

Indicators of Internet Use and Engagement

2018 Internet User Classification (IUC) User Guide

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1 Introduction

The 2018 Internet User Classification (IUC) is a bespoke classification that describes how people living in different parts of Great Britain interact with the Internet. Engagement with the Internet has an obvious impact on consumer behaviour, such as the use of brick-and-mortar retail relative to online shopping. However, it also has an important influence on the take-up of digital services provided by the public sector. Understanding this geography is critically important to mitigate digital inequality, and products such as the IUC provide a means of targeting interventions necessary to ensure smooth transitions to digital service use at the local level.

The 2018 IUC provides coverage for Great Britain at the LSOA (for England and Wales) and Datazone (for Scotland) level. It has been developed in order to update and expand to the previous (2014) IUC and as such includes wider and more comprehensive data, built from a range of consumer, survey and open data collected by the CDRC.

2 Methodology and Data

Input data for the 2018 IUC includes the *British Population Survey* (BPS), supplied by *DataTalk*, which provides, among other, behavioural characteristics of the population regarding various aspects of Internet use. Online retailers provide transactional data for the online shopping behaviour of populations. These datasets are supplied by the CDRC and are available for access through its secure facilities. Infrastructure characteristics, such as average download speed per postcode, were supplied by *Ofcom*. Finally, administrative and Census data from the *ONS* were used as secondary data in order to train models providing predictions at the small-area level.

The creation of the 2018 IUC requires a number of variables to be computed at aggregate levels for the 42,729 LSOAs in Great Britain. Attributes for which complete LSOA coverage is available can easily be computed and included in the classification as direct measures. Such measures are annual transactions per person from online retailers and infrastructure characteristics. The majority of attributes regarding online behaviour however are based on the BPS survey, so aggregate measures on Internet use and engagement at the neighbourhood level were calculated using a number of techniques collectively known as *Small Area Estimation* (SAE).

For the creation of the IUC a mixture of spatial microsimulation and area-level SAE models is used, however instead of a conventional regression-based statistical model, machine learning and in particular *gradient boosted decision trees*, are applied to model covariates at the small area level. Estimation is based on a number of common attributes between the BPS and Census variables. The following summarizes the key methodological steps used in the creation of the IUC.

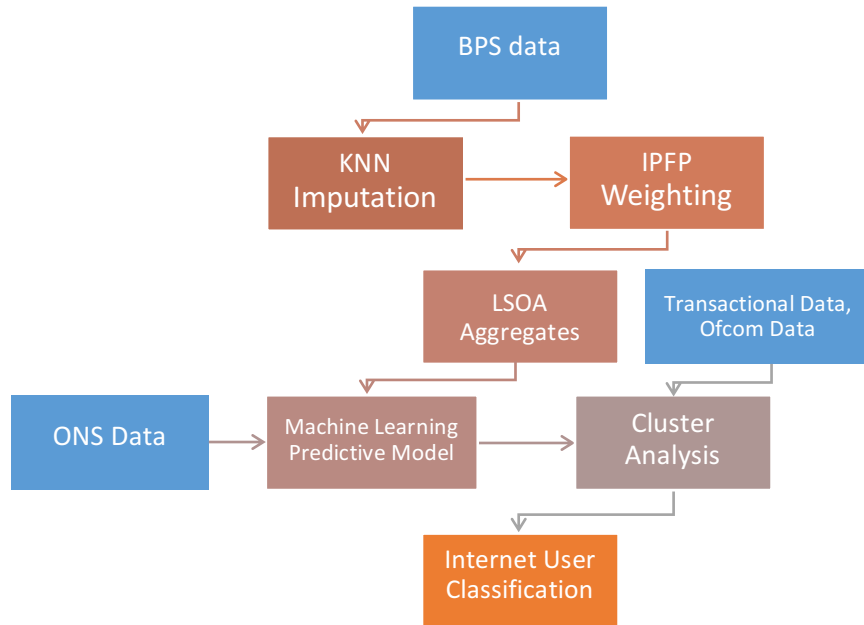


Figure 1. The methodological steps followed in the creation of the IUC.

A more detailed account on the methodology and data used to create the IUC is scheduled for publication soon.

