Public library internet access in areas of deprivation: The case of Glasgow

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Abstract

The Internet plays an increasingly central role in the lives of individuals. It enables individuals to engage in social, economic, leisure and entertainment activities including wider access to information. Due to extensive societal use of the Internet, those without access are clearly disadvantaged. They will lack the necessary information to make decisions, forgo the savings from shopping online and limit their opportunities for social interaction. This paper investigates the role that libraries can play in providing free public Internet access. This role is examined within the context of Glasgow, a large post-industrial city in the United Kingdom where Internet adoption is lower than in comparable cities and where a large proportion of its population face a range of socio-economic hardships. Primary data was collected from library users in three areas of deprivation. Our analysis demonstrates the role that libraries play as the provider of public Internet access. It shows that this role is not without its difficulties - inadequate levels of resources have been provided to fulfill the multiple roles that libraries perform in these communities. Libraries enable users to engage in a wide array of online activities, the range of which reflects both the push of government policies and the pull of innovative services.

Keywords: Glasgow, libraries, Internet access, broadband

1. Introduction

The Internet is increasingly playing a central socio-economic role. Large parts of the economy rely on the Internet to sell and distribute their goods and services, while some form of online activity underpins social activities. This is demonstrated by the rise of large online retailers like Amazon and the widespread use of social networks, online content etc. across society. Given how important the Internet has become, those without access to it are clearly disadvantaged. While broadband adoption has steadily increased across the UK, there are large differences across the country in terms of the urban-rural split on the one hand and between different cities on the other.

Although broadband adoption has steadily increased in Scotland, within Glasgow, the country's largest city, adoption has stagnated. The reason for this stagnation is unclear. There are many socio-economic problems associated with Glasgow, though cities with comparable levels of populations and similar socio-economic characteristics all appear to have achieved higher levels of broadband adoption. Many parts of the city can be described as impoverished, with limited numbers of people working and low life expectancy. While this partly explains the low level of broadband adoption within Glasgow, it raises another issue that is the focus of this paper, namely, are individuals living in these areas obtaining access to the Internet through others means? Some Glaswegians may have access through a dongle, while others could use a smartphone.

There is, however, a third alternative way for Glaswegians to access the internet, namely through public provision in a library. Within the United States, the role of libraries as providers of Internet access has attracted attention from commentators adopting a range of different perspectives. For example, the provision of Internet access by libraries to those who are poor or homeless has been explored by Gordon et al. (2003) and Crates (2014) respectively. In contrast, Jaeger et al. (2012) and Sin (2011) investigate the resources available to libraries while Jayakar (2011) places them within the wider policy context of broadband availability and use. Regardless of the specific perspective adopted, the research highlights the pivotal role played by libraries in providing Internet access to marginalised communities.

This increasingly important role in the United States reflects the emergence of an information-based society and the presence of a series of barriers such as affordability and the lack of relevant skills that inhibit adoption, but also the move of government services online (Arnason and Reimer, 2012; Jaeger et al., 2012; Sin, 2011). It also raises questions regarding to the situation in Glasgow. Although Glasgow has an extensive network of libraries across the city that offer free Internet access to library members, it is not clear what activities are undertaken online. Moreover, how the barriers to adoption manifest themselves remain unclear, as does how Glasgow as a city responds to them so that Internet adoption by its population can occur.

With this in mind, the remainder of the paper is structured as an exploratory study into the online activities of users in three areas of the city. The eight libraries in these areas are located in areas of deprivation in Glasgow with the consequence that the exploration occurs within a context of a divide, which in this case is related to deprivation, which exists within the city. In the following main section salient issues in the digital divide literature are discussed before Section 3 describes Glasgow. This is then followed in Section 4 by a discussion of public Internet access. The methodology adopted in this paper is outlined in Section 5, with the resulted findings detailed in Section 6. These findings are discussed in Section 7 before conclusions are drawn in the final section of the paper.

2. Digital divide

In its simplest form the digital divide represents a gap in access to and use of digital or electronic information between different sectors of society and first arose around the end of the 1990's (van Dijk, 2005). It has been argued that it is just another facet of social exclusion (Rafferty and Steyaert, 2007) and 'diminishes the chances of participation in all relevant fields of society' (van Dijk, 2005: 177). Epstein et. al. (2011) go further, splitting it into access to technology and capacity to use technology. Both are required if households and businesses are to maximise the benefits that are available to them via the Internet. For some, access to digital information is an entitlement similar to that of other household utilities (Westminster e-forum, 2012; European Commission, 2009), while others, such as International Telecommunications Union (2012) suggest that it is a basic human right.

There is an extensive literature on the barriers to and drivers of household Internet access. This literature is (partially) summarised in Table 1, with a focus on the barriers to adoption. The table highlights various categories such as demographics and education that are regarded as being important.

[Insert Table 1 about here]

Based on demographics factors, users are less likely to use the Internet if they are older, from an ethnic minority, female, have no children or are from a deprived area (Dutton, et. al. 2009; Larose, et. al. 2012; Ofcom, 2013a; Prieger & Hu, 2008; Selwyn, 2004; Scottish Government, 2012a). Enyon (2009, p281) specifically investigated the digital divide in terms of education and learning, finding that 'use of the Internet is shaped by socio-economic, demographic and attitudinal factors'. Those educational and skill related factors that influence the likelihood of using the Internet are that it is not used at work, that work involves low technology and equipment skills, the level of education is basic, low general Internet skills and technology confidence and low levels of Internet experience (Communications Consumer Panel, 2012; Dutton, et. al. 2007; Eynon, 2009; Hatgittai & Hinnant, 2008; Helsper, 2008; Scottish Government, 2012a; Selwyn, 2004).

Economics also influence use of the Internet. The Scottish Household Survey reports that in Scotland only 50% of those earning less than £15,000 per year use the Internet, with this figure rising to 98% for those whose yearly incomes are above £40,000 (Scottish Government, 2012b). Ofcom reports this for Glasgow, showing similar trends - only 38% of households in lower socio-economic groups have a fixed broadband connection. This figure, however, rises to 87% for more affluent groups (Ofcom, 2013a).

Social aspects play a key role in the adoption of new goods and services (Rogers, 2003), with the social experience of learning important for older people (Radcliff & Winkler, 2011). The structure of social networks, as well as direct social influence and neighbourhood relations, mediate ICT and Internet use (Consumer Ccommunications Panel, 2012; Crang, et. al. 2006; Dwivedi, et. al. 2009). A study for Communications Consumer Panel interviewed 48 Internet users with low levels of digital engagement and 44 stakeholders (Communications Consumer Panel, 2012), finding that a 'lack of interest,' 'fear of technology' and their failure to prioritise use due to being unable to perceive the associated benefits, were factors likely to prevent adoption. They also found that a 'fear of being excluded' could be a driver for some to use the Internet. If non-users are able to use the Internet by proxy – that is, someone else is able to go online for them – then they are less likely to use the Internet themselves (Ofcom, 2012a; White, 2013). A negative attitude to technology is also a barrier to being online (DiMaggio, et. al. 2001; Eynon, 2009; Verdegem & Verhoest, 2009). Eynon (2009) found that 91% of those with a 'positive attitude' were current Internet users. Peer pressure and the household context may also act as a barrier to going online (Agarwal, et. al., 2009; Selwyn, 2004).

3. Glasgow

Glasgow has a population of 593,000 (Scotland's Census, 2011), 11.2% of Scotland's population. As can be seen from Figure 1, the city is split geographically into north and south by the River Clyde, with around two thirds of the population living north of the river.

[Insert Figure 1 about here]

Glasgow City Council is the largest local authority in Scotland, with an annual budget of £2 billion and a workforce of approximately 40,000 (Sotiropoulos and Duckworth, 2011). Glasgow is a post-industrial city and is recognised as an area with high levels of deprivation (Walsh, et.al. 2010). Bazalgette, et.al. (2012) developed

seven indicators of disadvantage and using 2009/2010 data from the Scottish Household Survey highlighted the deprivation that occurs across Glasgow: 11% of households faced disadvantages in at least four of the seven areas. They identified that Glasgow has the highest proportion of residents, from across Scotland, claiming unemployment benefits, a figure confirmed by ONS (2013).

Glasgow has a lower percentage of economically active residents (70.8%) than both Scotland (77%) and the rest of the UK (76.7%) (Nomis, 2012). Some of this economic inactivity is due to the large student population, however, a third is due to long-term sickness (Nomis, 2012). Glasgow also has a greater proportion of residents in elementary, that is, basic, occupations compared to Scotland or the UK (Nomis, 2012). Glasgow employees also earn less per week – average weekly wages are £474.90 in Glasgow, £498.30 in Scotland and £508 in the UK (Nomis, 2012). It is, therefore, no surprise that just over a fifth of Glaswegians were income deprived (Scottish Index of Multiple Deprivation, 2012 p. 3).

