a range of areas, the vast majority of respondents described their skills as 'good or adequate'. Clearly, in some cases this will



not reflect an objective analysis of the individual's skills. It is common for job seekers to demonstrate a degree of over-confidence in evaluating their skills attainment - perhaps reflecting the rhetoric used by many on a day-to-day basis when attempting to 'sell' themselves to employers (McQuaid and Lindsay, 2002). However, it is notable that while less than 10% of all respondents considered their occupational skills, literacy, numeracy or communication skills to be 'poor', 58% held similarly negative views about their ICT skills. Educational attainment would again appear to be closely linked to job seekers' perceptions here. Those qualified to the general level of 'SCE Higher Grade or equivalent' were much less likely to consider their ICT skills to be poor (36%, compared to 78% of those with no qualifications and 55% of those with intermediate qualifications). Younger job seekers, who tend to hold more formal qualifications, were also generally more confident about using ICT: only 49% of 18-24 year olds described their ICT skills as poor, compared to 75% of those aged 50, and 57% of other job seekers. This is particularly noteworthy given that 18-24 year olds were only slightly more likely than the '50 plus' age group to have home Internet access (although both groups were below-average in terms of regularly using Internet to look for work, at 14% and 12% respectively).

Age, attitudes towards ICT, perceived and real gaps in technical skills, and perhaps most importantly educational attainment and income status may all impact on the ability and willingness of job seekers to use new forms of technology as a means of looking for work. However, there is a clear need to 'unpack' these variables, and the relationships between them. For example, those with lower household incomes are both more likely to be long-term unemployed and less likely to have access to the Internet at home. Yet thus far it has remained unclear the extent to which the digital divide experienced by many of these individuals is a symptom of their long-term unemployment (in itself linked to lower educational attainment), their income status, or a combination of these and other factors.

In order to test the association between individual and labour market characteristics and ICT access and use, a binary logistic regression model was used. The model examined the association between two dependent variables (home Internet access; weekly use of the Internet for job seeking) and selected job seeker and area characteristics that emerged as potentially relevant from the above analysis. Dummy variables for the 'West Lothian' study area and the 'Sutherland' TTWA (as opposed to the broader 'Wick and Sutherland' area) were used. As Table 7 illustrates, the strong association between job seekers' skills and ICT access is confirmed. Both formal qualifications and job seekers' perceived ICT skills appear to be significantly associated with Internet access (with those perceiving their skills to be 'good or adequate' more likely to have on-line facilities at home). Home Internet access was also associated with income status, reflecting the manner in which those with higher household incomes (often reflecting the presence of a working partner) are better able to cope with the costs of hardware purchase and connection charges. Although there was a positive association between Internet access and residence in both West Lothian and Sutherland, the degree of significance was a stronger for the latter.

*INSERT TABLE 7 ABOUT HERE*

The statistically significant association between factors such as gender and income status and Internet access was not replicated when Internet job seeking was analysed. There was, however, a strong association between measures of respondents' skills (formal qualifications and perceptions of ICT skills) and their use of the Internet as a job search tool. While residence in West Lothian was not strongly associated with web-based job seeking, there was a significant positive relationship between Sutherland residence and the use of the Internet. Internet access and use therefore appears to be associated with a combination of factors related to skills and qualifications, income and gender. Perhaps

more importantly, these findings confirm that those in more remote areas (such as the isolated settlements of Sutherland) are more likely to invest in domestic ICT facilities and use the Internet to look for work. In these areas (more so than semi-rural or peri-urban labour markets) there may be an awareness that the weakness of formal service infrastructures necessitates the adoption of 'alternative' job search strategies and approaches to social networking, with web-based activities offering one potential source of information and communication (Lindsay et al., 2001). However, it should be noted throughout that ICT-based job seeking remains the activity of a minority. For most unemployed people, across a range of skill groups and social classes, technology-based forms of job seeking and social interaction remain a somewhat obscure concept.

