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**RETHINKING PUBLIC SERVICE REGULATION
AFTER THE CRISIS**

**JUDITH CLIFTON DANIEL DÍAZ-FUENTES
MARCOS FERNÁNDEZ-GUTIÉRREZ JULIO REVUELTA**

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DIPARTIMENTO DI SCIENZE ECONOMICHE AZIENDALI E STATISTICHE

Via Conservatorio 7
20122 Milano

tel. ++39 02 503 21501 (21522) - fax ++39 02 503 21450 (21505)

<http://www.economia.unimi.it>

E Mail: dipeco@unimi.it

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Rethinking Public Service Regulation after the Crisis

Judith Clifton, Daniel Díaz-Fuentes, Marcos Fernández-Gutiérrez and Julio Revuelta

Abstract

Regulatory reform of utilities in the European Union (EU) from the 1980s, including liberalization and privatization, were supposed to bring about greater choice and quality, along with lower prices for consumers. And yet even the reform architects, the European Commission, admitted in 2008 that not all the supposed benefits of reform had borne fruit. One major concern is that citizens – cast as consumers – do not always take full advantage of the new array of services on offer. Behavioural Economics has been brought in by the Commission to help explain this. But how do citizens behave in the “market place” of public services? Analysing consumption patterns and expressions of satisfaction in two major EU countries – Spain and the UK – we show when and how socio-economic factors, including age, gender, place of residence and employment, affect public service consumption. Bottom-up regulatory policies, considering this heterogenous response - could be introduced to improve existing standard top-down models, in order to improve citizens’ decisions vis-à-vis public service consumption, ever more important in times of austerity and crisis.

Keywords: regulation, infrastructure, consumers, satisfaction, European Union.

JEL Codes: H4 - Publicly Provided Goods; L51 - Economics of Regulation; D12 - Consumer Economics: Empirical Analysis.

1. RETHINKING PUBLIC SERVICE REGULATION IN TIMES OF CRISIS

A consensus is emerging that blame for a large part of the ongoing financial and economic crisis - with its origins in the reckless lending practices giving way to the so-called “sub-prime” crisis in the United States – should be assigned to regulatory failures, in particular, to an excess of financial market deregulation as well as the persistent exploitation of this deregulation by highly paid bankers, financial experts and institutions (Stiglitz 2009). For all the supposed benefits of the pre-crisis deregulated financial sector - such as innovation and

greater access to credit and choice of financial products - the pitfalls were much more dangerous than was assumed by the eager promoters of “lighter touch” regulation from the 1980s. Even post-crisis publications by the International Monetary Fund (IMF) admit that the *philosophy* of financial deregulation was erroneous: the so-called “risk-based supervision” framework ended up outsourcing – effectively, privatizing - too many critical public policy decisions by allowing individuals working in financial institutions to decide on matters that could have serious negative consequences for the public interest (Zamil 2009). In an effort to avoid this kind of crisis from happening again, Stiglitz has argued for renewed and better regulation of capital structure, bank liquidity, risk-taking and rules for incentives, attacking in particular the misalignments between private and social rewards, such as the payment of huge bonuses to individuals working in institutions which generated huge negative profits. He particularly singles out banks’ efforts to avoid regulation via “regulatory arbitrage” as being a case of “bad” innovation, since too much risk was created and packaged in increasingly complex ways that became harder to manage, communicate and understand (Stiglitz 2009: 10). And yet it is far from clear that lessons from the crisis will be learned. Stiglitz’s proposals towards Basel III point to a fresh, renewed approach to regulation, which better balance considerations between the public interest and the desire for innovative and efficient financial markets. But these are countered by the interests of the powerful global financial lobby as well as other bodies and individuals who emphasise the dangers of scaling back market forces excessively.

The public services are now targeted for deep cuts over the next decade across the European Union, which could entail millions of public sector job losses as well as challenge the provision of quality services to households. In addition, governments are cancelling hundreds of construction or upgrading projects such as network infrastructure, hospitals, schools and so forth. Clearly, there are differences in responses to the crisis across the EU but developments in the United Kingdom (UK) are worth mentioning. There, the new Conservative party – in coalition with the Liberals – came to power in May 2010 on a manifesto of the “Big Society”. This idea essentially draws on concepts of voluntarism and philanthropy - passing power from central government to individual and communities - so that they assume responsibility for “making things happen”, such as opening new schools, or running parks or libraries.¹ Like the

¹ Speech by David Cameron, Prime Minister of the United Kingdom, Monday 19 July 2010, at Conservative Party website
http://www.conservatives.com/News/Speeches/2010/07/David_Cameron_Our_Big_Society_Agenda.aspx

Thatcher government 1979-1990, the public sector is again being depicted as being wasteful, creating dependency, and run by demoralised workers, making cuts not just necessary but, even in some cases, actually desirable.

But even before the crisis and before cuts to areas of the public sector that may affect public service provision can set in, problems had appeared in the management and regulation of public service which needed attending to (Clifton and Díaz-Fuentes, 2010). Though less dramatic than the regulatory failures in the financial system, they nonetheless have important consequences for households and organizations. Firstly, news has reached the headlines that some enterprises providing fundamental household public services made historic profits in 2009 whilst consumer bills did not fall proportionately, as in the recent case of British Gas (*Financial Times* 23 February 2010). Secondly, as a consequence of consumer complaints about utility bill complexity as well as low levels of switching, utility providers in some EU countries are being forced by the energy regulator to send annual statements to consumers with information on energy consumed and how to switch suppliers. However, as these efforts are implemented in *ad-hoc* ways by the various companies, many consumers remain perplexed by the report. Energy is just one of the sectors where the European Commission (EC) has formally acknowledged that, like financial markets, public service deregulation has turned out to be far more complicated than first thought. A major study has been published which identifies which sectors in Europe “malfunctioning” whilst one of the principal causes of this problem has been identified as regulation (Ilzkovitz, Dietx and Sousa 2008).