Glasgow also suffers from issues surrounding access to credit (Alexander, 2012). Those without a bank account in Glasgow increased from 9% in 2009/2010 to 12% in 2012 (Scottish Household Survey, 2012). This absence of a bank account can have an impact in multiple areas of someone's life due to the norms and systems within society today. Without a bank account you are, for example, unable to demonstrate your credit history, making it almost impossible to obtain a fixed line broadband or a mobile phone contract.

In terms of age, deprived areas, which are defined as the worst 15% of data zones in the SIMD, in 2010 had higher levels of people under 15 years and over 65 years compared to the rest of the city (Freekie, 2012). In 2012 only 48% of Glaswegians owned their own home, while, in contrast, across Scotland nationally the figure is 60% (Glasgow City Council, 2011, p16). A higher proportion of Glaswegians lack formal qualifications compared to Scotland and the UK (Nomis, 2012). Finally, there are more single parent households in the deprived compared to richer parts of Glasgow (Freekie, 2012: 12).

Although the UK and Scottish governments have sought to improve access to and adoption of broadband through a variety of initiatives (Sutherland, 2011; Sutherland and Whalley, 2012 and 2013), digital divides are evident within the United Kingdom. Even though broadband is available in 99.87% of households across the United Kingdom (Ofcom 2012: 8), in Scotland uptake is only 70% (Ofcom 2013b: 8). Thus, not only does this mean that digital divides can be observed within the UK, but that in practical terms around 700,000 individuals in Scotland lack Internet access (Scottish Government, 2012b). Broadband adoption within Glasgow is even lower than that for Scotland at just 50% (Ofcom, 2013b, p30). Interestingly, the 'adoption gap' that occurs between Glasgow and the other UK cities included in the Ofcom studies exists across all social groups and ages (Ofcom, 2012a, p16).

While this is clearly of concern, there are two key implications for our analysis. Firstly, this affects the roll out of 'Digital by Default' for online public services (Cabinet Office, 2012). The government intends to migrate public service access online as a way of achieving savings of £1.2 billion by 2015. Secondly, the welfare system is also being changed, with the introduction of universal credit for the unemployed requiring Internet access to update and make online claims through the Department for Work and Pensions website (Alexander, 2012; Her Majesty's

Government, 2014). The availability of public Internet access is discussed in the following main section.

4. Public Internet access

In the UK libraries have provided public Internet access since 2002. Lottery funding totalling £120 m was provided to libraries across the UK to develop and install computer and Internet access (Big Lottery Fund Research, 2004). Part of the funding was also made available to train library staff. Although now a core library service, Internet access is just one of several services that libraries provide. The diversity and number of services offered ads to the strain on resources, although this has obvious benefits for the library service.

In Scotland, libraries are the responsibility of the Scottish Government, with, in turn, local authorities responsible for ensuring adequate provision (Scottish Government, 2011). The Scottish Library and Information Council (SLIC) is an independent advisory body responsible for public library standards. In their strategic plan they state that ‘‘Libraries are welcoming, free, safe and politically neutral public spaces’’, providing free books, information and learning (Scottish Library and Information Council, 2011). They also note how libraries provide support for ‘skills, employability and research’ to individuals and families alike.

Glasgow’s libraries are the largest public network of libraries in Scotland. The 33 libraries across the city are operated by Glasgow Life, a brand of Culture and Sport Glasgow, on behalf of Glasgow City Council. This arm’s length external organisation (ALEO) was created in 2007 and runs over 140 venues across the city and had a turnover of £117.2 m in 2011/12 (Glasgow Life, 2012, 41). The driving force behind the creation of the Culture and Sport Glasgow ALEO was cost savings, which have reached more than £35 million by 2012 (Culture and Sport Glasgow, 2012).

Glasgow City Council operates a number ALEOs. ‘Access’, which is run by Serco, is responsible for managing a number of the city council’s services including their information and communication technologies. Access is organised as a limited Liability partnership running for a decade (2008–2018), with the contract worth £265 million in total. Access has been tasked with achieving cost savings of £50 million over this period (Sotiropoulos and Duckworth, 2011). While cost savings are a key priority for Glasgow City Council, the use of partnerships like Access is not without its problems. Over the course of the contract technological obsolescence is a concern (Lidbetter, 2012), not least due to the rapid pace of technological change. Such obsolescence could result in libraries possessing out-dated technology, thereby negatively impacting on the services that they provide and the experience of users. Those who use public Internet may also act as a barrier to going discussed in the following sub-section.

4.1 Users

A survey of 38 'Citizens advice bureaux'[1] across Scotland showed that 45% of their clients who used a computer outside their home, did so at a public library (Beattie-Smith, 2013). Another 38% used a computer at a friend's or family member's house. Although the role of the library as a place to access the Internet is well established only 4% of Scots with home access use the library for Internet access (Ofcom, 2012b, p. 9). Highlighting further that it appears to be those without home access who are using the library Internet service.

There are many challenges ahead for libraries, not least because according to Gomez (2012: 66), users desire multiple things from their library – information, entertainment and socialisation. These needs can be satisfied by the Internet but libraries need to be 'relevant and cool places to go' (Gomez, 2012, p. 72) if they are to service the diverse needs of the population. However, in order to deliver such services it is necessary to understand who actually uses libraries for Internet access.

Those using the Internet in libraries may also use it elsewhere. Viseu et al. (2003, p. 4) found that 'public and private Internet access interweave and complement one another'. This makes it important to determine what other Internet access library users have, and their reasons for using the library.

WiFi is another way of providing public access to the Internet and some US cities have attempted to address digital exclusion by investing in city wide WiFi. Tapia et al. (2011) analysed three cities – Philadelphia, San Francisco and Chicago – finding that all failed to deliver a useful service to underserved communities. Free WiFi is used most by those already accessing the Internet in other places. Some Glasgow libraries provide WiFi and it is also widely available across the city in 350 'hotspots' (Yardley et al., 2013, p. 69). In Glasgow, however, the location of hotspots does not reflect the population distribution neither it is freely available (Yardley et al., 2013, p. 7). Cost and perhaps skills inhibit WiFi use for some.

4.2 Barriers and drivers of public Internet use

Barriers identified by Gomez (2012) include location and the inconvenient operating hours of libraries. Libraries are often not seen as a 'popular destination' with people choosing other places within the community to access the Internet (Gomez, 2012), especially if the other venues have well trained staff able to offer relevant assistance. Others (Bertot et al., 2008; DeMaagd et al., 2013; Jaeger et al., 2006; Rhinesmith, 2012) also identified the limited number of computers and restricted opening hours. Firstly the number of computers is discussed followed by opening hours and the quality of the service. Secondly the importance of training and support is discussed. Finally the drivers that can encourage people online are reviewed.

Glasgow's, libraries collectively have 633 computers for public Internet access (Glasgow Life, 2013a). This equates to a rate of 107 computers per 100,000 people, with just 18% of city libraries with WiFi. Table 2 shows different public access and WiFi rates.

[Insert Table 2 about here]

[1] CAB is Scotland's largest independent public advice network with 250 service points across Scotland. 38 bureaux took part in the survey (individual respondents =1181) over a one week period.

Public Internet provision varies by city. For example, library WiFi coverage in Manchester is 30%, almost double its nearest neighbours and Glasgow libraries. Glasgow has the most static libraries for the population of the city - 5.6 per 100,000 versus 3.6 for Philadelphia. However, Philadelphia has targeted public Internet access in areas of most need including neighbourhoods with the lowest household broadband uptake. While Manchester, has more computers per population they are concentrated in fewer venues, meaning some may have to travel to access public Internet.

In Glasgow's libraries public Internet access is limited to a maximum of 1 or 2h per day. This is substantially less than the self-reported use of 17 h per week (Ofcom, 2013b, p. 4). Moreover, the opening hours of libraries also place restrictions on users – Bertot et al. (2008) found that libraries in the United States were open, on average, 54.2 h per week, while libraries in Glasgow are open for 49.8 h. Only a third of Manchester's 23 libraries are open more than 45 h a week (Chartered Institute of Public Finance and Accounts, 2012). Although the opening hours of libraries in Glasgow would appear to be generous, they may not be convenient.

The quality of access, as defined by filtering, security and privacy could cause users to become disillusioned with public Internet access. Although legal content should be freely available (Chartered Institute of Library and Information Professional, 2005), Brown and McMenemy (2013) found that, 24 from 31 Scottish Local Authorities cited 'preventing access to illegal and/or inappropriate content' as a motive for filtering. Lack of privacy can also restrict users activities or may alter their preferences for using specific computers (Straubhaar et al., 2012, p. 174).