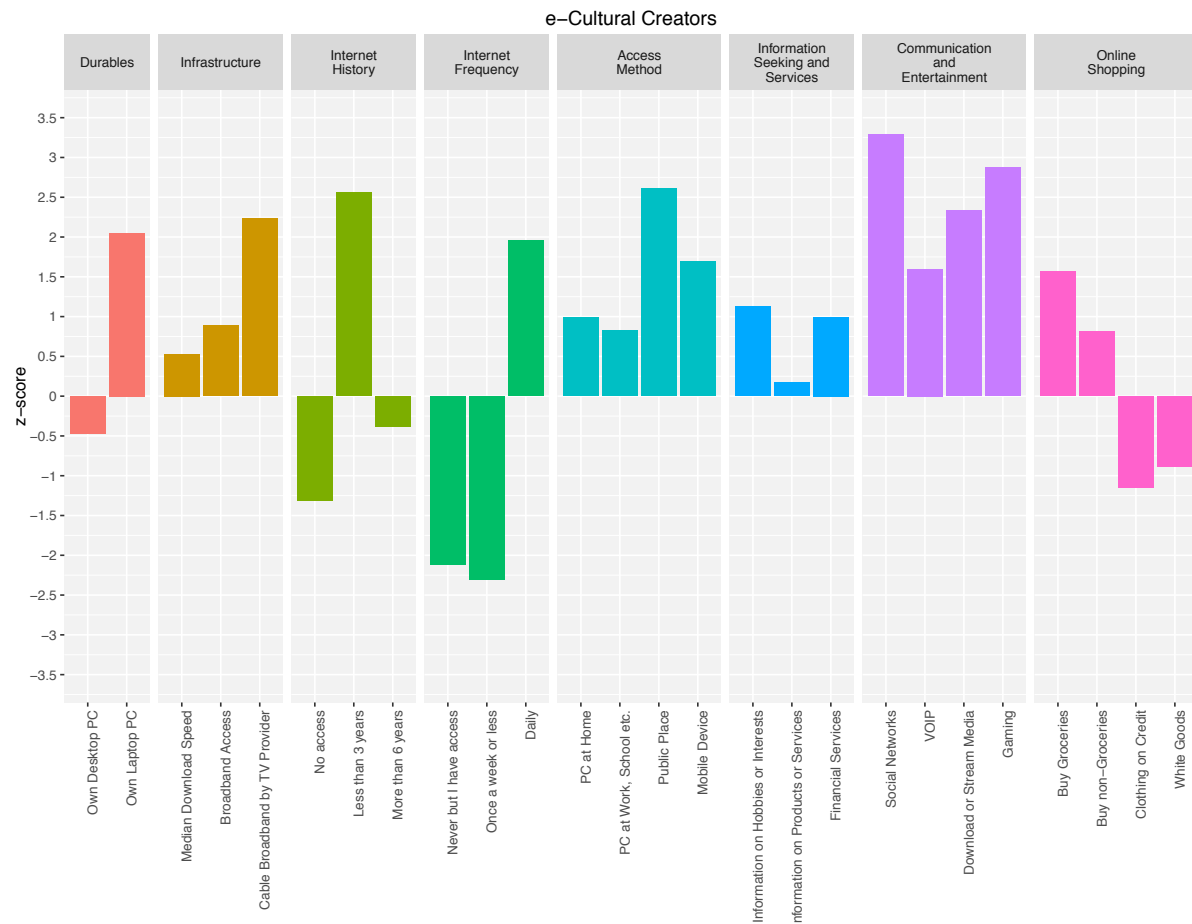
3 IUC Profiles

The IUC provides 10 unique profiles of neighbourhoods based on a number of characteristics, the mean attributes of which are summarized below.

Table 1. IUC Groups

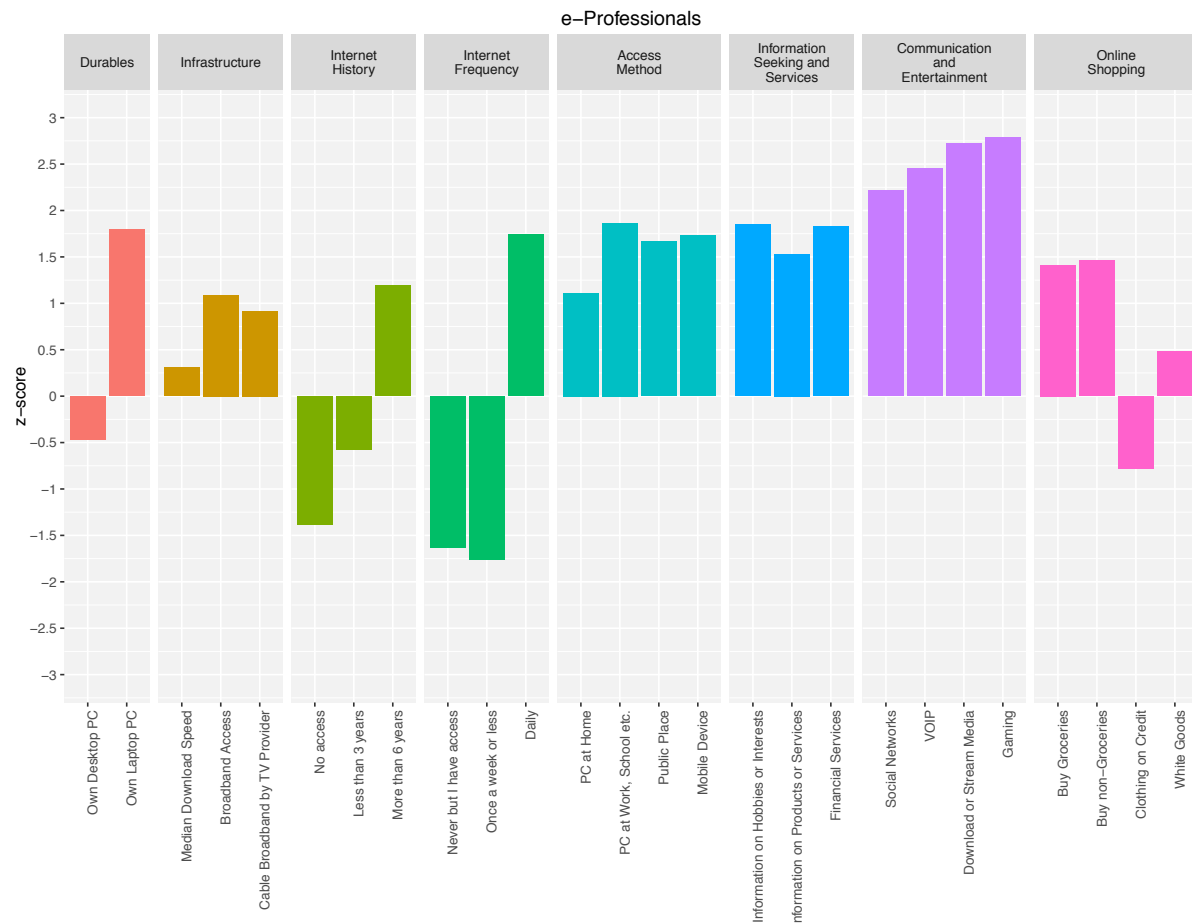
Group Code	Group Name
1	<i>e-Cultural Creators</i>
2	<i>e-Professionals</i>
3	<i>e-Veterans</i>
4	<i>Youthful Urban Fringe</i>
5	<i>e-Rational Utilitarians</i>
6	<i>e-Mainstream</i>
7	<i>Passive and Uncommitted Users</i>
8	<i>Digital Seniors</i>
9	<i>Settled Offline Communities</i>
10	<i>e-Withdrawn</i>