The regulatory framework governing public services from the 1980s, which emerged as part and parcel of the new regulatory paradigm governing the Public Services – privatization, liberalization, deregulation and New Public Management, assumed that the organization of the sector was critical, so a supply-side regulatory framework would be adequate. Regulation would work for all, it was claimed, when competition among firms in an integrated market was being promoted, even for those sectors of great social importance and great complexity, such as the Public Services. Though Consumers were to be the “winners” of the new regulatory paradigm through greater choice and lower prices, and an important part of New Public Management reforms included conducting surveys on consumers’ and citizens’ satisfaction (Clifton, Comín and Díaz-Fuentes 2005), policy-makers in practice proved reluctant to include these opinions when formally designing and implementing regulatory frameworks. By the beginning of the twenty first century, the New Public Management

paradigm had come under attack for its over-commercialisation of the relationship between service provider and citizen. It has been recognised that by a focus on *consumers'* rights and choice has obscured more fundamental questions about the role of public services as regards a traditional task: social inclusion. Questions of service accessibility, affordability and universality only increase in importance as the economic crisis dampens the purchasing power of broad sectors of the population. The EU even launched in 2009 a funded research project to enquire about the failings of New Public Management of the public sector and to generate proposals as to how this sector should be governed in the twenty first century.

It seems that the financial crisis has helped fuel discontent with a lack of public participation in the reform paradigm, or at least, made support for “good”, “inclusive” regulation more fashionable. Gradually, proposals are emerging which seek to better incorporate citizens and consumers in the policy-making process via including demand-side considerations at the design and implementation policy stages. The OECD, along with other organizations and governments, is now actively promoting the incorporation of citizens into policy-making as a chief means of improving democratic governance (OECD 2007, 2009). There are advantages and disadvantages in including citizens’ opinions in the policy-making process. Advantages include providing greater transparency, building civic capacity, creating trust in government and enriching democratic governance. Disadvantages include delays, extra costs and “consultation fatigue”. Another disadvantage - perhaps the most important in terms of representing a methodological challenge - is the possible distortions in citizens’ views due to expectations about benefits of reform, tendency to overstate complaints, the “Not In My Back Yard” principle, and so on. A particularly interesting stream of proposals which urge citizens to be included in the regulatory process is derived from the school of Behavioural Economics. This school challenges the way in classical economic theory understands consumer behaviour, which underpins New Public Management. Official government publications, including the US (Mulholland, 2007; Federal Trade Commission, 2007), Australia (Productivity Commission of the Australian Government, 2007; Treasury of the Australian Government, 2008), the UK (Ofcom 2006; Fletcher, 2008) and the EU (DG SANCOS 2008) concur that the assumption of “*homo oeconomicus*” – rational, selfish and time-consistent individuals – can be improved adding insights from psychology to economics. In this light, since there are situations and patterns where individual behaviour is irrational and in the long-term not welfare-enhancing, knowledge and understanding of Citizens’ opinions and behaviour could – and should – be used in the better design and implementation of regulatory frameworks. A

demand-side approach should complement the supply-side.

Within the EU, the debate is ongoing as to the appropriate place for the consumer and citizen in the regulatory process. Economists from the Commission (Ilzkovitz, Dietx and Sousa 2008) have drawn up a list of twenty four key sectors in the economy which they identify as “malfunctioning”: among this list are public services operating in networks, electricity, gas, transportation and telecommunications (water was omitted but also exhibits malfunctioning). Here it is recognised that regulation is part of the problem and needs rethinking. While the proposals state improvement is required on the supply-side, it is also stated that demand-side aspects of regulation are necessary. Work is underway at the Commission to fully understand the causes of “malfunctioning” in order to propose new regulatory solutions.

In the light of this renewed consideration of the demand-side, this paper offers an innovative methodological approach – contrasting stated and revealed preferences - through which demand-side considerations can be analysed to identify possible areas where new approaches to regulation would increase social welfare. Surprisingly, relatively little work has been done to examine citizen satisfaction and contrast this with regulatory reform (but see Clifton, Comín and Díaz-Fuentes 2005, Clifton and Díaz-Fuentes 2010, Fiorio et al. 2007). Here, data from two large EU countries, one from the North, the UK, and one from the South, Spain, is analysed. Extended cross-national analysis can help to identify those issues which are pertinent to the national cases, for national resolution, and others which are more general, for European resolution. In addition, policy recommendations could be used towards increase social welfare and democratising the policy process.

The rest of the paper is organised as follows. The second section analyses the changing ways in which the relationship between consumer, citizen and public services have been understood from the 1980s to the present. It explains how and why a common European position on evaluating public services from the demand-side was forged during the 1990s up to the latest thinking in the Commission as regards the implications for insights for Behavioural Economics on EU policy. The third section contains the empirical analysis. In order to gain insight into public service usage, data expressing stated and revealed preferences in Spain and the UK is analysed. Data is disaggregated so that individuals and household representatives can be analysed by socio-economic category and degree of satisfaction with the service in question. Conclusions highlight the complexity and diversity of public service consumption

by country and by sector, but point to key trends in their consumption. It is argued that, while some consumption patterns may not merit any particular policy approach, there are instances when intervention could be justified, such as on the grounds of economic and social heterogeneity of consumers and citizens which may mark their public service consumption. It is likely that this heterogeneity could increase during times of crisis, reinforcing the relevance of reconsidering public service regulation.