Support is required to encourage use of public Internet. For the inexperienced user this could come from using public Internet access or through their social network. Glasgow libraries provide assistance in two forms, basic training to get online and on-going ad-hoc support for (new) users. Communications Consumer Panel (2012) found that structured courses, taster sessions and well-trained dedicated staff are vital if libraries are to provide support to users. Staffs also need to be trained so that they are able to overcome the low self-confidence and unfamiliarity with ICT of some would-be users that Gomez (2012) identifies. Two-thirds of those surveyed by Beattie-Smith (2013) stated that they would need assistance to complete an online application form. According to Radcliffe and Winckler (2011) and White (2013), training and support needs to be community based and targeted to the needs of specific groups or individuals. While training can help users get onto the bottom rung of the 'opportunities ladder' (Livingstone et al., 2012), they could fall off this ladder later on if subsequent support is lacking, infrequent or inappropriate.

In addition to the barriers to public Internet use there are also a series of drivers that can encourage individuals to move online. Jayakar and Park (2011) argue that use can be encouraged by awareness raising campaigns, while Larose et al. (2012) suggest that social factors are important – friends and family may encourage the use of the Internet, as could use of the library for other services only to discover that Internet access was also available. White (2013) interviewed 200 people from deprived parts of Glasgow and found that 136 had never used the Internet, before arguing that the individual's attitude towards technology is a key factor in determining whether they will go online. Hargittai and Hinnant (2008), looked at the activities of 18–26 year olds to determine if Internet behaviour can have an effect on social mobility or benefit these users. They found that the skills reported by users were an important predictor of whether they used the Internet for 'enhancing activities' (Hargittai and Hinnant, 2008, p. 618). This highlights that self-confidence

and knowledge are important factors to some segments of the population in terms of going online.

5. Methodology

Demographic factors across Scotland are already mapped using census data and split into datazones with populations varying between 500 and 1000 residents. The datazones were created to standardise data releases and allow multiple sources to use a common geography (White, 2011). There are 6505 datazones across the whole of Scotland, with 694 of them located in Glasgow. Each Scottish Index of Multiple Deprivation (SIMD) datazone is associated with a number of postcodes (Scottish Index of Multiple Deprivation, 2011). We use SIMD data from December 2012. The index combines 38 indicators across seven domains: income, employment, health, education, skills and training, housing, geographic access and crime. The overall index is a weighted sum of the seven domain scores. Glasgow has 30% of the most deprived datazones in Scotland (Scottish Government, 2013a).

Fig. 2 shows the overall deprivation ranking based on the SIMD. Lighter areas are more deprived than darker areas, highlighting specific areas of the city as being particularly deprived and thus worthy of investigation. Public Internet access points in libraries in the north and east of the city are also highlighted. These areas of deprivation are also those areas most likely to have lower broadband uptake levels.

[Insert Figure 2 about here]

As the Scottish Household Survey asks whether respondents use the Internet (Hope, 2010), it is possible to use this data in conjunction with SIMD datazones to map differing levels of broadband adoption across Glasgow. There are 694 datazones in Glasgow, with the number of households varying between 10 and 100 in each case. These were grouped over the survey period (2009/2010) and the median value for each datazone calculated. Through this process it was found that low levels of broadband uptake were located in the north and east of Glasgow.

From SIMD data those datazones with a rank of less than 30 were used to determine where the data collection should occur. Three areas in Glasgow stood out as being particularly deprived, not least because they each contained two or more datazones with a SIMD deprivation rank below 30. The chosen areas were:

1. Possil / Milton
2. Cranhill / Easterhouse
3. Parkhead / Barrowfield

There are eight libraries in the target areas with public access to the Internet, some also offering free WiFi. Relevant details of the libraries surveyed can be found in Table 3. A survey of users of these libraries was undertaken. May (2008) suggests that surveys are useful in that they inexpensively and quickly provide data. The survey was undertaken in June and July 2013, with only those observed using the public library Internet computers being asked to participate. In all, 130 users across the eight target libraries were surveyed. In addition, participant observation was conducted in each of the libraries. This allowed information provided by participants to be triangulated with other sources.

[Insert Table 3 about here]

6. Findings

In this section, our findings are presented. After detailing the characteristics of our sample in Section 6.1, we go onto outlining their motivations for being online (Section 6.2) and what activities that they undertake online (Section 6.3). The final two sub-sections address the channels through which the Internet is accessed (Section 6.4) and whether or not the user is experienced (Section 6.5).

6.1 Who uses public Internet access in libraries?

Who uses the eight surveyed libraries? More males (69%) than females (31%) use the Internet, confirming the finding of Becker et al (2010, p32). Respondents ranged in age from 16 to over 65 years of age. Only 6% of the sample was over 65, with the largest number of respondents being in the 45 to 54 years of age range. Moreover, those using the Internet in the libraries tended not to have children at home. This is not surprising since it is known that those with children are more likely to have home Internet access (Dutton et. al., 2009; Selwyn, 2004).

Based on the postcode of each of the survey respondents, the overall SIMD rank and the percentage of income deprived for each datazone/postcode can be calculated. This is shown in Fig. 3. On average, between 25% and 45% of respondents are income deprived and all are in the lower ranks for overall SIMD. Thus, respondents are likely to be income deprived and live in areas of recognised (overall) deprivation, where broadband uptake is also lowest. This means that the libraries targeted do appear to serve their local community.

[Insert Figure 3 about here]

Also 18% (n=130) of those surveyed had clear affordability problems in relation to Internet access. Some became lapsed users because it ‘it was too expensive at home’, while others use a ‘pay as you go’ dongle at home if they have money to top up while yet more have intermittent access on their mobile but this depends on ‘if I have credit’ or ‘if I top up my phone’.

6.2 What motivates users to go online?

When users were asked about their attitude towards computers and the Internet, all saw them as useful tools. Perhaps surprisingly, two thirds of respondents stated that they trusted technology. Many users commented that the Internet was scary at first; one user stated that ‘you can get lost with all the jargon’ with another stating that it was ‘scary in terms of security’. Others were less concerned because they were careful regarding the information they shared and the activities that they undertook online in the library.

Users were asked if they worried about the safety, security and privacy of their information when using the Internet at the library. They were asked to rate their concern on a scale of one to ten, with one being concerned and ten no concerns. The majority of users (65%) had no concerns about privacy, with the most frequent response being 10. However, other users expressed some concerns: for example, one user stated that ‘the seats are too close together, no screens, so no privacy’. Some users book a specific computer allowing them some privacy when paying bills or using online banking, although such users were the minority. As Internet sessions are time limited, one issue that was raised by some users was that of waiting users

looking over their shoulders to see how long is left. This led some users to complain about the lack of privacy in general or to state their unwillingness to pay bills online at the library.

Just under half of users reported problems with blocked content, though just a third reported problems to staff. This is a hidden problem since 65% (n=51) of those who reported filtering problems kept it to themselves. Some commented that they 'didn't realise you could ask for a site to be released' or, more worryingly, 'would rather not annoy staff'. Parkhead library is where users appear least likely to ask for help, and Riddrie the most likely.

Most concerning is that some job websites were blocked, with several users stating that jobs in bookmakers, bars or some recruitment agency websites are blocked. As job applications were often required to be made through the company website, blocking the website meant that users could not apply for vacant positions as they came available. Libraries also block a broad array of popular websites including: the UK and Polish versions of Facebook, YouTube, tumblr, Marie Curie, community addiction safety website, party political websites (Labour party), webmail (Hotmail), the National Lottery, Gumtree and various men's health websites.

Although a wide variety of websites were blocked, the system is not fool proof as inappropriate content still appeared. One user in particular reported how searching online resulted in advertisements appearing at the edge of the screen that were sexual in character. The user was embarrassed and placed his hands over the screen to prevent the images from being seen by the children who were in the library. As this user was interested in gaming and gambling websites, this may partly explain why these inappropriate images appeared.

The level of Internet filtering at The Bridge is different from other libraries as the Internet service there is run by John Wheatley College and not Glasgow Life. This means users may receive a different experience and a different acceptable use policy (AUP).[2] The AUP at most Glasgow libraries is a single page, however, the one for The Bridge is several pages in length. Only two users mentioned the AUP, although several made comments like 'do not go onto certain websites' or 'it gives a warning if you try and get onto something.' Hence, some users are aware of the policy even if they do not know its name.

We also asked whether users are receiving appropriate support from library staff. The survey found that more experienced Internet users were less likely to need help using the computer – 71% (n=68) never asked for help. Those asking for help most often ask staff (90%), with others asking a friend. The majority of people only need help in a limited number of areas. Less experienced novice users are more likely to need help with software than any other type of user. Fig. 4 details the help required by users at the library.

[Insert Figure 4 about here]

Although some users experience problems, they have opted to go online. This raises the question as to why this is the case? Table 4a details where library users first used the Internet and what made them do so. Schools and homes are the most common first use locations. In terms of age (Table 4c), those whose first Internet use was at school, tended to be those under 45 years and were least likely to be novices.

[2] AUP is commonly used to show the rules applied when using a network, computer system or website, often as part of a legal statement.