Group 1. *e-Cultural Creators*



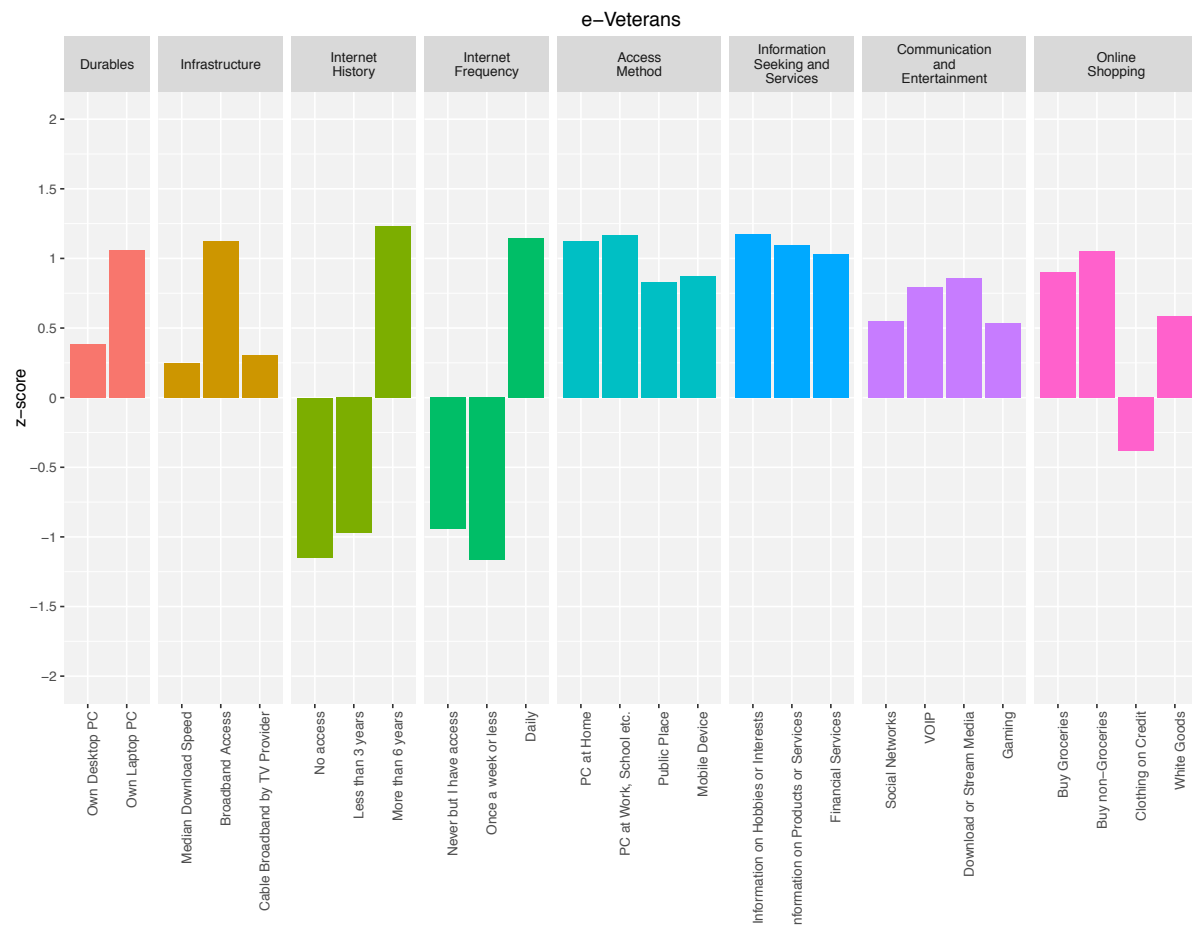
This Group has high levels of Internet engagement, particularly regarding social networks, communication, streaming and gaming, but relatively low levels of online shopping, besides groceries. They are new but very active users, with a very high proportion of the population engaging on a daily basis. Their online behaviour can be explained by a demographic base that suggests a transitional nature; the age structure of the Group is young, typically aged between 18 to 24, and with a strong presence of multicultural and student populations. They have a well-above average ownership of laptop devices, and an above average Internet access via mobile and at public places. Geographically, this Group is mainly located close to the city centre or within the proximity of Higher Education Institutes, where infrastructure accessibility, such as cable broadband, is sufficient.