2. THE NEW REGULATORY PARADIGM FOR PUBLIC SERVICES

The paradigm governing Public Service providers from the 1980s consisted of privatization, liberalization and deregulation policies, plus New Public Management techniques. However, because the new regulatory paradigm represented a significantly different relationship between Public Services, Government and the Citizen from the post-war settlement, some differences and conflict occurred as regards what regulation should be introduced and how in order to “protect” the public interest. This section has three aims. Firstly, it revisits the contested development of demand-side regulation from the 1990s; secondly, it explains how “Consumer” satisfaction came to be measured in the EU; finally, it explains the latest turn towards Behavioural Economics in the Commission at the beginning of the twenty-first century, and the consequences for demand-side regulation.

2.1. Constructing Public Service Consumers

Diffusion of the new regulatory paradigm for Public Services was rapid - though uneven - among EU Member States and among different sectors. The UK was a first-mover to privatize in the EU, whilst most Member States privatised from the early 1990s (Clifton, Comín and Díaz-Fuentes, 2003). As regards the six Public Services under analysis, reform was fastest and deepest in telecommunications, followed by energy, then water. Clearly, mobile and internet communications, being established later on, were established in parallel with the rise of the new regulatory paradigm.

As reform of the “traditional” public services deepened and extended, pressure accumulated from representatives of the European political elite as well as from Consumer and labour organizations due to their concern about the consequences of these reforms. These concerns

crystallised around the fear that if the regulatory reform of Public Services was left unchecked, Citizens could end up with services of a worse quality than before reform. Member States characterised by continental legal traditions, whereby universality, accessibility and non-discrimination were inscribed as Citizens' rights, as well as numerous Consumers' associations, and social partners, were particularly important representatives of this position.

Public services had played an important role in the historical evolution and institutional building of the EU Member States, representing a different model to that found in the United States (Galambos, 2000). One important difference was legal: Public Services were defined distinctly and occupied different places in the legal systems and Constitutions of various countries. In France, Italy and Spain, Citizens had enjoyed rights to Public Services since the nineteenth century. In other countries, such as Germany, the Low Countries and the UK, Public Services had a less marked place in the legal system, but were associated with specific obligations connected to the provision of Public Services (for instance, accessibility, quality and continuity). Though there were differences across the EU, there were also many common features in terms of the organization, ownership, regulation and development of Public Service regimes. Rationales for public enterprises were similar across Europe, such as the existence of natural monopolies, the strategic nature of goods or services, and social justice. Other important similarities in Public Service regimes across Europe included the kinds of activities that had been operated and managed by public enterprises, a resistance to allowing market forces to govern these activities, and the introduction of similar laws on how these services should be run (such as monopolies, concessions, exclusive or special laws). When Public Services had been provided by the State, Citizens had a "voice" via a universal right to vote nationally and locally for a political manifesto, in which Public Services were usually central. Politicians were directly accountable to Citizens for Public Service provision. Under privatised ownership and market-driven rules, it was feared that commercial interests would be pursued over and above the public interest, which could negatively affect public service obligations, universal service, quality, price and continuity of supply, blurring who would be taken as accountable for these services (CEEP and ETUC, 2000). Although these concerns are not new, many consumers' budgetary restrictions as consequence of the crisis are putting these questions centre stage again. As firms in the communications, transportation, water and energy sectors became increasingly internationalised, fears were voiced by consumer associations and other NGOs that basic Public Services that were once understood to "belong"

to the nation would now be owned and controlled by distant foreign interests motivated by short-term profits because of the principal-agent problem (Balanyá et al., 2000). Considering much internationalization was by foreign national governments, another concern was geopolitics: in Europe, the main threat was Russia's perceived energy interests (Goldstein, 2007). In the context of the international economic downturn, increased strain is put upon the sustainability of international investment increasing risk in sectors that may be viewed as strategic for the nation.

As the new regulatory paradigm gained ground, actors mobilised, led particularly by France and Belgium, and expressed their fundamental concerns. In general, these actors were not against reform *per se*, however, they did insist that, as Public Services were reformed, the public needed written guarantees about their rights to these services, which should be included in a European Directive or Charter. Jacques Delors, President of the European Commission (EC) was central when, in 1994, he commissioned two of the EU social partners, the "European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest" (CEEP), and the European Trade Union Confederation (ETUC) to draft a Charter for SGI as a basis for a Framework Directive, which was published six years later after multiple rounds of consultation (CEEP and ETUC, 2000 and EC, 2004). This development was also championed by the European Parliament and supported by the German government (Prosser, 2005). The draft Charter put forward a "bottom-up" approach to social regulation by putting Citizens - not Users or Consumers - at the centre, arguing that all Citizens should be guaranteed rights to: equal access, no discrimination, continuously working, quality and adaptable services, universal provision, safety, fair pricing, efficiency levels that could be verified objectively, transparency, participation and democratic control. Public Services would therefore be a foundation for a Social Europe characterised by solidarity, territorial and social inclusion, quality of life and a dynamic economy (Van de Walle, 2006). A logical extension of guaranteeing rights to Public Services was the establishment of a European citizenship, part of the objective behind the failed European Constitution.