Those who used the Internet first at a library or needed library training tended to be older, with no one under 45 years having attended library training. This highlights that the younger generation are exposed to computers and the Internet at school. Those who first used it at work are more likely to be very experienced users and over 35 years of age. For the older generation, who did not learn about the Internet at school or use it at work, the drivers to go online come from elsewhere.

[Insert Tables 4a, 4b and 4c about here]

When asked if there was something in particular that made them go online (Table 4b), 32% of respondents said information and learning. 'Economic factors', including job searches, were the second most popular driver to go online. Although at the moment it appears that some are being forced online through economic necessity, the responses of others raised other drivers: 'not really interested but in this day and age you have to', 'felt like I had to, job centre gave me the push but I didn't want to do it' and 'its mandatory to job hunt online' all highlight that going online is viewed as a necessity rather than as a choice. It is not clear whether such users will remain online over the long term, however, their use of the Internet does enable government cost savings through its digital by default strategy.

In terms of what or who made users aware of the Internet, users were asked to rate the importance of a number of factors. Work and government/job centre are important in getting online for all age groups except, understandably, those over 65 years. Friends are a more important influence the younger you are, with 58% of 16 to 24 year olds saying they were extremely or very important. For those over 55 years of age, more than three quarters said friends were not important in making them aware of the Internet. In addition, the older you are, the more important children become in making you aware of the Internet. Television and advertising are of least importance in making people aware of the Internet, although younger people were more likely to find this an important factor. Those under 34 years state that the family is important, falling to around a third for older age groups.

6.3 What do users do online?

Users were asked to choose, from a list of 24, which activities that they used library public Internet access for. Fig. 5 shows the popularity of various activities indicated by users. Search is the most popular, followed by e-mail and job hunting. This reiterates the importance of library Internet access for those job hunting, CV writing and undertaking training courses. While 73% of library users stated that they engaged in these activities, 45% (n=94) noted how these were the most important activity they undertook in the library.

[Insert Figure 5 about here]

Using Gomez's (2012) categorisation of activities, complemented by economic activities, we see that job searching is a significant online activity within libraries. In contrast, online banking and shopping is not. This is shown in Fig. 6. It is also worth noting that email and social networking websites are popular forms of online socialisation activity.

[Insert Figure 6 about here]

The time people spend online and the number of activities they do should be related (Ofcom, 2013c: 6). This relationship is shown in Figure 7. Those who use

public Internet access either rarely or once a month are online less than one hour and perform on average fewer (five or less) activities. These occasional users also tend to have the Internet at home. The most important activities for occasional library users are printing and job hunting. Those using the Internet one to three times a week perform an average of seven activities, have different levels of experience and use the Internet for longer. Those using it most frequently perform an average of 8 activities and are more likely not to have home Internet access.

[Insert Figure 7 about here]

6.4 Single or multiple ways to access the Internet?

For 28% of Internet users the library is their only means of access. Of those with another means of access, around half had access through one additional channel while around a fifth had access through two or three other channels.[3] The most common place for other access is a mobile phone with 81% saying they had Internet access in this way. There are also a surprising number of users - 56% (n=94) - who have access at home. Those who have access at home are also likely to have mobile access as well. People also use the Internet at college, university or at a friend or family member's house. In other words, there is ample evidence to suggest that the answer to the second question is that a majority of users have access to the Internet elsewhere in addition to the library.

One possible explanation for the prevalence of multiple access channels is that it reflects the capabilities of the channel – as one interviewee stated: I can use my phone for the Internet but it is not good enough for some things. Having said this, finances also play a role, with respondents switching between channels depending on their financial circumstances. The survey revealed that users visit the library for a variety of reasons. Sometimes the user lacked access to a printer at home, while for others it provided a quiet location to work or acted as a 'back up' method of accessing the Internet.

A majority of library users had used WiFi before, mainly on a mobile phone, although a few indicated having used a laptop or tablet. Bridgeton is the only library surveyed offering free WiFi access to library users. Many users were not aware that some libraries provided free WiFi access as they only visited their local library that did not have it. Users were asked if they would like public WiFi at their local library, with 38% (n=130) replying that they would.

The survey also explored the convenience of libraries for users. Almost four-fifths of those surveyed use the library closest to their home. Users opted for another library apart from the closest one for a variety of reasons such as their local one having too few computers or that they could access the Internet for longer in their preferred library. Other reasons for preferring a specific library were convenience for work, family or the job centre.

While public library access is free, registration is required (Glasgow Life, 2013b, 2013c). This means users need to be able to supply an address or some form of ID to become a library member. Users were asked whether they had ever been unable for whatever reason to access a computer. Over half of library Internet users (55%) report being unable to access a computer. This was mainly due to the library computers

[3] Home, work, mobile, cafe

being ‘too busy’. The worst library in this respect was Springburn where 77% of users experienced a problem, followed by Shettlestone (70%). Apart from Milton, where users had never experienced a problem, only two other libraries – The Bridge and Riddrie - had less than 50% of users experiencing waiting problems. Interestingly, users at Springburn specifically stated that the presence of training activities prevented them from using the computers.

How often users visit the library is also a factor. Almost half of users visit the library between one and three times a week (43%), with the majority of the others visiting four to seven times a week (34%). Those visiting one to three times a week are likely to enjoy shorter sessions of up to one hour, whereas those visiting more frequently use the maximum two hours available. There is even a small minority of eight people who visit libraries more than once a day and who use the computers and Internet, if possible, for two hours or more. Those using it the least frequently, once a month or rarely, use it for up to 30 minutes.

Respondents were also asked how important the use of libraries was to them and how they found the Internet there. More users thought the library was more important to them and their family for computers and the Internet (80%) than it was for books (70%). This is not surprising since only those using computers participated in the survey. However, it does indicate that those using the Internet are not using the library for other services. Novice Internet users were also the most likely to consider access to books important compared to intermediate and very experienced users. Only 44% (n=129) of users saw the library as an important gathering place. Those in the 45-54 age group saw the library as being important for Internet training, with those aged 25-34 finding it least important.

Most people reported finding out about Internet access because they were at the library borrowing books (38%, n=127), or through friends and family (28%). Probably due to recent welfare changes some (8%) found out about the presence of the Internet at the library from the job centre or benefits office. Given that at the time of the survey some of the proposed benefit changes had not come into effect, this figure is likely to rise significantly in future.

6.5 How experienced are users?

The survey also explored the skill level of library Internet users. Users were asked to rate their level of experience, and to indicate for how long they had been able to use a computer and the Internet. Those who graded themselves as very experienced had been using the Internet for more than 10 years. Interestingly the largest category using library Internet services were the experienced 53% (n=129). In contrast, only 14% (n=129) classified themselves as novice users with the final third being intermediate level users. There was little difference between libraries, with all categories of users in each of the eight surveyed. In terms of gender there was little difference between the sexes except for those who describe themselves as being a novice user. More males than females described themselves as being a novice.

7. Discussion

Through recounting the key findings from the data collected, the previous section has identified a series of issues that influence public library access and use. Socio-

economic characteristics are important in understanding Internet use. In our sample from deprived areas, more males than females used the Internet through a public library. As the users ranged in age from 16 to 65 years old, it would appear that older users are still not going online. Public library Internet use is most popular among the 45-54 age range.

The barriers for household broadband uptake could be considered as drivers for using public access, especially for those with a positive attitude who are predisposed to go online. Specific areas of the city have already been labelled as being areas of deprivation where residents of these areas suffer from multiple disadvantages. Living in an area of deprivation means you are less likely to become an Internet user. This echoes an earlier report from the United States that found neighbourhood characteristics did influence whether and how individuals accessed and subsequently used the Internet (Gordon et al., 2003).

Being from an area of deprivation makes it more likely that affordability will be an issue. Affordability has a positive effect on the use of public Internet. Although 28% of users only had Internet access through the library, with the rest having supplemental access either at home or somewhere else. Affordability also means that in these deprived areas intermittent access to the Internet, either at home or on a mobile, encourages people to use public Internet access. This intermittent access may be due to hardware problems, a lack of money, the temporary loss of a connection or not having a printer. Those without a printer, who are using library Internet as a mechanism for printing, tend to be those using for the shortest time and are the most experienced. It is worth noting, however, that Gordon et al. (2003) found that those living in low-income neighbourhoods in the United States were willing to pay for public Internet access through libraries. Moreover, they were prepared to pay proportionately more than those living in high-income neighbourhoods. Having said this, it is not clear why this is the case.

