



Computer usage and Internet access on agricultural and horticultural farms in Finland

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ABSTRACT

Computer and Internet access have become essential tools in modern society. The use of computers and the Internet on Finnish farms has been surveyed several times since the year 2000.

90% of farms used computer in 2013 whereas in 2000 only 50 % of the farms did so. By 2013 the use of the Internet had increased to the same level as the use of computer.

The use of mobile broadband connection has increased rapidly and by 2013 it was at the same level as the use of fixed broadband. The proportion of the farms using mobile broadband is higher and that of farms using fixed broadband is lower in sparsely populated areas, probably due to lower availability and speed of fixed broadband in those areas.

Almost half of the Internet-using farms access the Net with mobile phone and about 20% of the farms use tablet. Access to the Internet also in sparsely populated areas will be crucial for farms in the future, as an increasing proportion of farm management activities are carried out over the Net.

Keywords: computer, Internet, broadband, mobile, farm

PAPER

1. Introduction

In Finland the development of the access to the Internet in the rural areas has been monitored in the national rural policy. As the development of the digitalisation of both public and private services has accelerated in the last decade, it has become an issue of general and governmental interest to support the development of Internet networks across the country. Equal access to the Internet has become an issue related to an open and democratic development of the Finnish society. In relation to its population Finland is scarcely populated country. In addition to the concentration of population to urban areas, the rural areas are both very scarcely populated and remote. This reflects also to the technical functionality of Internet services. In remote areas, costs of fixed broadband networks per customer may be very high which favours mobile connections. However, if the number of customers is low, operators are not motivated to develop the coverage and speed of the mobile networks.

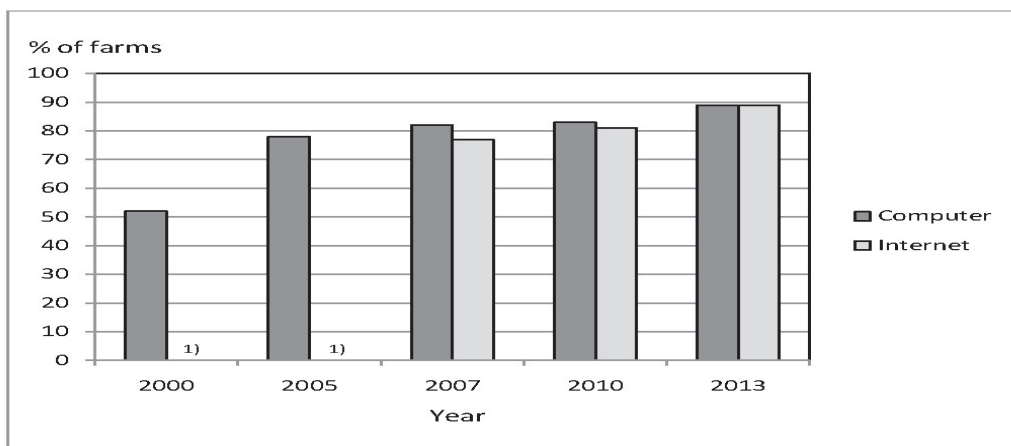
The Finnish agricultural Farm Structure Survey (FSS) has collected information on the use of computers and of the Internet on farms since the year 2000. The FSS covers 30 % of the farms; and in 2010 the survey was conducted as a full census. The composition of the questions will be revised for the forthcoming FSS 2016.

2. Use of computers and the Internet on farms

The use of computers has increased rapidly since 2000, and now almost all farms use computer and the Internet in the running of the farm (Figure 1).

Fixed broadband is still the most common type of Internet connection but the use of mobile broadband has increased to an equal level (Figure 2). Some of the farms use both of the two techniques. The use of mobile broadband on the farms was less than in Finnish enterprises in general. In comparison 68% (2010) and 92% (2013) of all enterprises had a mobile broadband connection to the Internet (Statistics Finland 2010 and 2013).

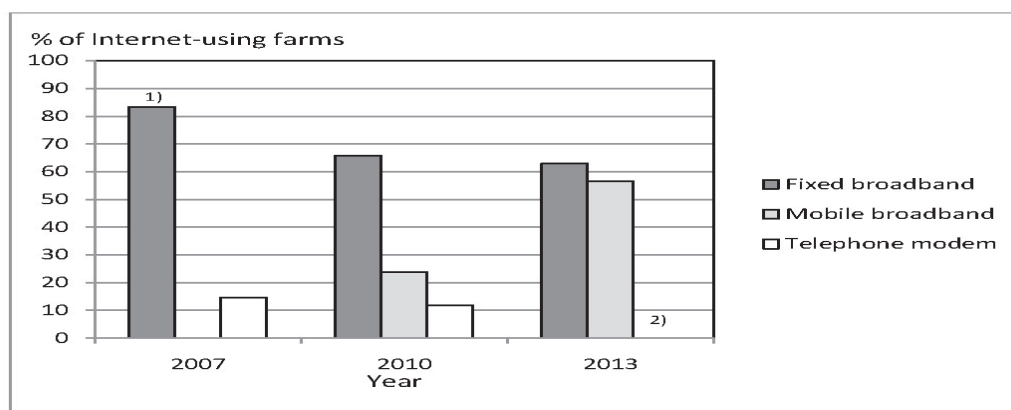
Figure 1 - Share of Finnish farms that use computer and the Internet.