### **Discussion and conclusions**

This paper has sought to examine the current and potential role of ICT as a tool for providing job search services and social networking opportunities for the unemployed in rural labour markets. The above findings demonstrate that while ICT plays some role in the job seeking activities of the unemployed in these areas, it remains of marginal importance, compared to informal face-to-face networking (especially in more remote rural areas) and the use of formal Jobcentre facilities in peri-urban labour markets. Whereas in West Lothian the weekly job seeking activities reported by the unemployed were dominated by the use of Jobcentre information services and the counselling provided by the agency's staff, Wick and Sutherland job seekers were much more likely to rely on a combination of personal contacts and direct approaches to employers. In both areas, a small but not insignificant group of job seekers used the Internet on a regular basis to look for work. However, in both areas few or no job seekers had successfully identified the last opportunity that they had pursued through the Internet.

The ability of job seekers to access ICT and use the Internet as a job search tool is affected by a combination of factors, not least those linked to income and educational attainment. Their use of the Internet may also reflect the *need* to adopt alternative strategies in very remote rural areas which are isolated from official Jobcentre services – a need that is less pressing in rural towns or peri-urban areas with strong links to major population and service centres. However, the Jobcentre Plus agency's current approach to delivering 'official' information and counselling services in remote rural areas, relying largely upon regional and national telephone helplines and Internet sites, appears to have had a limited impact in the Wick and Sutherland labour markets (among the most remote rural communities in the mainland UK) in terms of use and identifying opportunities

The findings also demonstrate that those with few technical or analytical skills face being left behind as service providers drive forward the implementation of ICT-based services. Servaes and Heinderyckx (2002) argue that the developing information society will require a new literacy, based on the capacity of individuals to access and use information and ICT applications. The literacy problems faced by many people on the margins of the labour market are of the more traditional variety, and are likely to combine with a lack of ICT skills to exclude them from the information society, and even from accessing basic public services.

Indeed, as the Internet becomes increasingly dominant as a means of disseminating information, traditional face-to-face interactions may be downgraded, so that the already disadvantaged will face further expenses and barriers in attempting to access services in the 'traditional' way (Graham, 2002). Robinson (2001) has noted the over-reliance of successive British governments on new technologies as a potential cure-all for the problems of rural communities, and the similarly familiar enthusiasm of the current UK administration for devolving responsibility for delivering services in disadvantaged areas to local partnerships (for an EU-wide perspective, see also Geddes, 2000). Behind the

rhetoric of 'empowering communities', there remains a reluctance to invest in core services on the ground, reflected in the increased marketisation of public services and the 'rolling back' of direct state intervention in rural and other areas (Doogan, 1997; Jones and Little, 2000; Hoggart and Paniagua, 2001).

ICT-based services for job seekers have the capacity to enable recipients to develop new skills, access information on employment and training, extend their social networks and communicate their needs to service providers and policy makers more effectively. Given the particular importance of social networking in rural labour markets, and the Internet's proven value in extending network relations (as well as providing 'official' information), an expansion and further development of services delivered through ICT may offer considerable benefits in rural areas. However, efforts must be made to ensure that investment in Internet services does not provide the justification for the withdrawal of local facilities in remote areas. The benefits offered by ICT-based services in terms of employability and social capital cannot be achieved without investment in technical resources and support services at the local level.

It has been demonstrated elsewhere that where new technologies or ICT-based services have been 'parachuted' into communities (whether urban or rural), with few support services to assist disadvantaged individuals and groups, their impact has been limited (Qvortrup, 1991; Richardson et al., 2001; Servon and Nelson, 2001). The rural technology gap faced by unemployed job seekers can only be bridged by a combination of policies, which prioritise the provision of on-line services, but also the development of community-based technology centres offering both ready access and skills development opportunities for local people. A renewed commitment to community-based facilities, informed by an ethos of local participation, is required if excluded groups in rural areas are to reap the undoubted benefits that ICT can deliver in terms of social and labour market inclusion.