Other EU actors - particularly business lobbies and the British and Dutch governments - argued that granting entitlements to Citizens was not necessary: rather, reform should be allowed to work freely and that minor, light forms of Consumer protection would suffice. Countering the French-led proposals, they proposed a market-based project, much of which

was influenced by the New Public Management School (Clifton, Comín and Díaz-Fuentes, 2005). If the continental position called for a charter or Directive to uphold Citizens' rights, the UK and Dutch governments supported a service charter similar to those associated with New Public Management, as promoted by governments in Australia, the United Kingdom and the United States, as well as international organizations such as the OECD (McGuire, 2002). There are several important differences between these "Citizen-centred" and "Consumer-centred" approaches (Clarke et al., 2007), but perhaps the fundamental one is that the "continental" perspective addresses Citizens (the entire population) whilst the "Anglo-Saxon" perspective begins with the point of consumption; there is little said about those who fall outside this market exchange. Hence, concerns about social inclusion are put firmly into the background.

As is usual in the EU, a compromise was sought to satisfy opposing positions. At first, the EC attempted to "merge" the two main positions (EC 2000a). However, the debate reached new peaks on the publication of the Green Paper of SGI in 2003 (EC, 2003a). This report elicited responses that revealed significant differences across the EU, with British and French policy-makers representing the most "extreme" positions. The resulting White Paper, published two years later, was very cautious and only contained "soft" instruments as regards regulation, for two main reasons. Firstly, because no consensus had been reached between the two positions, and secondly, because overshadowing all these developments was the process whereby the European Constitutional Treaty was to come into force, granting rights to a long-awaited European citizenship. When the Constitutional Treaty was rejected and, as the EU entered an institutional crisis, the project to establish of rights to these services linked to citizenship faded away quietly. If, in the mid-1990s, it looked possible that a Directive could be passed that focused squarely on establishing citizens' rights to these services, it seems that the EU has quietly abandoned the aim of protecting citizens through "positive integration". Any rights to services will be guaranteed at the national level, or will be promoted by the European authorities through "soft" instruments.

2.2. Monitoring Consumers' Satisfaction with Public Services

As Public Service reform continued throughout the 1990s and, in the face of heightened tensions as regards to its benefits, the EC commenced polling citizens on their views on and satisfaction with a set of Public Services. From 1997 to the present, surveys have been

regulatory published to explore satisfaction with issues such as accessibility, affordability, quality, reliability, transparency, customer relations and so forth. The methodology and purpose of the first survey in 1997 differed to those surveys published from 2000, so it is difficult to compare the results directly until 2000 onwards. The first survey *Eurobarometer 47.1* (EC, 1997) had at its centre the question of how Citizens perceived the imminent or recent opening of public monopolies providing Public Services to competition. Thus, the early influences of the continental approach are very much on display. A key conclusion here was that levels of Citizen satisfaction depend heavily on 1) which country a Citizen lives in and 2) which sector was being evaluated. The next surveys, from 2000 onwards, revealed the influence of New Public Management and were more directed at Consumer satisfaction in the EU-15 (EC, 2000b; EC, 2002), the new EU-10 (EC, 2003b) and the EU-25 (EC, 2005 and EC, 2006). The surveys in 2000 and 2002 identify “non-Consumers” and proceed to screen them out of the analysis, reflecting the peak of influence from the New Public Management School. Non-consumers views on Public Services were simply omitted. This omission was rectified from 2004, where survey respondents were grouped into two categories at the outset: Consumers and non-Consumers of a given service. Both categories were analysed in order to gain a deeper understanding of what people consumed or not. Questions of access were stressed for both categories, and, once identified, non-Consumers were surveyed further on issues such as accessibility, affordability-price, quality, consumer rights’ protection and Consumer relations. Non-Consumers who potentially had service provision were asked about accessibility, affordability and knowledge of the quality and reliability of the services. In addition, for the first time, additional socio-economic variables of respondents were considered in the analysis, including gender, age, education, household composition and urbanisation. These efforts towards better understanding Consumer behaviour, including the behaviour of “non-consumers” differed to the earlier attempt to learn about citizens’ opinions. These changes reflect, again, a change of influence, in particular, the turn to better understanding consumption patterns in the first few years of the twenty-first century as discussed in the fourth section.

Despite this rich statistical database on Citizens’ and Consumers’ use and satisfaction with Public Services, relatively little analysis has been done by scholars and there has also been little use of this information when designing and implementing policy. This is the purpose of this paper. One potential pitfall, however, in interpreting stated preferences improve public policy is the presence of bias which may be expressed by respondents. Some scholars are

sceptical of the use of data on stated preferences. Usually, scholars have argued that revealed preferences are more reliable, depending, as they do, on more “objective” data by comparing household expenditure, since data on expenditure is also “stated”. It could also be argued, however, that neither stated nor revealed preferences are purely objective. Scholars have attempted to overcome the potential weaknesses of both sets of information by using them as complementary sources and that contrasting them could enrich our understanding of user behaviour.

2.3. Behavioural Economics: Bringing the Citizen Back In?

From the early years of the twenty-first century, new ideas took hold of policy-makers in institutions such as the OECD, the EU, as well as several national competition agencies such as those in Australia, United States and the United Kingdom. Just as ideas derived from New Public Management diffused by the OECD and other organizations, particularly Anglo-Saxon governments, became influential within European authorities during the 1990s, in the first few years of the twenty-first century, Behavioural Economics was promoted by these same countries and organizations.

