DIGITAL ECONOMY

Digital Context in Brazil

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1. Digital scenario

Brazil ranks second in Latin America, after Chile, according to the 2015 Structural Digitalisation Index drawn up by BBVA Research (see Figure 1). Brazil's digital scenario is close to that of developed countries like Ireland, Belgium and Spain, among others. According to the different dimensions of the index, Brazil is in an especially advantageous position in terms of usage and infrastructure, while it has room for improvement in ICT regulation and, to a lesser extent, digital technology. The regulation covers topics relating to the protection of the digital consumer, laws governing e-commerce and concepts guaranteeing digital security, such as electronic signatures. Also, Brazil stands at the mean of the countries analysed in terms of affordability and usage at the entrepreneurial level.

Figure 1
Structural Digitisation Index 2015

Source: BBVA Research & ITU

2. Demand side

Around 50 per cent of households in Brazil had Internet access in 2014; after multiplying by 4 in the period between 2005 and 2014. Around 60 per cent of Brazilians were using the Internet. For all the years, Internet usage was higher than Internet access, which indicates that individuals were using the Internet outside their home (see Figure 2.1). With regard to the availability of the computer and mobile phone in homes, their presence was at very different levels even in the year 2005 (17 per cent of households had a computer and 36.6 per cent a mobile phone). Over the years, the gap between access to computers and mobile phones has gradually increased, with their ownership reaching 50 per cent and 84 per cent, respectively.

Figure 2.2 shows the frequency with which individuals used Internet between 2005 and 2014, differentiating between daily and weekly Internet use. Most individuals who used Internet did so every day, with a proportion of nearly 80 per cent in 2014. On the other hand, weekly use of Internet quickly fell to 15 per cent (2014). By region, the south-east and south had the highest proportion of households with Internet access, both having a percentage of over 50 per cent, with the former even reaching 60 per cent. On the other hand, in the north-east and north, access barely approached 38 per cent.

Internet usage was close to 60 per cent, with nearly 80 per cent being daily, indicating the great penetration of Internet in the country. We note the similarities between Brazil and Chile in terms of Internet access, usage and daily usage.

Figure 2.1
Access to ICT and Internet usage (%)

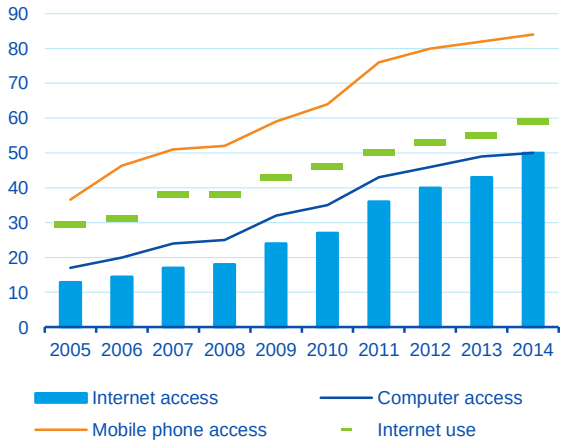
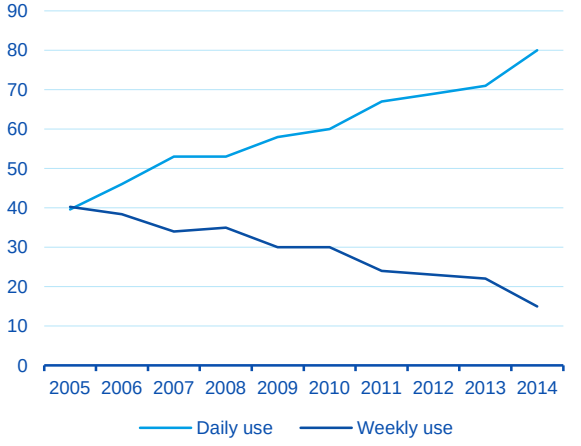


Figure 2.2
Frequency of Internet usage (%)



Source: BBVA Research & CETIC survey

Despite the rapid growth of Internet access, around 50 per cent of households in Brazil did not have access due to the barriers perceived by households. The magnitude of these barriers varied over time, i.e., it changed as new households started to use ICTs.