1) The use of the Internet was not surveyed in 2000 and in 2005.

Source: Farm Structure Survey

Figure 2 - Use of various Internet access techniques on Finnish Internet-using farms. Multiple techniques may have been used on a single farm.

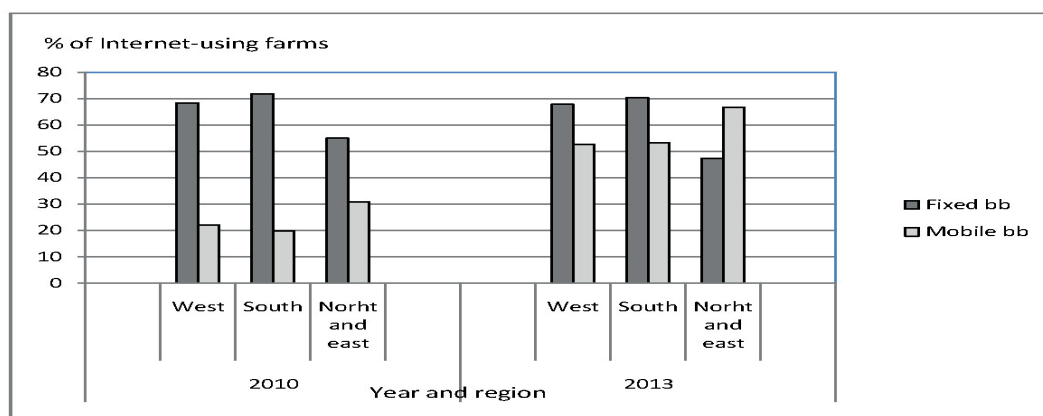


1) Includes all types of broadband connections used in 2007.

2) The use of telephone modem was not surveyed in 2013.

Source: Farm Structure Survey

Figure 3 - Use of fixed broadband and mobile broadband on Internet-using farms in the regions of Finland (NUTS2) in the years 2010 and 2013. The region "South" includes the NUTS2 region "Helsinki-Uusimaa".



Source: Farm Structure Survey

3. Differences between regions

There are no large differences between regions in the share of the farms that use computer and the Internet. However, the frequency of the use of fixed broadband is lower and that of mobile broadband higher in north and east than in other regions (Figure 3). This may be a reflection of a lower availability of

fixed broadband in the more sparsely populated north and east. For some farms mobile broadband is the only alternative, even though in many cases it has been slower and less reliable than fixed broadband.

In the FSS of 2013, the farms that did not use fixed broadband were asked, whether they could subscribe to fixed broadband if they wanted to. In north and east, fixed broadband was unavailable for 57% of these farms, whereas in other regions about 40% of the farms not using fixed broadband could not get it. The region north and east differs also for the availability of high-speed fixed broadband for households in 2014: in north and east fast fixed broadband was available for 60 % of households, whereas in south and west these percentages were 72% and 62%. (Finnish Communications Regulatory Authority 2015).

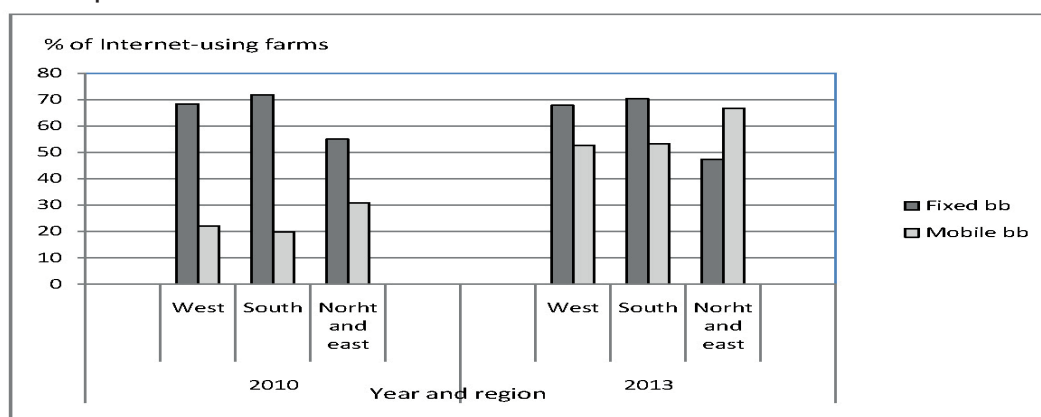
The use of mobile broadband has increased clearly from 2010 to 2013 in all regions (Figure 3). This reflects the increased use of mobile Internet applications as a supplement to fixed broadband.

In north and east, the use of fixed broadband has reduced slightly from 2010 to 2013 (Figure 3). This may relate to the dismantling of fixed telephone network in some areas due to a rapid reduction in the number of fixed telephone connections.