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## Tables

Table 1 Percentage of sample in study areas unemployed for at least six/twelve months

<b>Duration</b>	Wick and Sutherland	West Lothian	Combined study areas
6 months +	63	55	58
12 months +	41	34	37

Table 2 Level of qualification attained by respondents, by study area (%)\*

<b>Level of qualification</b>	Wick and Sutherland	West Lothian	Combined study areas
None	36	37	37
SCE 'O' Grade/equivalent	37	42	40
SCE 'H' Grade/equivalent	12	13	13
Higher ed. qualification	11	5	7
Degree/equivalent	4	4	4
<i>Total (rounded)</i>	<i>100</i>	<i>100</i>	<i>100</i>

\*'None' includes those naming vocational qualifications not recognised in the Labour Force Survey. 'O Grade or equivalent' includes SCE Ordinary and Standard Grades, GSVQ, RSA diploma level and SVQ 1-2. 'H grade or equivalent' includes SCE Higher Grades, GSVQ advanced, RSA advanced diploma, SVQ level 3. 'Higher Ed. qualification' includes HND, HNC, SVQ 4 and professional qualifications.

Table 3 Percentage of respondents using selected job search methods on a weekly basis (percentage of long-term unemployed respondents using selected job search methods)

<b>Job search method</b>	Wick and Sutherland	West Lothian	Combined study areas
Newspaper advertisements	97 (97)	92 (90)	94 (94)
Jobcentre notice boards	48 (45)	77 (67)	66 (57)
Advice from Jobcentre staff	44 (44)	69 (63)	60 (55)
Personal contacts	73 (73)	42 (27)	54 (47)
Direct approach	61 (55)	25 (21)	39 (35)
Internet	16 (10)	18 (13)	18 (12)

Table 4 Job search methods used to identify most recently pursued job opportunity (percentage of long-term unemployed respondents using same job search methods)

<b>Job search method</b>	Wick and Sutherland	West Lothian	Combined study areas
Personal contacts/direct approach	41 (34)	28 (24)	33 (29)
Jobcentre notice boards	14 (19)	32 (36)	25 (29)
Newspaper advertisements	21 (19)	17 (15)	18 (17)
Advice from Jobcentre staff	14 (23)	11 (17)	12 (20)
Other	4 (2)	9 (2)	7 (2)
Community bodies/facilities	5 (3)	4 (5)	4 (4)
Internet	1 (0)	0 (0)	1 (0)
<b>Total</b>	<b>100 (100)</b>	<b>100 (100)</b>	<b>100 (100)</b>

Table 5 Access to ICT, by duration and study area (%) (percentage of long-term unemployed with access to ICT in brackets)

<b>Form of access</b>	Wick and Sutherland	West Lothian	Combined study areas
Internet	19 (13)	26 (18)	23 (16)
Telephone	76 (66)	83 (75)	80 (71)

Table 6 Respondents with home Internet access and using the Internet to look for work on a weekly basis, by educational attainment (%)

<b>Respondents' general educational attainment</b>	% with Internet access	% using Internet weekly
None	12	8
SVQ1-2/SCE O Grade or equivalent	25	16
At least SVQ3/SCE H Grade or equivalent	37	34
All respondents	23	18

Table 7 Respondents with home Internet access and using the Internet to look for work on a weekly basis, by selected individual characteristics

<b>Respondents' characteristics</b>	Home Internet access		Weekly Internet use	
Level of qualification	-0.299	**	-0.469	***
Income group	-0.414	***	-0.135	
Unemployment duration	0.369		0.364	
Gender	0.843	**	0.129	
Area of residence (West Lothian)	-1.023	**	-0.404	
Area of residence (Sutherland)	-1.674	***	-1.225	**
Perception of ICT skills	1.246	***	1.114	***
Constant	-0.543		0.062	

Beta co-efficients estimated from binary logistic regression

\*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$