Group 2. *e-Professionals*



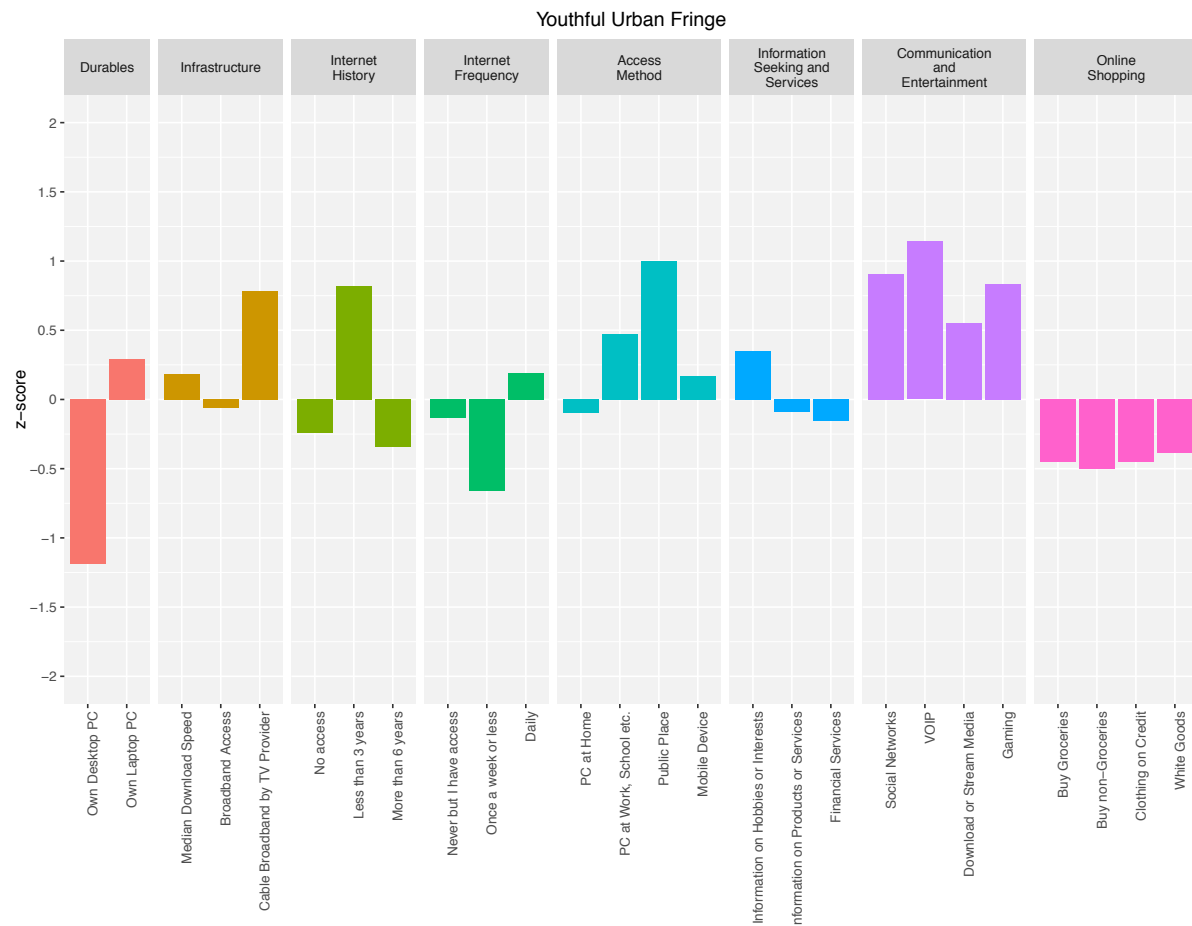
The *e-Professionals* Group have high levels of Internet engagement, and comprises fairly young populations of urban professionals, typically aged between 25 and 34. They are experienced users and engage with the Internet daily and in a variety of settings. While communication and entertainment activities are very common, they tend to favour entertainment, such as gaming, more than social networks. They also carry out a significant portion of shopping activities online, particularly for non-groceries, and they use a variety of devices and methods to access the Internet. This Group is ethnically diverse, with a very strong representation of white, non-British populations. They are well-qualified and have very high availability of Internet at work. This Group tends to be found at in residential areas abutting city centres or within affluent suburbs.

Group 3. *e-Veterans*



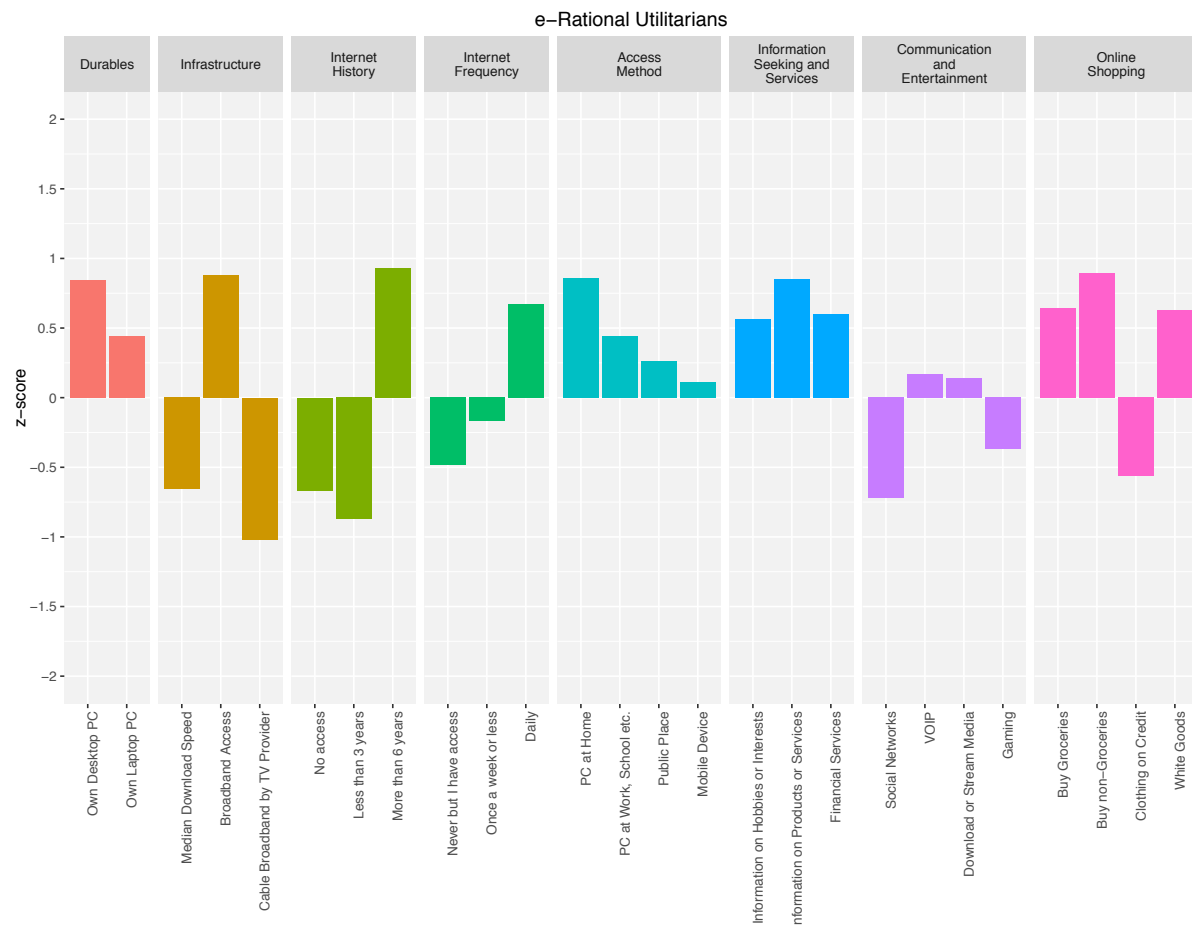
The e-Veterans Group represents affluent families, usually located within low-density suburbs, with populations of mainly middle-aged and highly qualified professionals. They are more likely to be frequent and experienced users of the Internet, having the second highest levels of Internet access at work after the *e-Professionals* users. They engage with the Internet using multiple devices and in a variety of ways. They are fairly mature users and as such they have higher levels of engagement for information seeking, online services and shopping, but relatively less so for communication and entertainment, particularly social networks or gaming.