There is a positive effect of Internet use of the library being close to home or in a convenient location. This mirrors Gordon et al. (2003) who found that being far from a library deterred would-be users. In deprived parts of Glasgow libraries are clearly serving the local community, thereby highlighting the importance of geography and having Internet access where it is needed most. Having said this, it can be argued that deprived parts of Glasgow are insufficiently served by the number of libraries on the one hand and their computer provision on the other. The number of computers has increased – 402 were installed in 2000/2001, a figure that had increased to 475 by 2008 before reaching its present level of 633. Six libraries, mainly in deprived areas,[4] had some computers removed and redistributed, due to low demand. This resulted in reduction of Internet access in the areas where there was likely to be most need, if not demand. This demand issue also occurred with WiFi, which at around £2000 per library has to prove cost effective at each location where it is installed. Due to low demand and cost pressures the choice was taken to relocate the connectivity rather than to increase demand.

It is also worth noting that the headline figure of 633 computers is deceptive, as some of these are kept separate for training purposes and thus are not generally available for public use. Yet more computers are set aside for use by children after school hours and during holidays. This results in lower availability for adult public use than is reported. On average, a majority of users at the libraries surveyed experienced at some point being unable to go online.

[4] These libraries are Anniesland, Castlemilk, Drumchapel, Gorbals, Ibrox and Springburn.

The availability and nature of resources is a recurring theme in the literature. As technology becomes more pervasive
within libraries, the range of skills required by staff broadens in order for them to continue to be able to help library users (Arnason and Reimer, 2012). In addition to their 'traditional' skills, librarians also need to be technicians across a range of information technology hardware such as printers, photocopiers and computers. This places pressures on librarians, requiring them to be supported with training that may not be as extensive or as frequent as would be ideal. Without such training, which reflects among other things changes in information technologies, librarians will not be able to provide the support sought by library users.

If libraries are to provide Internet access to their patrons, they require equipment and connectivity (Jaeger et al., 2006). While commentators often place connectivity within a wider policy context that is not relevant to our analysis of Glasgow, they do highlight the need to provide sufficient connectivity to libraries for users to be able to access the online services that they seek (Jaeger et al., 2012; Mandel et al., 2010). Quite simply, Internet connectivity to each library needs to be increased so that users can access an ever more demanding series of online services. Without such increases, libraries users will be further disadvantaged.

Within the United States, the advent of e-government has created a demand for Internet public access through libraries (Jaeger et al., 2006; Jaeger et al., 2012; Sin, 2011). This is also true for Glasgow, where three key activities – 'digital by default', universal credit applications and the need to provide evidence of job searches – are pushing individuals to access the Internet. This push increases the demand for library based Internet access, thereby raising the need for additional resources – staff, training, computers etc. – to be provided. Although the demand for library access has increased, additional resources have not been forthcoming within Glasgow. Not only has this placed increased demands on staff, but users also suffer a lower quality of service than would otherwise be the case.

Library users may be encouraged to access the Internet through friends, family or training. Arguably that no one under 45 years of age in the sample has attended a training session is surprising, especially given the prevalence of relatively sophisticated tasks – job searches or accessing local government resources – among the most common online activities undertaken by our sample. It is also surprising when other issues like privacy is taken into account. While users in Glasgow were concerned about privacy, this was physical privacy, that is, the space between each computer. Online privacy was less of an issue to library users in Glasgow. This starkly contrasts with Hargittai and Litt (2013), who found that privacy was important to those searching online for employment opportunities.

It is not clear why Glaswegian library Internet users are not that interested in privacy. Conceivably users may not be aware of the issue, though the presence of privacy related headlines across a range of media over a protracted period of time suggests another interpretation, namely, that users may be aware of the issue but not its implications for them. A more plausible explanation may emanate from the perception by many that libraries and their staff are trustworthy. Users could be assuming that their best interests, which in this case is their privacy, are being looked after by the library and its staff. As these are only possible explanations for the lack of interest among library users in Glasgow, further investigation of this issue
is necessary.

Online employment searches are just one of the diverse array of activities that library users of the Internet in Glasgow undertake. This further compounds the

difficulties of libraries supporting users – quite simply, staff need to be proficient in a number of areas if they are to provide the support sought by users. The range of activities that users in Glasgow engage in online corresponds, broadly speaking, with the range identified by Gordon et al. (2003). However, unlike them, it is not possible to distinguish within our sample online activity by income. This throws into question the strategy that is being developed within Glasgow. By not fully understanding the demands and motives of users, a largely passive approach has been adopted by libraries when it comes to responding to the demands placed on them. This passive approach partly explains, perhaps, why Glasgow has been left behind in terms of broadband uptake. It may also result in the inefficient allocation and use of resources.

Implicit within our exploration of the role played by public libraries in providing Internet access within Glasgow is the recognition that their role is changing. In a rather short but provocative comment, Cronin (2002) argues what a library is not – it is not, for instance, a place for homeless people or a dumping ground for children after school. While it is acknowledged that social inclusion may be a 'noble goal and sound public policy', Cronin (2002) asserts that this should not be at the expense of traditional ways of behaving in libraries. Gehner (2010) challenges this narrow view of the role of libraries, arguing, among other things, that while libraries address the symptoms of societal problems – low income, lack of after school child care, homelessness and so forth – the underlying causes, which are outside the remit of libraries, also need to be tackled.

Preserving, or perhaps more accurately, returning to the libraries outlined by Cronin (2002) is no longer possible within Glasgow. Library patrons are more likely to access the Internet than they are to borrow or read a book, and when online they engage in a broad array of activities. Those libraries located in areas of deprivation, like those in our sample, will attract users with low incomes or who are homeless, but this is also arguably the case for libraries located in more affluent parts of the city. Across Glasgow, the role of libraries is changing – libraries provide their 'traditional' services but they also facilitate Internet access and act as a focal point for community based activities. Not only does this reflect the changing nature of society, but also how access to information or services is increasingly digital rather than physical. The library located at The
Bridge epitomises the changes that are occurring, combining as it does a library with a college, theatre and leisure centre. In other words, libraries are evolving into multi-activity locations.

As libraries evolve into multi-activity locations, a more complex set of interactions between stakeholders emerges that requires active management. While Jaeger et al. (2012) discuss partnerships within the United States in terms of differing levels of government – local, state and federal – the interactions within Glasgow relate more to those between the different providers of public sector services. These interactions are a relatively new phenomenon with the consequence that it is not clear how they will develop. Libraries may become the focal point for the delivery of a range of public services, especially those that are information intensive, thereby requiring changes to the physical infrastructure, the number of staff that work within them and the range of skills that they possess. Even if libraries host a narrower range of services, changes will still be required.

Partnerships are needed between librarians and those parts of government that increasingly rely on digital means to access their services. While all services should be available in every library, the uneven geographical distribution of key groups like those on low income or the unemployed across Glasgow will result in the role played

by some partners being more prominent in some areas than in others. In, for example, areas of higher unemployment, Job Centres may be a more prominent library partner than in those areas where the population is elderly or more affluent. Managing these different partnerships adds to the challenges faced across the city.

8. Conclusion

This exploratory paper examined public Internet access in Glasgow. The paper began by summarising relevant literature and the experience of cities elsewhere before outlining the methodology adopted to collect primary data from library users. These library users were from eight different libraries located in three deprived parts of Glasgow. From the analysis it is possible to draw a series of conclusions regarding the role of libraries as places providing public Internet access.

The first conclusion that can be drawn is that libraries are constrained by limited resources, in terms of both staff and money. Although libraries are often the only place where residents of deprived areas can access the Internet without financial cost, they have not received the necessary investment for them to ensure that users can initially access the Internet and then be provided with the necessary support. One constraint relates to the organisational structure adopted by Glasgow City Council, while another is the more general budgetary constraint being faced throughout the public sector. These constraints limit service provision and prevent much needed Internet demand building activities. There is a catch 22 situation where it is recognised that more people need to get online but a lack of support for libraries to address this.

These constraints give rise to a second conclusion, namely, that those who use the libraries to access the Internet are arguably disadvantaged compared to those who access through other means. Without the requisite levels of support, from library staff as well as friends and family, they will not be able to maximise the benefits that accrue from online activities. Given that those within the sample live within deprived areas of the city, this lack of support would appear to perpetuate their disadvantaged position in society. This has clear implications for social cohesion on the one hand, and social mobility on the other.

Related to this point is a third conclusion that the role of libraries is changing – once libraries were solely associated with books, but now they provide multiple services. While this maintains the position of libraries in their communities, it exacerbates the resource challenges faced by libraries and elevates the need to ensure that staff are appropriately trained. It also raises the issue of how to ensure that one community of users is not privileged over others.

While these conclusions echo findings elsewhere, primarily in the United States, they also suggest areas where further research is needed. The research could be extended to include the more affluent users of libraries, both from within deprived areas of Glasgow as well as from the richer parts of the city. This research would explore whether users of libraries located in the more and less affluent parts of the city undertake the same or different set of activities.

Once we understand what activities library users undertake online, a second, more strategic, area of further research emerges. Quite simply, how can libraries meet the demands of their users given the environmental constraints and challenges that they face? While this second area should be informed by our understanding of developments elsewhere, primarily from the United States, it must also reflect the

context within which Glasgow is located. UK-wide schemes to encourage the move of individuals online, such as GoOn UK, do not appear to be active in Scotland, but at the same time neither do Scottish initiatives. What has happened in Scotland is that numerous small scale or localised initiatives have been under- taken. Further research could examine the extent to which these have been successful, have learnt from one another or have shaped the political debate.