The perception of some kind of barrier came only from one of the individuals living in each household surveyed, who is considered to represent the household as a whole.

As can be seen in Figure 3.1, the main barrier to Internet access was a lack of skills (an exceptionally high factor in Brazil compared to the other countries in the Latin American region). Nearly 70 per cent of households without Internet access in 2014 perceived the main barrier to be a lack of skills (no member of the household had sufficient skills to use the Internet). The relative importance of this barrier increased compared to 2008, when it stood at 61 per cent. A lack of need (a voluntary barrier) and the cost of the equipment or Internet access were another two extremely significant problems. As a result, 48 per cent of

households without Internet access in 2014 stated they did not have it because they did not need it and 33 per cent viewed cost as the major impediment. Other problems such as an available space in which to use it (nowhere to get access from) is related to less available coverage in the area (geographical factors) and was a significant obstacle for 28 per cent of households with no access.

Figure 3.1
Internet access barriers in the household

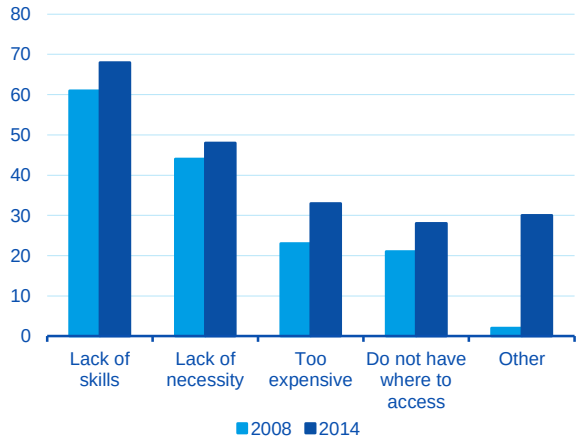
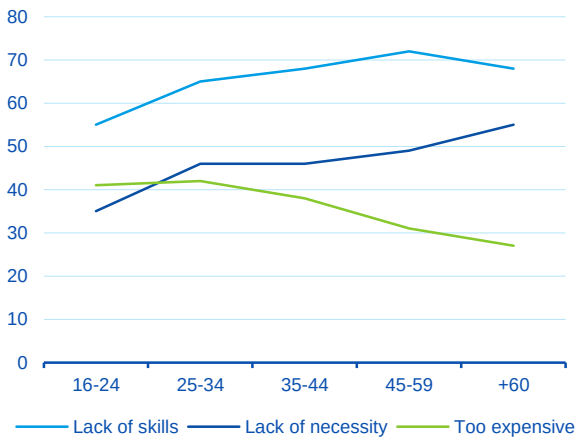


Figure 3.2
Perception of barriers by age (%)



Source: BBVA Research & CETIC survey

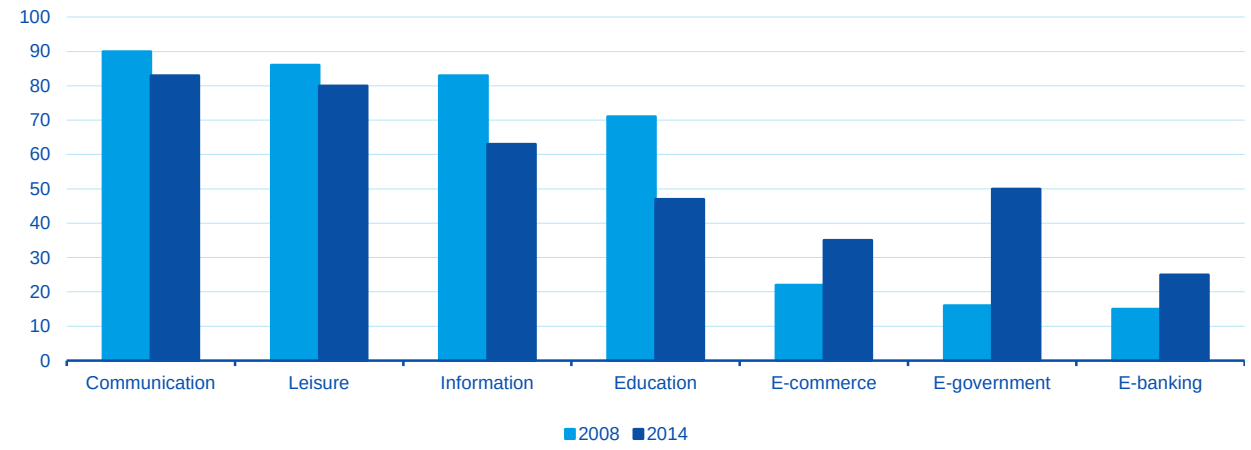
Figure 3.2 shows the three main Internet access barriers in Brazilian households (skills, need and cost) by age group (age refers to the person in the household responsible for answering the survey). We observed that a lack of skill and a lack of need were problems that increased with age, which is to be expected as the adult population is not as skilled or as attracted to current digital trends as young people. Indeed, in the case of a lack of skills, around 70 per cent of individuals aged over 35 perceived this to be a problem. However, cost was especially important for the younger population, with over 40 per cent.