4. Differences between production sectors

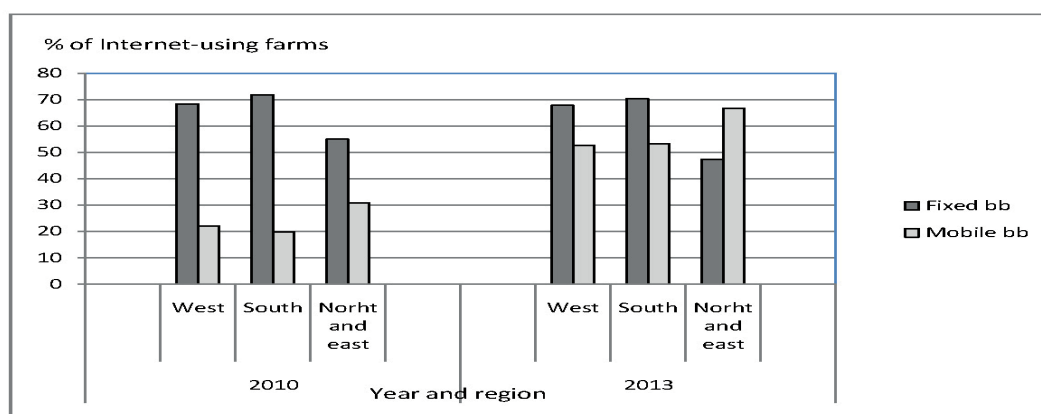
In the comparison of the production sectors, pig and poultry farms seem somewhat more advanced in the use of new technology. In 2010, they had a slightly higher rate in using fixed broadband and, respectively, a lower rate in using mobile broadband. By 2013 the rate of fixed broadband use was still higher on pig and poultry farms and the use of mobile broadband had increased on these farms relatively more than on other farms. Pig and poultry farms may have been somewhat more active in adopting new mobile Internet applications, which is also indicated by a higher rate in the use of mobile phones and tablets (Table 5).

Figure 4 - Use of fixed and mobile broadband on Finnish Internet-using farms in the years 2010 and 2013 by selected production sectors.



Source: Farm Structure Survey

Figure 5 - Devices used to access Internet on Finnish Internet-using farms in 2013 by selected production sectors.



Source: Farm Structure Survey

Horticultural sector has a little higher rate in the use of mobile phones and tablets compared with cereal and dairy farms (Figure 5). Especially greenhouse enterprises use the newer devices more than average. When looking at all production sectors, it seems that farmers who are younger than the average and more business oriented are more active in using new technology.

5. Use of the Internet in farm surveys and in the application of subsidies

According to the Agricultural Census of 2010, about 80% of the Finnish farms used computer and the Internet in farm management. However, only 57% of the farms that responded to the survey used the web service of the Census while 43% used telephone interview. In the FSS of 2013, less than half of the respondents used web survey.

A study was carried out to investigate the factors affecting the use of the Internet service of the 2010 Agricultural Census in Finland (Unkari 2011). The web service was more likely used by younger and more educated farmers. 31% of the responses were from farms that used computer but did, however, not use the web service of the Census. Reasons for not using the web survey included slow and unreliable Internet connection, insufficient instructions, difficulties in the use of the web survey and a negative general attitude towards surveys.

In the Agricultural Census of 2010, 4% of the respondents declared in the survey that they did not use computer but, nevertheless, submitted their answers in the web service. In these cases, the web service may have been used by a person other than the farmer, such as an advisor, an accountant or a relative. Some farmers may have used a public Internet access, for example in a library.

In the application of farm subsidies, the use of web service has increased rapidly in Finland (Mavi 2016). In 2010, 21% of the applications were made in the Internet, while the percentage was 66% in 2013 and 90% in 2016.

6. Conclusions

The Internet has become an essential tool in farm management as in any other activity where ITC is used. Therefore, the availability, speed and quality of Internet connections will be of the utmost importance. Farms in sparsely populated areas may face a problem here, because supplying the best available connections is not always profitable for the operators in these areas. This is a concern for all activities and has already caught public attention and measures to ensure sufficient Internet connections in all regions.

7. Links to the statistics on the use of computer and the Internet on Finnish farms

Farm Structure Survey 2013

http://stat.luke.fi/en/machines-and-appliances-agricultural-and-horticultural-enterprises-2013_en

Agricultural Census 2010

http://stat.luke.fi/en/agricultural-census-2010-agricultural-census-2010-labour-force_en

E-publication "Agricultural Census 2010 - Agricultural and horticultural labour force" (includes the use of computer and the Internet):

<http://stat.luke.fi/e-agricultural-census-labour-force/>

Farm Structure Survey 2007:

http://stat.luke.fi/en/farm-structure-survey-2007_en-0

Farm Structure Survey 2005:

http://stat.luke.fi/en/farm-labour-force-decreased-25500_en

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Mavi 2016. User statistics (Käyttäjätilastoja), in Finnish. Seinäjoki: Mavi (Finnish Agency for Rural Affairs). Available at: <http://www.mavi.fi/fi/opaat-ja-lomakkeet/vipu/Sivut/kayttajatilastoja.aspx> [cited 23/06/2016]

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