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Table 1: Barriers to household Internet use

Barriers	Type		Likelyhood to use the Internet	Details	Supporting reference
Demographic	Age	Older		Older people are less likely to use the Internet	Ofcom (2013b); Scottish Government (2012)
	Ethnicity	Minority		African and Hispanics Americans are less likley to have broadband	Larose et.al (2012); Prieger & Hu (2008)
	Gender	Female		Although SHS (2012) reported no gender difference in Internet use, others have found that men use the Internet more than women.	Dutton et.al. (2007); Scottish Government (2012)
	Children in house	No		Presence of children increses contact with ICT	Dutton et. al. (2009); Selwyn (2004)
	SIMD	Lower		Among the 15% most deprived in Scotland, over a third did not have access to the Internet	Scottish Government (2012)
Education and Skills	Use at work	No		Not using the Internet at work means that it is less likely to have the Internet at home	Selwyn (2004)
	Technology and equipment skills	Low		Non-users more likley to point to lack of skills as the factor preventing them from going online.	CCP (2012); Dutton et.al. (2007); Scottish Government (2012)
	Education	Basic		Poor education barrier to accessing learning resources online	Helsper (2008); Eynon (2009)
	user percieved Internet skills / technology confidence	Low		The more skilled, do more online activities	Cheong (2008); Hatgittai and Hinnant (2008)
	Internet experience	Shorter		Longer use of the Internet increases likelyhood of using it for e-learning.	Eynon (2009)
Economic	Employed	No		The unemployed are less likley to use the Internet	Helsper (2008)
	Income	Lower		Internet use increases with Income	Scottish Government (2012)
	Socio-economic status	Low		Lower socio-economic groups are associated with less broadband uptake	Ofcom, 2013b: Helsper, 2008: Lee, 2008
Social	Proxy use	Yes		The friends and family of potential users go online for them	Ofcom (2012a); White (2012)
	Percieved advantages / priority	Low		Low priority due to failure to percieve benefits of being online	CCP (2012)
	Structure of social networks / social influence	Low		Friends and family encorage individuals to subscribe and go online	CCP (2012); Crang (2006); Dwivedi et.al. (2009); Rogers (2003)
	Interest in technology / motivation	Low		Tenacity and determination, including recognition of multiple benefits, increases likelyhood to use the Internet	CCP (2012)
	Fear of technology	High		Fear of technology is a barrier for those less digitally engaged	CCP (2012)
	Attitude	Negative		A majority of those with a positive attitute to the Internet, were online	DiMaggio et.al. (2001); Eynon (2009); Verdegem and Verhoest (2007)
	Peer effects	Low		Family dynamics can lower confidence, pressuring individuals not to go online	Agarwal et. al. (2009); CCP, 2012
	Family conflict / others in household use	High		Use of computers by children can displace that of adults	Selwyn (2004)
	Pressure to conform	Low		The fear of being excluded can increase the likelyhood of going online	CCP (2012)

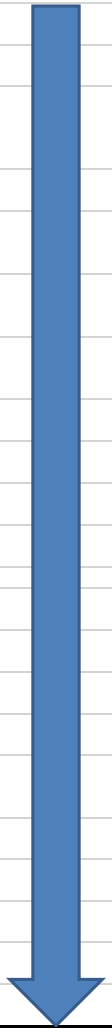


Table 2: Number of computers per 100,000 population

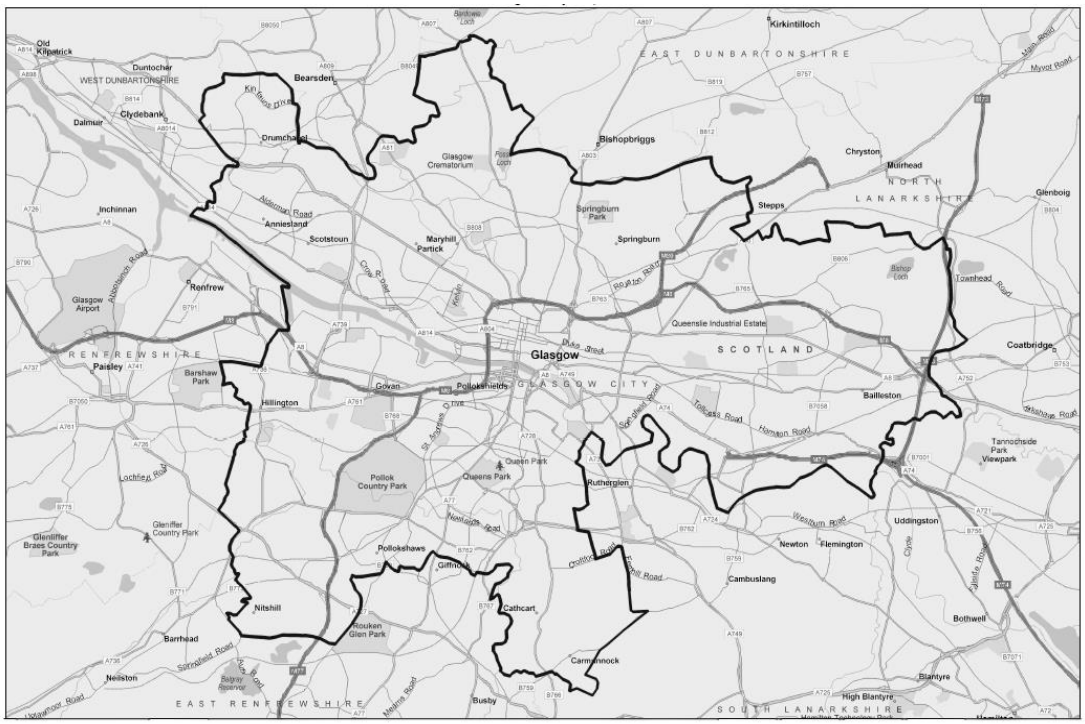
	Glasgow	Manchester	Manchester's nearest 16 neighbours average[1]	Philadelphia
Population	590,000	502,900	394,950	1,500,000[2]
Number of static libraries	33	22	22	55
Number of static libraries per 100,000 population	5.6	4.4	5.3	3.6
Library computers per 100,000 population	107	120	69.8	55 (includes multiple public access centres)
% of WiFi at public libraries	18%	30%	18%	No data
Computing costs p.a. per 100,000 population	No data	£1,628	£450	No data

Notes:

1. These 16 authorities included Newcastle upon Tyne, Birmingham, Liverpool and Leeds
2. From http://www.usa.com/philadelphia-pa-population-and-races.htm, accessed 30 May 2013.

Sources: compiled by the authors from a variety of online sources and library reports.

Figure 1: Glasgow city and the local authority boundary



Source: http://www.istanbul-city-guide.com/map/united-kingdom/glasgow-map.asp, accessed 14th Nov 2012

Figure 2: SIMD overall deprivation for Glasgow city, with library locations marked