Group 4. Youthful Urban Fringe



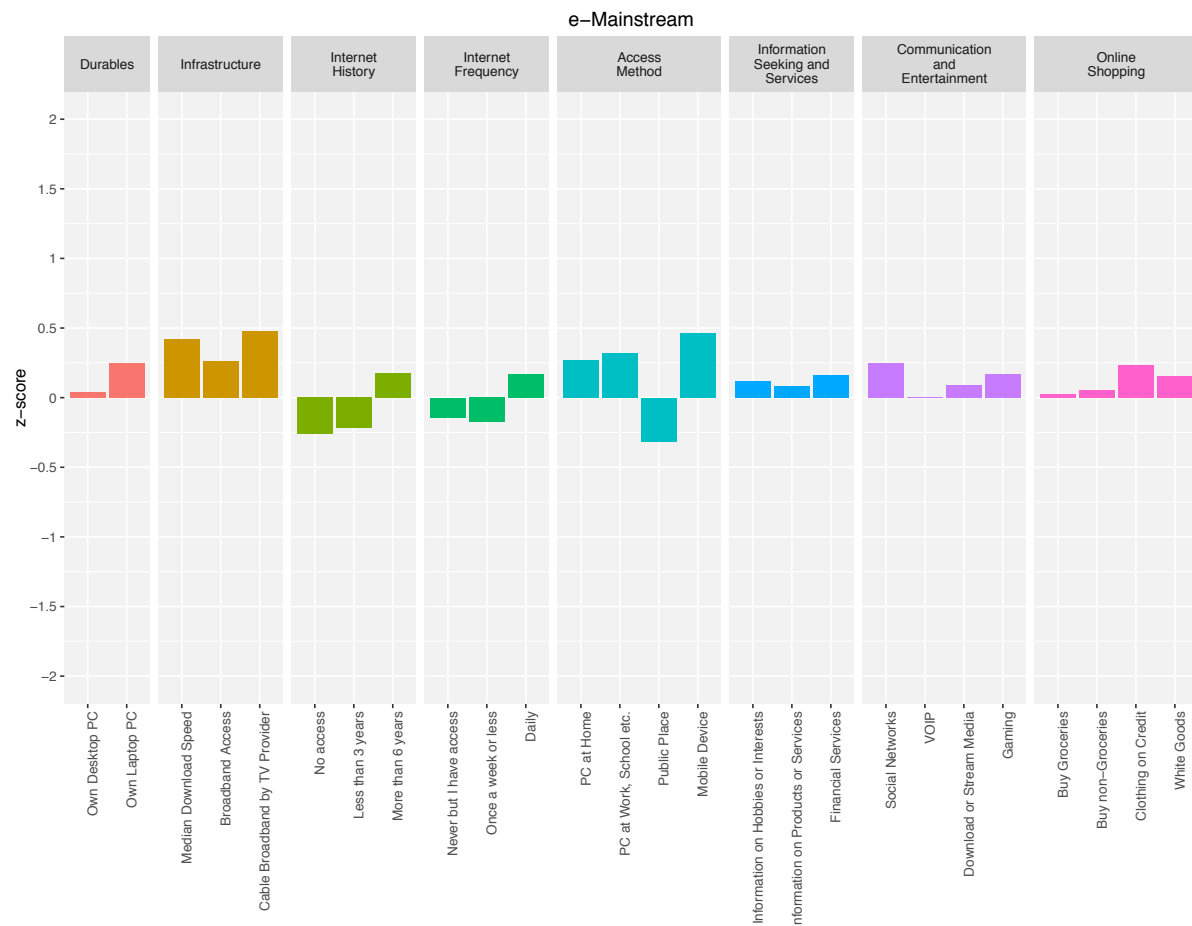
This Group often resides at the edge of city centres and are often young and drawn from ethnic minorities. These include a mixture of students and other young urbanites living in informal households, often at the edges of materially deprived communities. Access through desktop devices is particularly low, suggesting a young and mobile profile of individuals. Access to broadband is average, possibly due to other modes of access, such as Internet usage in public places. The levels of Internet engagement are average over-all, with high levels of social media usage but low patronage of online retailing.