Using insights from psychology, behavioural economists critiqued the traditional view of *homo oeconomicus* consumers as rational, selfish and time-consistent individuals which underwrote an understanding of the act of consumption as a cost-benefit analysis resulting in the optimum choice for the individual. Though economists argued this was a useful approximation of consumer behaviour, other economists and psychologists argued that insights from psychology based on observation could help to refine this traditional approximation. In particular, insights from Behavioural Economics can try to explain why Consumers do not always take optimum decisions. For instance, behavioural economists analyse ways in which people tend to discount the future whilst overemphasising the present (“myopia”), which may lead to inertia: diets always start - tomorrow. In addition, Behaviour Economics argues that the way in which information is presented – or framing – can affect consumer behaviour. Experiments showed how pictures of a female associated with a product could significantly increase sales. Related to the presentation of information are default options. Depending on whether the default option is to automatically become – or not become – a member of a pension scheme could have significant consequences for peoples’ future security, it was claimed. Moreover, choice or information overload may result in consumer

boredom and non-consumption, or in electing the “wrong” product. Applied insights on information presentation to the infrastructures, research have shown that, frequently, when consumers switch provider, a great proportion opt for a package that makes them worse off (DG SANCO, 2008). This could be explained by lack of information, information overload and other aspects of human psychology. Kahneman (2002) explained the phenomenon of “slow learning” which occurs not because people do not learn but because of the way information is processed. Behavioural economists also studied the ways in which social aspects such as peoples’ level of education, gender, residence and age can affect their consumption decisions. From a dynamic perspective, this approach also analyses how effects of rising unemployment generated by the crisis impacts on perceptions and use of these services. Applying these insights to use of infrastructure services could shed light on why citizens do not always take optimal decisions. For instance, many consumers fail to switch provider when better alternatives are available. Other citizens’ behaviour vis-à-vis infrastructure could be explained using data on the social context or their social role. Private companies are increasingly taking this into account in their commercial strategy. For instance, some fixed phone providers have started to offer special discounts to particular groups such as the unemployed or foreigners. Spanish Telefónica has a tariff called “We Help You”, while Vodafone in Italy has a tariff for foreigners. These tariffs are not altruistic rather, they implement price discrimination in order to avoid losing customers.

Patterns in consumer behaviour could be useful in explaining how markets function. Now, it is argued that these insights could have important consequences for regulatory design. In this regard, from the practitioner perspective, one powerful suggestion is that rather than separating competition policy (supply-side) and consumer policy (demand-side) institutionally, these regulations could - and should - be combined. This is the policy of the new “Fair Trade Policy” at the UK Office of Fair Trading (Fletcher, 2008). By merging demand and supply-side regulation, aspects of consumer behaviour, such as inertia, limited memory, myopia, choice overload and so on can be addressed through better regulation. Better quality regulation could help to avoid citizens “giving up” use of a particular public service due to their economic situation, as well as improving consumer satisfaction in general.

DG SANCO argues that incorporating consumer behaviour into the design of regulatory frameworks for infrastructure could be a means of improving regulatory quality. Better understanding user behaviour as part of a demand-side consideration, combined with supply-

side considerations, could all feed into a better, higher quality, regulatory policies. Improved regulation of these issues can help make consumers and non-consumers alike more knowledgeable about products and services, making them more “empowered”, “active” and “confident” in the marketplace (Fletcher, 2008). Improving our understanding of consumer behaviour could mean consumers benefit more from the potential advantages of competition policy. From a political point of view, it should be noted that this solution is of interest to the Commission because, while it has historic competence in competition policy, it has much less competence and experience in consumer policy. An attempt to merge elements of consumer policy with competition policy could increase the Commission’s competence in consumer policy. Because of that, particularly active in this project was the newly-established Directorate for Health and Consumers (DG SANCO).

Quietly, the previous approach to defending citizens’ rights to Public Services was abandoned, whilst policy-makers turned to eclectic approaches to economics for sources of new insights into regulation. From 2006, the Commission undertook a review of the Single Market Programme in order to identify what was still not working as regards an integrated market. A list was identified of twenty-three sectors which were both important for the European economy and which displayed significant problems as regards obstacles to a Single Market. Unsurprisingly, all the main Public Services in networks were included on this list. As regards supply-side regulation, in-depth analysis was dedicated to quantifying characteristics such as market power, competition, prices, mark ups and so on, with the aim of reconsidering the optimum policy response (DG SANCO, 2008). However, this is also being complemented by a demand-side analysis, as the Commission, following the OECD, states that interactions between consumers and the market may exhibit problems that supply-side regulation alone will not fix. Thus, the Commission is seriously studying the benefits of demand-side regulation if analysis indicates this is required.

In order to signal increased attention to understanding the consumer, a new tool was launched from 2008, the “Consumer Market Scoreboard” (DG SANCO, 2008). The idea is to produce a highly visible and accessible document on an annual basis which charts aspects such as consumer use and satisfaction with products and services across the EU. Because the Commission had been producing detailed surveys and reports on satisfaction with infrastructure services since 1997, this approach and data has dominated the work done so far. In order to gather similar information on satisfaction for the other sectors, the Commission

and DG SANCO have to coordinate the collection of national data on consumer satisfaction and behaviour from national authorities.

3. EXPLORING PATTERNS OF PUBLIC SERVICE USE

Though the new regulatory paradigm for Public Services was justified by predictions that Consumers would benefit from reforms, little attention has been paid to systematically analysing Consumer and especially Citizen usage of and satisfaction with Public Services under reform. Since Public Services are central to everyday lives, this lack of attention to understanding patterns of their use is quite striking. This analysis is an attempt to analyse (non) consumption patterns regarding the Public Services under consideration with a view to recommending new forms of regulation if appropriate.