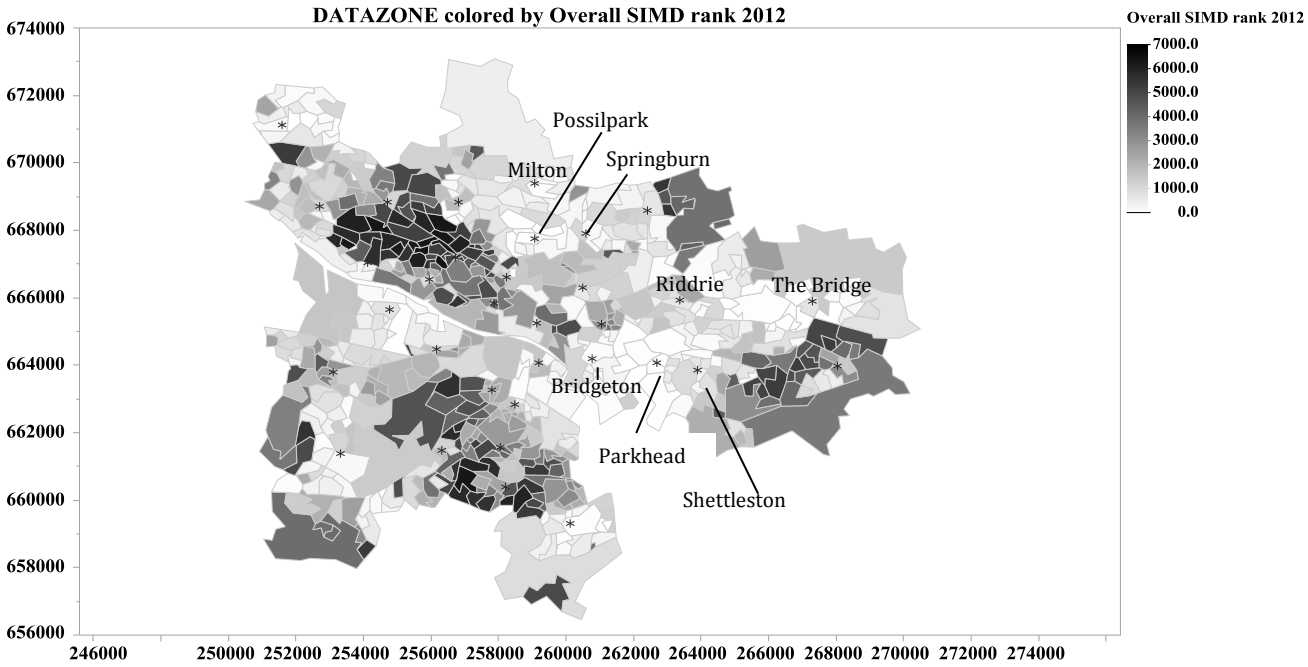


Table 3: Area and library information

Area	Library Name	Postcode	SIMD 2012 rank[1]	WiFi (Y/N)
Possil / Milton	Milton	G22 7QR	50	N
	Possilpark	G22 5JJ	3	N
	Springburn	G21 1JY	167	N
Cranhill / Easterhouse	Riddrie	G33 2QF	645	N
	The Bridge	G34 9JW	739	Y
Parkhead / Barrowfield	Bridgeton	G40 2QH	77	Y
	Parkhead	G31 4XA	34	N
	Shettleston	G32 7AX	449	N

Note

1. The lower the number, the more deprived the area.

Figure 3: Overall SIMD and percentage income deprived values for library sample (n=130)

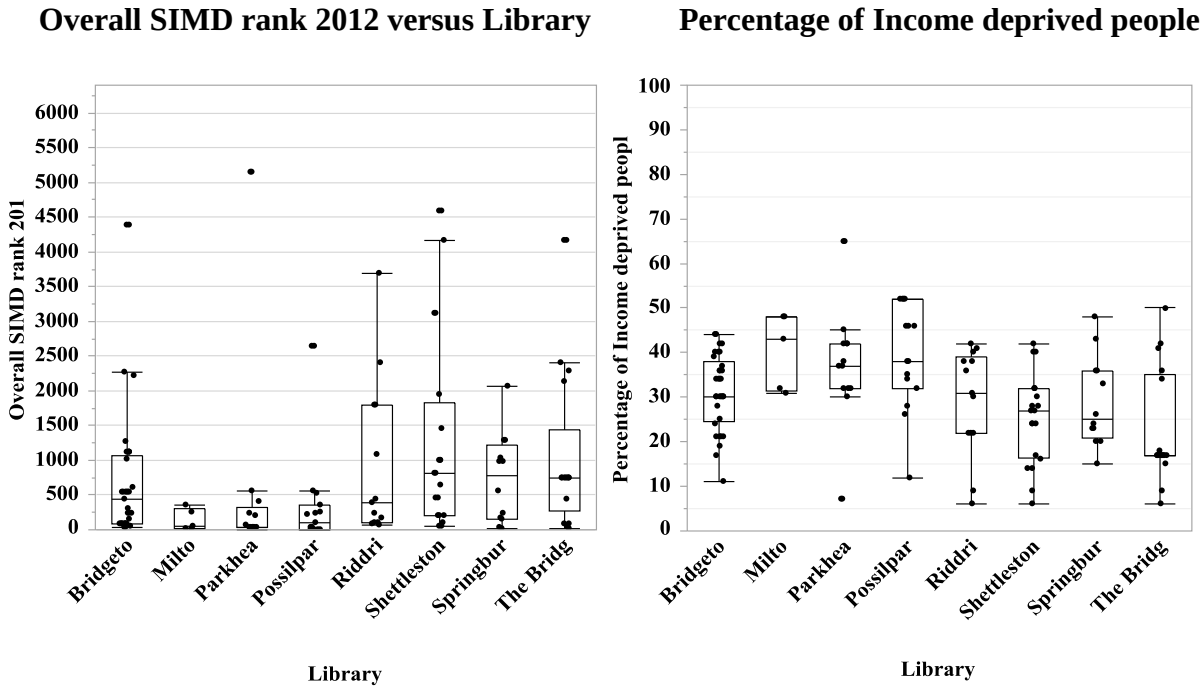


Figure 4: Type of help required by users at the library

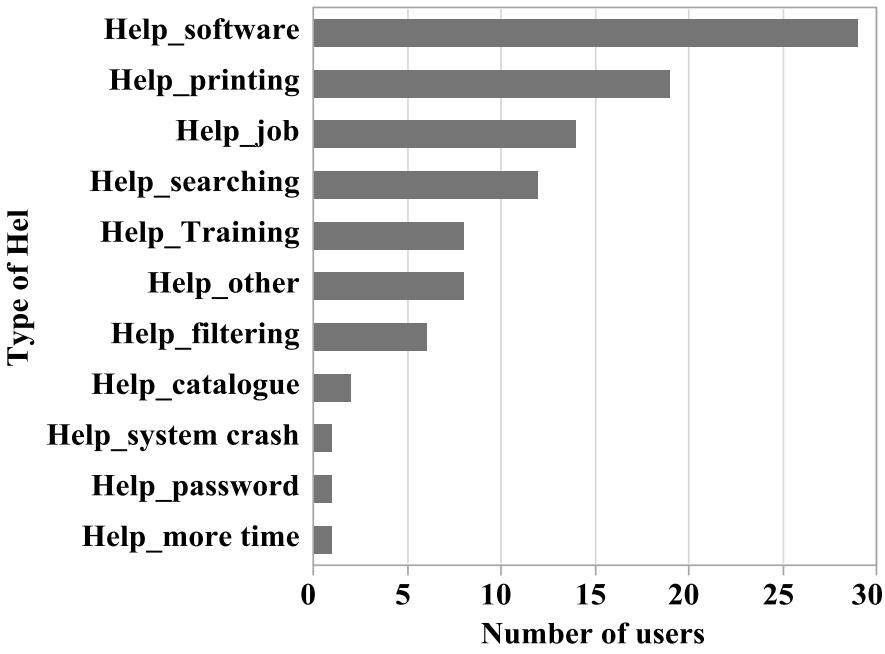


Table 4: Using the Internet

Table 4a: Where the Internet was first used (n=129)

First used	**Per cent**
School/college	29%
Home	26%
Library	14%
Work	12%
Friend's house	8%
Library training session	6%
Other	3%
Job training	2%

Table 4b: The interest that motivated the first use of the Internet (n=116)

Particular interest	**Per cent**
Information and learning	32%
Economic	27%
Socialisation	22%
Entertainment	14%
Economic, information and learning	3%
Multiple reasons	3%

Table 4c: Where the Internet was first used by age (n=116)

		Age					
First used (%)		**16-24**	**25-34**	**35-44**	**45-54**	**55-64**	**>65**
	home	21	26	12	24	12	6
	friends house	0	20	30	30	20	0
	job training	0	0	67	33	0	0
	work	0	0	20	54	20	7
	school/college	41	30	16	5	3	5
	library training	0	0	0	63	13	25
	library	6	11	22	33	22	6
	other	25	25	50	0	0	0