Group 5. *e-Rational Utilitarians*



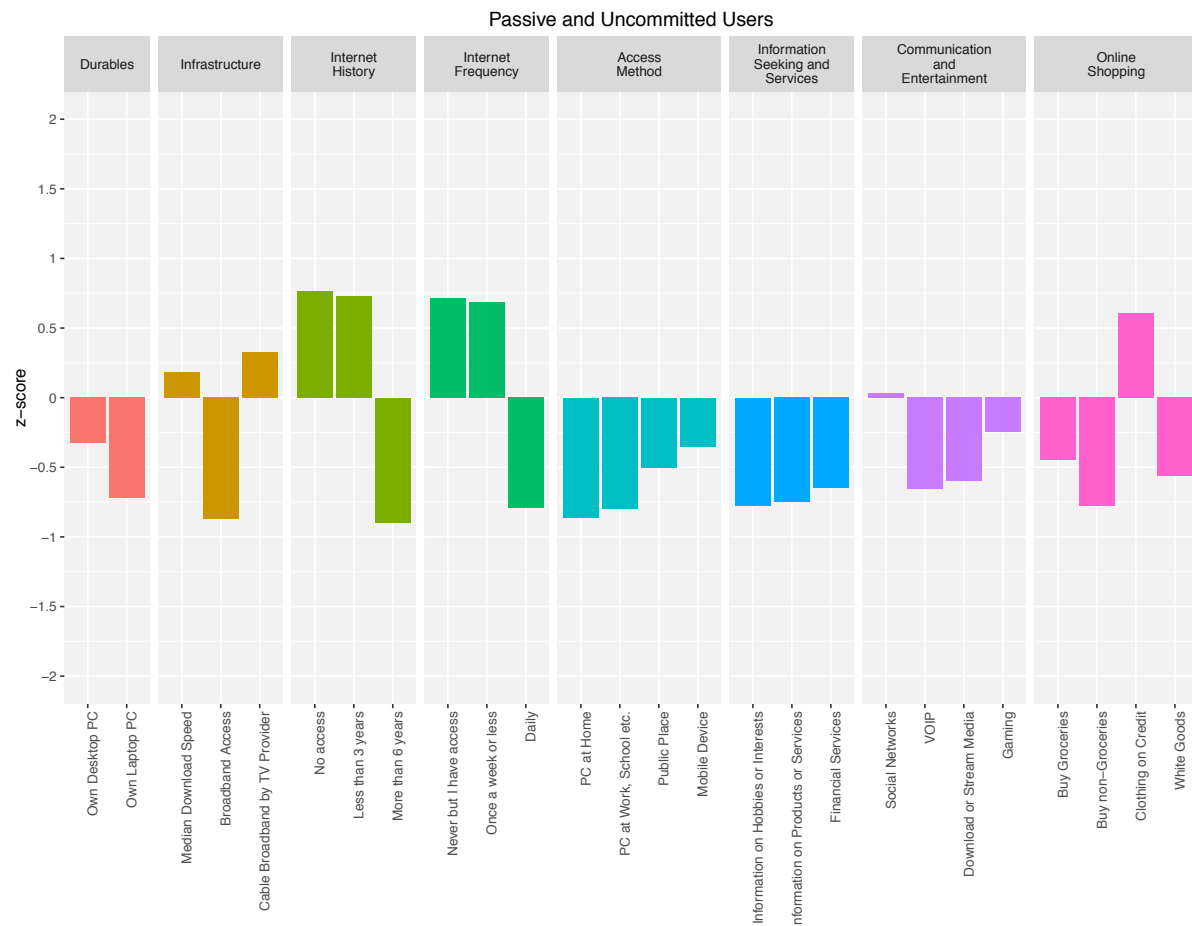
Comprising mainly rural and semi-rural areas at the city fringe, high demand for Internet services by members of this Group is constrained by poor infrastructure. Users undertake online shopping, particularly for groceries, perhaps because of the limited offer from “bricks and mortar” retailers. Users tend to be late middle-aged or elderly, and as might be expected, include a high percentage of retired home owners. The preferred method of engagement with the Internet is personal computers located at home, with low levels of mobile access. In addition to shopping, users search for information or access online banking rather than engage with social networks or gaming: the Internet is used as a utility rather than a conduit for entertainment.