3.1. Data Sources on Stated and Revealed Preferences

The first stage in the analysis of Consumer behaviour of the six Public Services is to take stock of the main characteristics of the databases used to study stated and revealed preferences. This data is summarised in Table 1. Stated preferences – what individuals declare about their own consumption patterns, for instance, whether they use a service or not - are derived from EC (2006). This information is contrasted with revealed preferences - or the consumption patterns of particular services revealed through household expenditure - derived from the *Encuesta de Presupuestos Familiares* (SHBS) (INE, 2006) for Spain and from the Family Spending Survey (UKHBS) (ONS, 2006) for the UK.² Conceivably, this analysis could be extended to the EU-25 using the European Household Budget Survey (EUROSTAT 2009 and INE 2009). The SHBS survey sample is 19,435 households whilst the UKHBS sample is 6645 households, in contrast with the EC (2006) sample which comprises 1006 individuals. All three surveys provide disaggregated information on the individual or household surveyed, but this disaggregated information is not identical.³ For instance, SHBS and UKHBS include information on total household income or total household spending, but this is omitted in EC (2006), while SHBS and UKHBS often disaggregate in similar but not always identical ways. Our analysis thus focuses on those features which are comparable

² Service use is revealed when household I uses a services when $G_{ij} > 0$, j being the service in question and G_{ij} household expenditure I in service j .

³ For instance, EC (2006) contains information on individuals' political position, but this is not included in SHBS (2006) or UKHBS (2006) and is therefore left omitted from the analysis.

across the three surveys⁴, namely: marital status; education⁵; sex; employment status; age; household size; and some aspects of household composition.⁶ While the three surveys include data on the use of the six services under analysis, UKHBS unfortunately, does not disaggregate expenditure on the three types of communication services, so it is only possible to compare aggregate expenditure on telecommunications in Spain and the UK.

INSERT TABLE 1 AROUND HERE.

A preliminary and significant observation is that the stated and revealed use for all six services across the three surveys is highly consistent. So, individuals' stated usage of these Public Services and expenditures by households on the service under analysis in Spain and the UK largely coincide. The six Public Services can usefully be grouped according to the extent to which provision is universal. Another consideration is the extent of substitutability. Electricity and water are universal services; near-universal services include fixed and mobile telephony, whilst gas and internet services are non-universal, though gas is considerably more prevalent in the UK than in Spain.⁷ Water has no substitute, while electricity could be substituted for gas if available, whilst there is more substitutability among the three communications services. There are some minor discrepancies regarding revealed use of some services across Spain and the UK. Household expenditure on electricity is somewhat higher in Spain than in the UK because a greater proportion of households rent property in the UK and pay indirectly for this service. Expenditure on water reveals that a small percentage of households in both countries receives water free, or pays for this service indirectly. In Northern Ireland, Scotland and rural zones in northern Spain, for a diversity of reasons, water is provided "free" or charged for indirectly.

Next, an analysis is made of whether stated preferences of these services are influenced by socio-economic characteristics or satisfaction with the services. To do so, probit estimations and marginal effects of the following models are used (Wooldridge, 2002):

⁴ Other features, such as nationality and place of residence, are available in the SHBS but not in the UKHBS, so they are excluded from the analysis of revealed preferences. Information about residence (rural/urban) is considered as potentially "disclosive information" in the UK.

⁵ The Spanish HBS contains more detailed information about the educational level attained by each household breadwinner. In the UK HBS, in contrast, information is only available about the age at which the last set of studies was completed.

⁶ Considerations relating to the climate have also been introduced to better understand consumption patterns of electricity and gas.

⁷ One of the reasons for this could be the cold climate, but this requires further research.

$$Y_i = \alpha + \beta X_i + \epsilon_i \quad (1)$$

$$Y_i = \alpha + \gamma Z_i + \epsilon_i \quad (2)$$

$$Y_i = \alpha + \beta X_i + \gamma Z_i + \epsilon_i \quad (3)$$

Where:

Y_i = Service use⁸: 1 = Use, 0 = Non-use.

X_i = Personal control variables such as age, sex, educational attainment and so on as listed in Table 2.

Z_i = Control variables about the services (EC, 2006) as regards: satisfaction with accessibility⁹, satisfaction with affordability¹⁰, perception of the services as being important¹¹, perception of the service as being very important, ease with which offers can be compared¹² and satisfaction with consumer protection.¹³

INSERT TABLE 2 AROUND HERE.

The results for Spain and the UK are shown in Table 2. The six sectors are listed in the top row and the socio-economic variables and individual perceptions of the individuals in the column on the left hand side. A preliminary observation is that there is a relationship between the extent of universality of a service and the extent to which stated preferences are sensitive to socio-economic or satisfaction variables. Generally speaking, socio-economic variables least affect stated preferences in the case of the most universal of services (electricity and water). In contrast, a larger number of socio-economic and satisfaction variables affect stated preferences regarding gas and particularly the internet. In the case of gas, in both countries living in a rural area, being under 35 and being less education in the case of Spain are associated with lower usage. Similarly, negative perceptions about accessibility and affordability of gas provision are associated with lower stated gas usage in both countries, an additional factor in the UK being perceptions of consumer protection. Fixed and mobile telephony, in addition to the internet, represent one traditional and two recent technologies, all

⁸ And could you tell me which of the following services do you use? EC (2006).

⁹ In general, would you say that access to (INSERT PROPOSITION) is easy or difficult for you? By that, I do not mean "affordability", EC (2006).

¹⁰ In general, would you say that the price of (INSERT PROPOSITION) is affordable or not?, EC (2006).

¹¹ Please tell me how important is each of the following in your daily life? I mean in order for you to work, shop, contact friends\ family, etc. It is..., EC (2006).

¹² In general, how easy do you find it to compare offers from different...?, EC (2006).