Figure 5: Activities of Internet users at eight of Glasgow's libraries

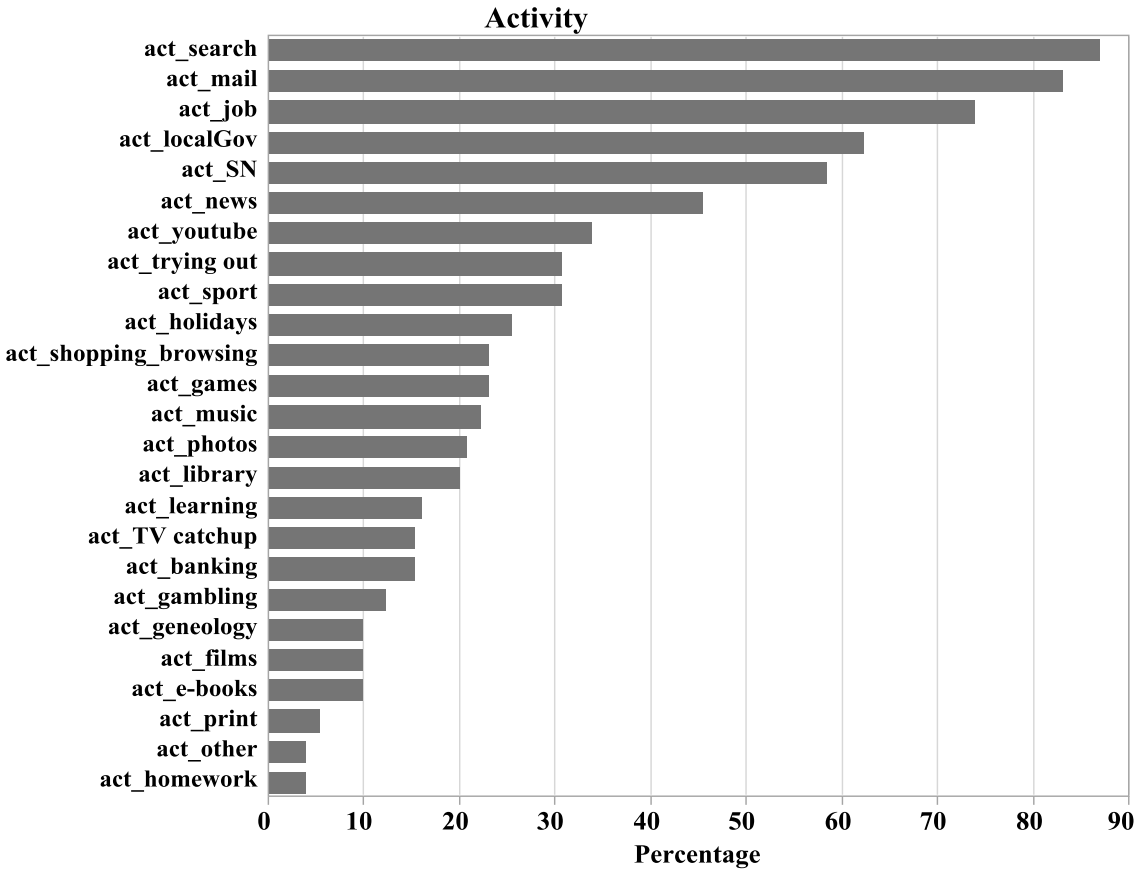


Figure 6: Type of activities

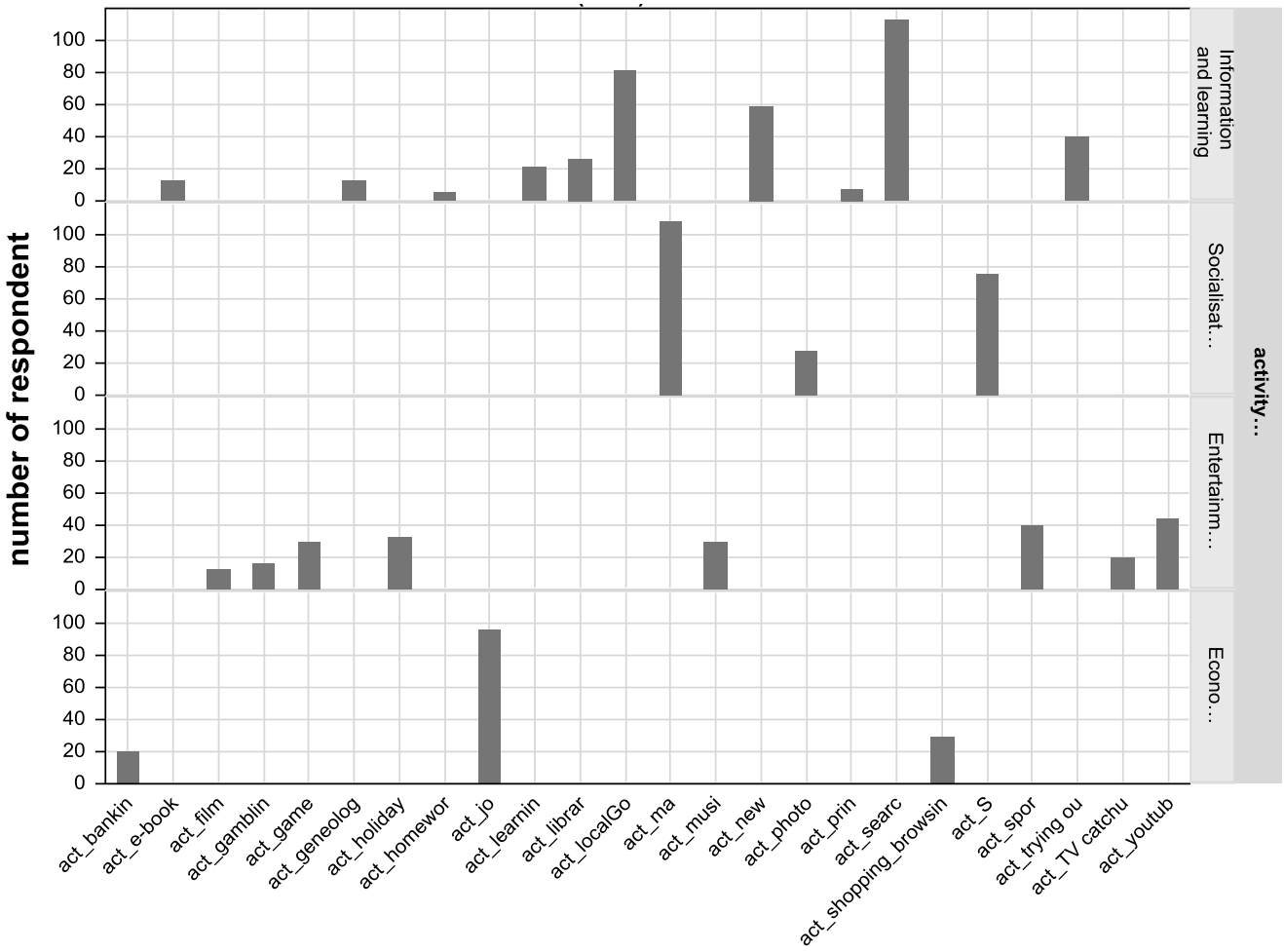
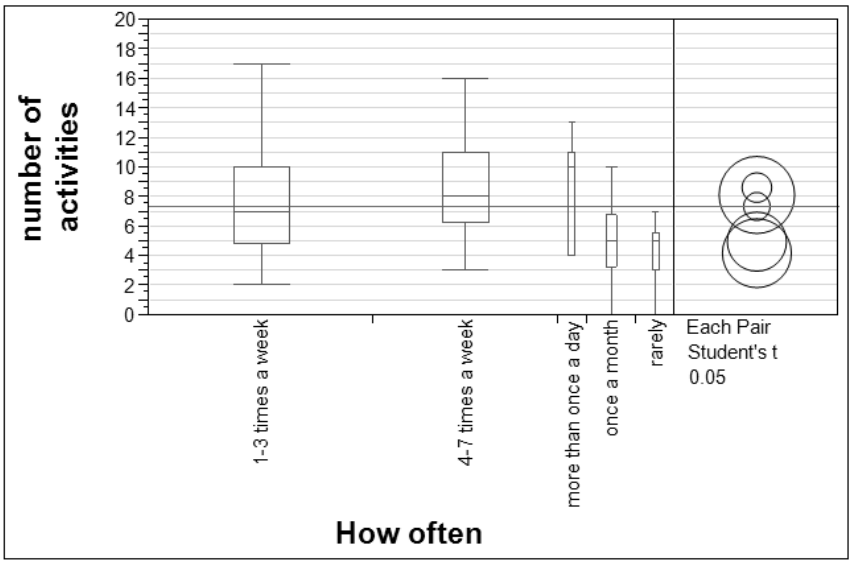
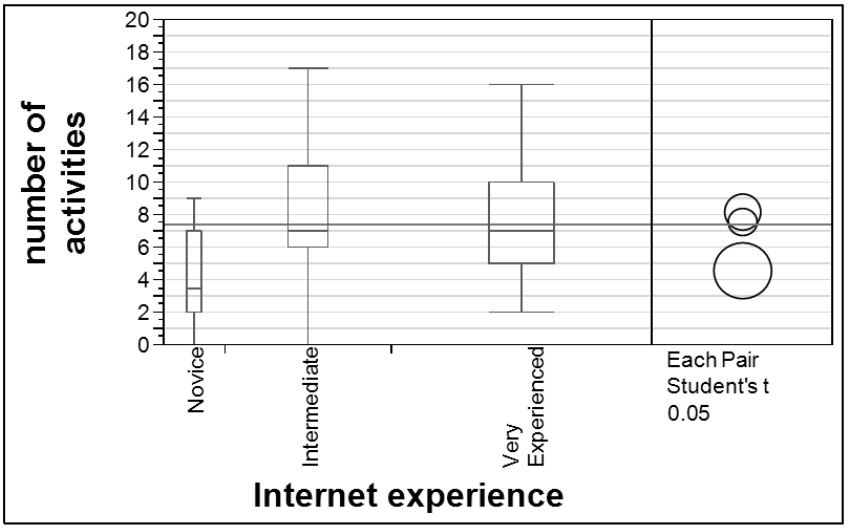



Figure 7: Number of Internet activities based on how often visited library and Internet experience