On the other hand, the cost barrier fell with age, so that only 27 per cent of persons over 60 considered it to be an obstacle to establishing an Internet connection in the home, compared with over 40 per cent of individuals aged between 16 and 24.

After analysing access problems, we focused our analysis on the individuals who were using the Internet. Internet usage increased in the period 2008-2014 (from 41.6 per cent to 59 per cent). The pattern of access, understood to be the places from which individuals access and use the Internet, changed drastically between 2008 and 2014. The home predominated over all other options, being the main place of access to the Internet for over 75 per cent of users in 2014. The home was followed, in order of importance, by the workplace and the places that appear under 'other', with 13 per cent and 4 per cent respectively. Compared to 2008, home and workplace were the only places in which the percentage of users increased, to the detriment of private centres, such as cyber coffee shops. In regard to the workplace, both in 2008 and in 2013, 13 per cent of users accessed the Internet from there.

As far as users' activities on Internet (in the last month) is concerned, communication, leisure and entertainment and searches for information stand out, with percentages of over 60 per cent in all cases (see Figure 4). Next to them online activities appear, that were less frequent because of the knowledge and skills users need in order to use them, such as on-line procedures with public authorities ("e-government"), electronic commerce ("e-commerce") and electronic banking ("e-banking").

Figure 4
Activities on the Internet: usage in the last twelve months



*Note: Non-exclusive options, all activities can be selected by an individual.
Source: BBVA Research & CETIC survey

These activities showed a participation level of over 25 per cent. Specifically, in the last month, 50 per cent of Internet users had carried out formalities with the Government, 35 per cent had made online purchases and 25 per cent had used electronic banking. Since 2008, the proportion of users who made purchases on-line had multiplied by three and those who had used electronic banking had doubled. The growth in e-commerce was slightly more pronounced than that of electronic banking as of 2011.

As for the use of electronic banking by region, there are differences, although they are not very marked. The south and south-east stood out above the rest, with 30 per cent and 28 per cent respectively in 2013. On the other hand, the north-east and north stood out as the regions with the least use of e-banking (16 per cent and 14 per cent, respectively, in 2014). As far as e-commerce is concerned, exactly the same regions as in the case of e-banking occupied first and second places per level of use. The south-east and south had percentages of over 39 per cent, in contrast to the north-east and north where the percentages never rose above 26 per cent.