¹³ In general, how well do you think consumers' interests are protected in respect of the following services?, EC (2006).

of which can be used as substitutes, particularly fixed and mobile telephony. In the UK, socio-economic variables are hardly significant for stated preferences regarding telephony, except for families with three or more children who claim they use mobile telephony more. Higher use of fixed telephony is associated with greater satisfaction with accessibility and perceptions of importance. In Spain, fixed telephony is slightly less universal than in the UK. Here, stated usage increases when: an individual is self-employed, has a child, or is more satisfied with accessibility, affordability and perceptions of its importance. Lesser educated and the over 65s claim they use less mobile telephony, whilst the under 35s, the self-employed and families with two children claim to use it more. Satisfaction with affordability and importance, in the case of fixed telephony, and accessibility, importance and easy comparability of offers, in the case of mobile telephony, are associated with greater stated use. Stated use of least universal of services, the internet, is most sensitive to socio-economic indicators and satisfaction in both countries where foreigners, the less educated, women, the over 65s, or rural/semi-rural dwellers state lower usage. In addition, in the UK, lower usage is also cited by individuals who are: single, divorced, under 35, unemployed, students or live in a one-person household. Satisfaction with internet services also counts: negative perceptions about affordability and its importance is associated with lower usage in both countries, as are negative perceptions about easy of comparing offers and consumer protection in the UK. To sum up, in the case of Spain, particular socio-economic categories are associated negatively with Public Service usage. These include: the lesser educated (gas, mobile telephony and the internet); the over 65s (mobile telephony and internet); rural dwellers (gas, fixed telephony and internet). On the contrary, the self-employed state greater usage (water, fixed and mobile telephony). Additionally, satisfaction with Public Services matters: affordability (gas, fixed telephony and internet); importance of the service (fixed and mobile telephony); and accessibility (gas and mobile telephony). In the UK, negative effects on usage are associated with: singletons, the under 35s and rural and semi-urban residence (gas and internet); whilst there are many variables intervening in internet usage. Satisfaction also matters: accessibility (gas, water, fixed telephony); service importance (fixed telephony and internet) and affordability and consumer protection (gas and internet).

Attention is now turned to revealed preferences, or actual expenditure. Average spending on the service in question by the population is measured (G_{ij}). The total amount is in both cases expressed in Euros per year. Next, the average expenditure on services by household users is calculated ($G_{ij} | G_{ij} > 0$). In the estimation of the factors explaining service expenditure, an

Ordinary Least Squares regression is performed, where the dependent variable is household expenditure on a particular service (G_{ij}) and the independent variables are regional (R_i), household type (H_i), characteristics of the bread-winner (S_i) or economic situation (E_i),

From the applied model:

$$G_{ij} = \alpha + \beta R_i + \delta H_i + \zeta B_i + \eta I_i + \varepsilon_i$$

where i = representative person and j = the service in question.

It is derived:

β , indicates regional differences in expenditure

δ , indicates differences according to household characteristics

ζ , indicates the effects due to characteristics of the bread-winner. These include: age, non-monetary effects of employment, non-monetary effects of education, etc.

η , indicates the effect of income, associated with levels of spending (G_i) and/or total income.

Differences in the extent of consumption of a given Public Service need careful interpretation. For instance, water represents a universal, non-substitutable and essential service, and reform in this sector has been slow in comparison to the other services. Very often, there is only one supplier available to potential consumers. Thus, unlike a sector such as the internet, potential consumers do not face a complex set of offers from competing firms, at least, for the moment. Lower water consumption may exhibit a wish to save money, environmental concerns, and so on. The internet is the opposite: this is non-universal and has substitutes, such as text messages. At the same time, potential consumers may have to select one supplier from a choice of more than one. Like water, non-use may be caused by a wish to save money, but, in contrast to water, it also might be explained by lack of access to this service, lack of knowledge or understanding of this service and the different offers, inertia and so on.

INSERT TABLE 3 AROUND HERE.

Results are shown in Table 3. The six Public Services comprise the top row and the socio-economic variables are listed in the left-hand column. Before proceeding to draw out the main findings, it should be first noted that expenditure on all the Public Services is significantly higher in the UK than in Spain. This gap is at its greatest in what could be considered the most “basic” of the services: water and energy. The income effect is corrected by the variables I_i : household income and total household expenditure (G_i), the latter being the most

important in general terms. Despite this, it is important that these services constitute a significant part of the overall proportion of a household's consumption. In addition, the coefficient associated with household wealth shows that the demand of these services – particularly the cases of electricity and water - is quite inelastic. Inelasticity is a particular feature of many of these services, also reflecting the important role they play for consumers and their budgets.

The most intriguing of the results found here are generally associated with consumption of the three communication technologies. Of the six sectors, communications have undergone most dramatic technological change, involving new communication technologies from the 1970s, and also have been subject to deeper reform such as privatization, liberalization and deregulation. As a result, not only do Citizens have to choose which medium they will use for communication, they are also subject to an increasing complex array of options, offers and deals from which to choose. It is this new array of choice and complexity where socio-economic characteristics of households most impact on (non) consumption decisions. The most relevant findings can be organised by the household respondent's age (generation), occupation, educational attainment and gender.

First, the generation to which a household representative belongs has very significant consequences as regards the usage of communications technologies, as well as some consequences for the consumption of water and energy. Households led by younger bread-winners (those under the age of 35) spend more on the three communications services together in both Spain and the UK. In Spain - where this information is disaggregated - we can see that this higher spending is associated with different communications technologies. In particular, the younger generation have partially substituted mobile for fixed telephony. Households led by elderly respondents, those over 65, do just the opposite: net spending on communications is lower and, in Spain, the reverse technological pattern is visible since relatively more is spent on fixed and less on mobile telephony. In addition, this generation spends less on internet communications. It seems that there is evidence here of “inertia” as regards the use of newer communications technologies by this generation.¹⁴

¹⁴ In regard to other utilities, there are some trends regarding expenditure. Households led by the over 35s in the UK tend to spend less on water and energy, but this is not observable in Spain. This is perhaps due to national differences in lifestyle, conceptions of the role of the family and the degree of independence of young people. In Spain, young people with a more precarious economic situation are more likely to live with their parents. On the

Employment also intervenes in Public Service consumption. In households with less than two employed people, less is spent on general communications in both countries. In Spain, relatively more is spent on fixed and less on mobile telephony. These households also spend more on water and energy, particularly in the UK. When a household is led by a self-employed person, expenditure on general communications is high. In Spain, this is particularly the case for fixed telephony. As regards other utility expenditure, these households spend more on electricity and less on water in both countries. Households led by an unemployed person behave differently in Spain and the UK. In Spain, spending on communications is high due to more use of mobile telephony, whereas in the UK, less is spent on communications in general.