Group 6. *e-Mainstream*



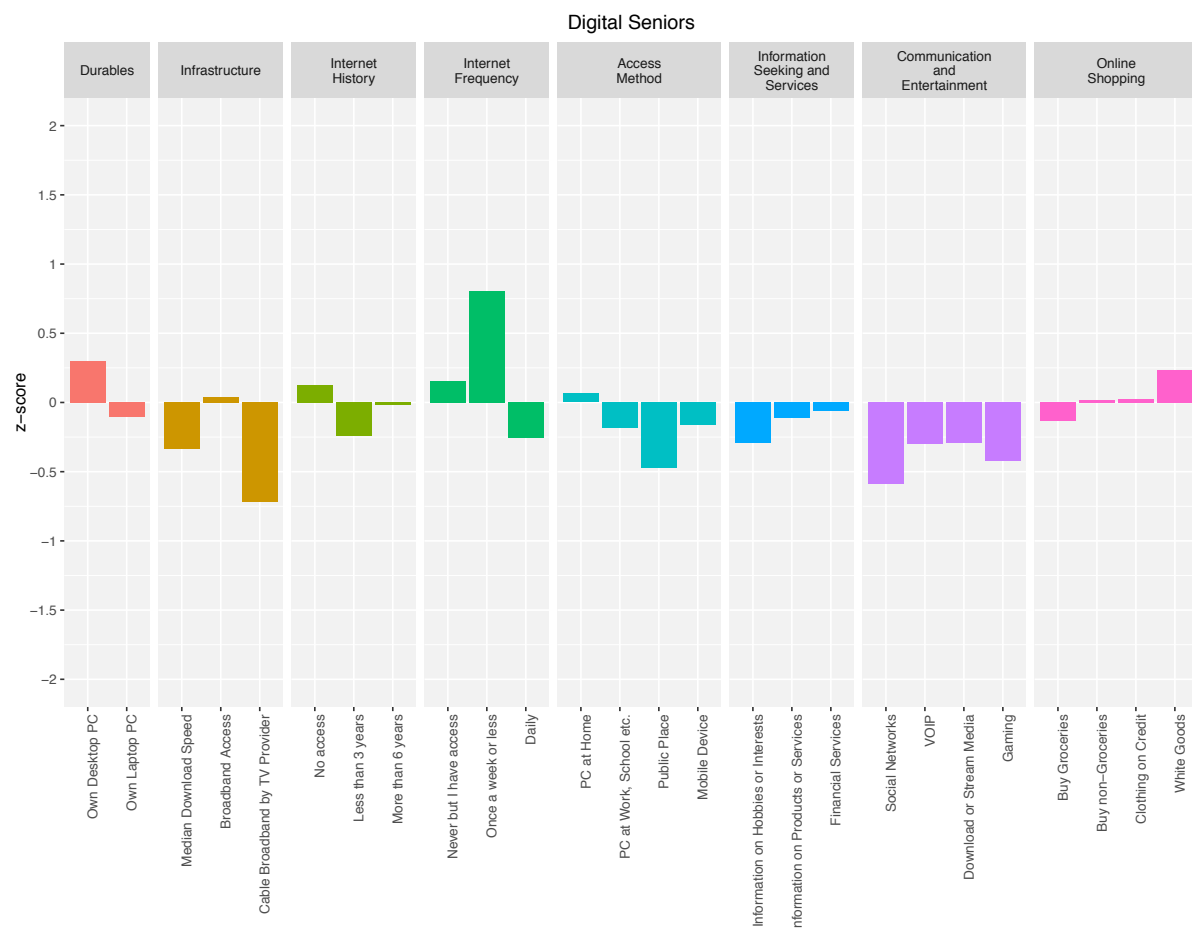
This Group exhibit modal Internet user characteristics but are drawn from a wide range of social echelons as defined using conventional socioeconomic data, and most likely represent heterogeneous neighbourhoods. Geographically, the Group is usually located at the periphery of urban areas or in transitional neighbourhoods. Their level of engagement is average across most attributes, characterising the typical user.

Group 7. *Passive and Uncommitted Users*



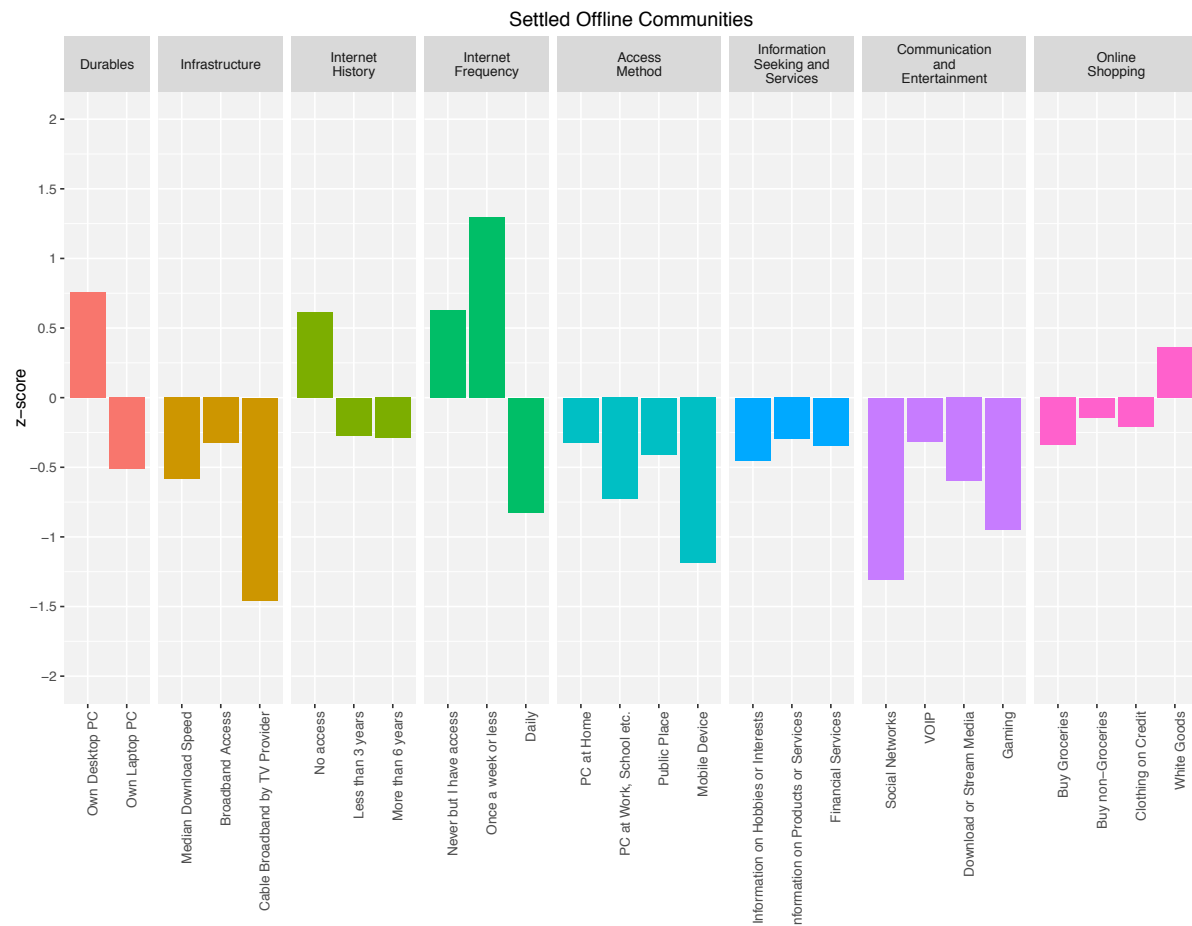
Many individuals have limited or no interaction with the Internet. They tend to reside outside city centres and close to the suburbs or semi-rural areas. Members of this Group have few distinctive characteristics in conventional socioeconomic terms, albeit higher levels of employment in semi-skilled and blue-collar occupations. Individuals are rarely online, and most commonly report use once a week or less. Access to broadband is well below average, and for those online, there is mild preference for access via smartphones. The Internet is typically used for social networks, gaming and some limited online shopping.