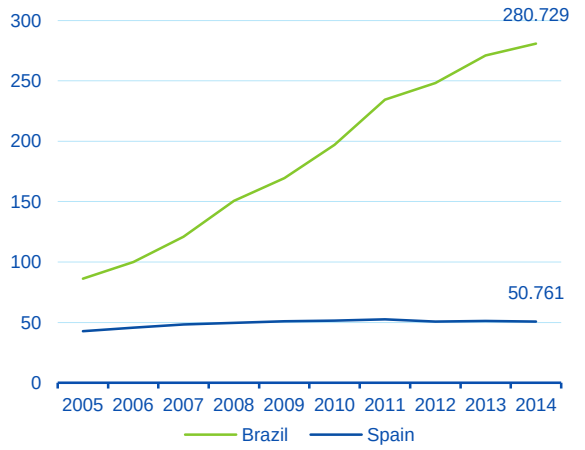
Differences can be found in the socio-economic characteristics of Internet users. Young people and individuals with higher education and a high level of income were those that used the Internet most both in 2008 and in 2014. However, the same was not exactly true of e-commerce and electronic banking. Individuals with the highest earnings and a high level of education were those who used the Internet most for these activities. Internet users in the 16 to 24 age range were those who used the Internet least for activities relating to e-commerce and e-banking.

3. Supply side

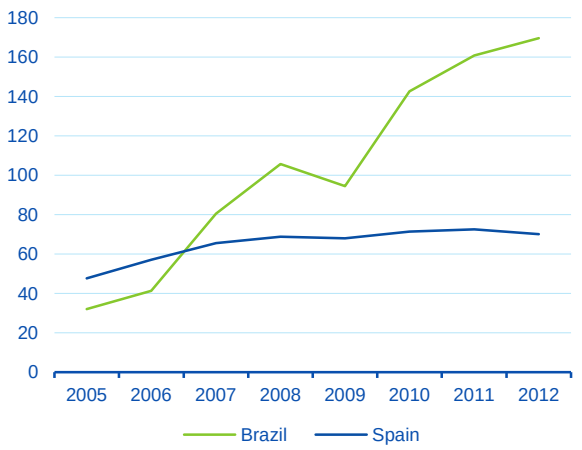
This section basically refers to subscriptions and prices (information provided by the ICT industries). The prevalence of mobile phones has increased, with a significant growth in the number of subscriptions between 2005 and 2014. This has led to a significant increase in traffic in minutes, which quintupled between 2005 and 2012.

Figure 5

Mobile phone subscriptions (millions)



Domestic mobile phone call traffic (billions of minutes)



Source: BBVA Research & ITU

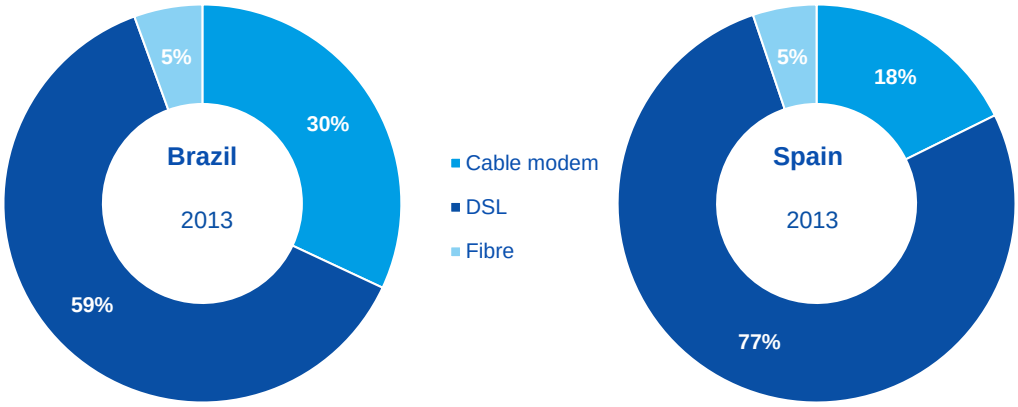
In contrast, traffic in Spain grew less markedly, partly due to the fact that it started at a higher level in 2005 (see Figure 5). As for the relationship between the number of subscriptions and traffic in minutes, Spain was above Brazil. This means that in per capita terms, the Spanish people used the mobile phone more for ordinary communications.

We note that, with purchasing power parity (PPP), the cost of a call (1 minute) was higher in Brazil (0.73 USD) than in Spain (0.15 USD) in 2013. Also, off-net and on-net charges in Spain became equal in 2012, which had already happened in Brazil in 2010. For fixed broadband subscriptions, we note that these multiplied by seven between 2005 and 2011, reaching over 21 million; a figure higher than the 12 million subscriptions in Spain.