Group 8. *Digital Seniors*



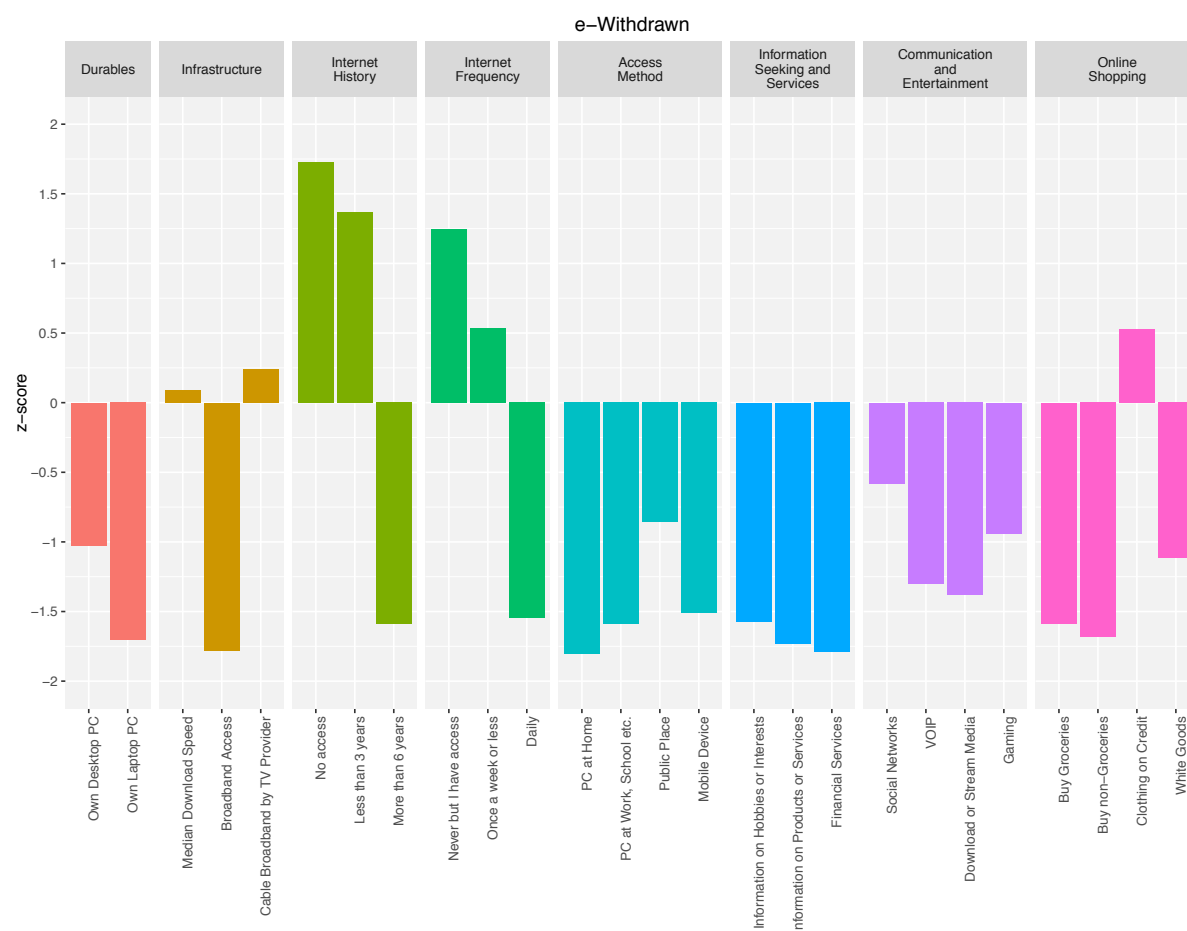
Members of this Group are ageing and predominantly White British, retired and relatively affluent. They make average use of the Internet, typically using a personal computer at home. Despite being infrequent users, they are adept enough to use the Internet for information seeking, financial services and online shopping, but less so for social networks, streaming or gaming. Members of this Group typically reside in semi-rural or coastal regions, where infrastructure provision is often limited.

Group 9. *Settled Offline Communities*



Most members of this Group are elderly, White British and retired, and tend to reside in semi-rural areas. They undertake only limited engagement with the Internet, they may have only rare access or indeed no access to it at all. Any online behaviour tends to be through home computers rather than mobile devices, and is focused upon information seeking and limited online shopping (particularly for more bulky items such as white goods) rather than social networking, gaming or media streaming.

Group 10. *e-Withdrawn*



This Group is mainly characterised by individuals who are the least engaged with the Internet. Their geography is expressed by areas that are associated with those more deprived neighbourhoods of urban regions. The socio-economic profile of the population is characterised by less affluent white British individuals or areas of high ethnic diversity; and it has the highest rate of unemployment and social housing among all other Groups. The *e-Withdrawn* Group appears to have the highest ratio of people that don't have access, or have access but never engage with the Internet. It also expresses the lowest rates of engagement in terms of information seeking and financial services, as well as the lowest rate in terms of online access via a mobile device. Online shopping is also particularly low, with the exception of Clothing on Credit, suggesting an opportunistic dimension to Internet usage. This is further reinforced by the higher than average access to Cable broadband by TV Provider, which may suggest that some individuals have opted into broadband mainly for the TV-associated benefits. It is possible that many people within this Group have opted out of online engagement, either because it is considered unnecessary or because of economic reasons.