Figure 6 shows unbundling per type of technology considered to be fixed broadband used to connect to Internet, both in Brazil and in Spain for 2013. Brazil had a higher technological stock than Spain, as it had a higher proportion of cable subscriptions (30 per cent compared to 18 per cent in Spain) and a lower percentage of connections using DSL technology (59 per cent compared to Spain's 77 per cent).

As for the price of the fixed broadband service (monthly cost), this was significantly lower in Brazil (16 USD) than in Spain (36 USD). The cost of the service has fallen steadily in Brazil, stabilizing at around 18 USD; it has remained relatively constant at around 36 USD in Spain.

Figure 6
Fixed broadband technology



Source: BBVA Research & ITU

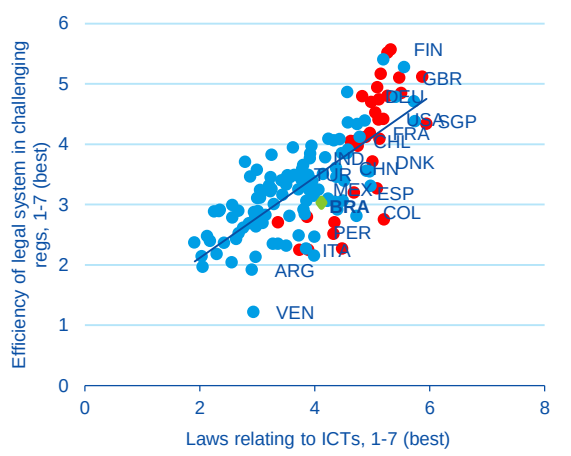
Apart from the growth in fixed broadband subscriptions, Brazil stands out due to a considerable increase in mobile broadband subscriptions. They multiplied by 16 between 2009 and 2014, to reach a proportion of 78.15 per 100 inhabitants, surpassing that year the percentage of individuals with mobile broadband in Spain (77.06).

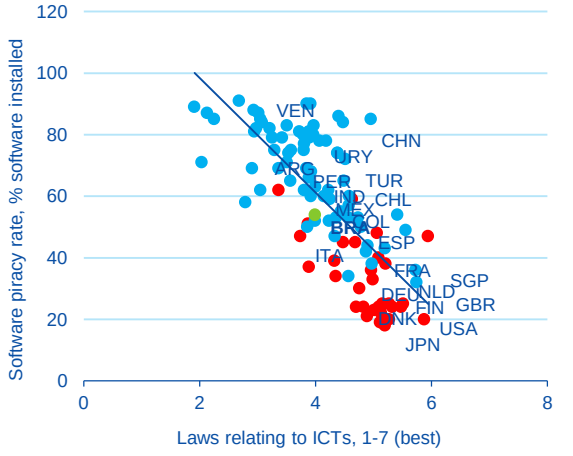
4. Regulation

In regard to regulation, Brazil heads the Latin American countries, with a rating of around 4 out of 7 for laws relating to ICT and a score of 3 out of 7 for the efficiency of the legal system. Also, a strong negative relationship can be observed between ICT-related laws and the degree of software piracy in the countries analyzed. Brazil is in a prominent position, with a status close to countries like Italy and Spain. The Nordic countries and the United Kingdom top the list in this respect, with a great number of laws relating to ICT.

Regulation is also vital for entrepreneurship (expressed in terms of the creation of new companies per 1000 workers). On relating this entrepreneurship indicator to each country's position in the ease of doing business ranking, we can see that there is a somewhat positive relationship between the two, especially in countries where doing business is easier (Australia and the United Kingdom). However, there are exceptions, such as Korea and Finland, where business creation is scarce even though they hold high positions in the ranking. As for Brazil, we note that there is a notable level of entrepreneurship, with 3 new companies being set up per year per thousand workers, the same as in Spain.

Figure 7
ICT laws: Relationship between efficiency and piracy





Source: BBVA Research & World Economic Forum

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