Education intervenes too in the consumption of Public Services, though households led by lesser-educated people behave differently in the two national contexts. In Spain, these households spend less on electricity, whilst in the UK, they spend less on water. As regards expenditure on communications, in Spain, less is spent on general communications, particularly fixed and internet services, whilst in the UK this spending is unremarkable. According to EC (2006), individuals with lower educational attainments state they have greater difficulties when comparing different options available, reflecting the Spanish case. This socio-economic group also states they have a more passive attitude towards mobile telephony, with lower degrees of satisfaction with contract conditions and lower perception of consumer interest protection. Household size and composition also often affect expenditure on services. Size is associated with more spending on energy, water and communications in both countries. Conversely, in small households with just one member, more is spent on communications, while less is spent on electricity. There is a threshold as regards expenditure on communications: large households with five or more members spend less on communications in both countries. Gender also intervenes in Public Service expenditure, most significantly, again, as regards communications. Households led by women in both Spain and the UK spend more on communications services in general. In contrast to our findings regarding communications consumption and age, here, we can see that, in the case of gender, in Spain, this higher spending is not sensitive to technology: female-led households spend

contrary, households led by the over 65s spend more on energy (electricity in the case of Spain and gas in the case of the UK).

more on all fixed, mobile and internet communication. As regards the other utilities, Spanish households led by a woman spend more on gas and water, though this is not observable in the UK.

4. TOWARDS A NEW APPROACH TO PUBLIC SERVICE REGULATION

The ongoing financial crisis - leading to the subsequent unravelling of an economic crisis - has been widely blamed on regulatory oversight or failure, and has brought into question tenets of the regulatory paradigm introduced from the 1980s, which has been criticised for being excessively focused on the market whilst side-lining the public interest. Even official international economic institutions that pushed market-oriented regulation, such as the IMF and the OECD, have acknowledged past errors. In the world of public services, although New Public Management, privatization, liberalization and deregulation were all justified by the benefits to the consumer, in practice and, despite an interest in publishing surveys on satisfaction and consumer charters, relatively little systematic analysis was conducted on the consequences of the reformed public services for individuals (as consumers, but particularly, as citizens). The New Public Management paradigm marginalised traditional concerns governing public services related to social inclusion. In addition, it assumed consumers were rational, time-consistent individuals, whereas insights from Behavioural Economics would suggest we are not, at least, not always. Indeed, the crisis itself shapes our perceptions about the world, our economic possibilities, and our decisions vis-à-vis using public services.

This paper sought to identify consumption patterns of public services in order to propose areas where regulation could be improved based on these insights. Stated and revealed preferences about consumption of six public services in two EU countries, Spain and the UK, were examined. Because stated and revealed preference-based analyses have limitations, it was argued that contrasting both sources constitutes a useful approach which helps to partially overcome their limitations. Results indicated that stated and revealed use of these services was highly consistent (Table 1) and that homogenous consumers do not exist, even at the national level. Rather, consumers are heterogeneous, and may react in a different way to market dynamics and to external shocks as presented by the ongoing crisis. For instance, the number of people who have paid work in a household impact on service use and perception: clearly, the crisis means more households fall into categories were few or none work, a situation which could be readdressed by regulation from the demand-side.

Findings can be summarised as follows. The six services under consideration can be ranked from universal (electricity, water) to non-universal (gas and the internet). Universal or near-universal services, such as electricity, water and telephony, constitute a significant proportion of household's total spending and their demand is quite inelastic. These services are thus vital to a household's consumption decisions, and even more so in the context of budgetary restrictions as a cause of the crisis. Where services are less universal – gas, mobile telephony and internet - socio-economic factors and degrees of satisfaction with public services intervened more for both stated and revealed preferences. It was found, for instance, that people in Spain and the UK who live in rural areas state lower usage of gas and the internet, whilst those with less education and foreigners stated lower use of the internet. In the case of communications, analysis of expenditure showed that socio-economic characteristics, such as age/generation, employment, education, household size and composition and gender all play a role in influencing consumption. The main reason for this is that, whilst consumption of some public services is a well established tradition (water, electricity and fixed telephony), others have not necessarily been available to all (gas) whilst mobile and internet communications are recent. Introduction of new technologies means more choice for potential consumers. “Choice” as regards what technology to use and when, and which of the possibly multiple service providers to contract, is presenting new dilemmas to individuals and households, and these choices may have a different effect depending on the recipient. It seems that there is a clear generation trend whereby younger households embrace the newer technologies at the expense of the older ones, whereas older households exhibit “inertia” vis-à-vis this new choice (choice over-load). This trend is common to Spain and the UK, hence it could be argued that a supranational policy to encourage take-up of new communications technologies among the over 65s is required.

Some companies are already considering consumer or citizen heterogeneity in their business strategies, reflected through price discrimination policies as discussed in European telecommunications giants. Policy-makers are slow, however, in moving towards implementing new ideas such as consumer heterogeneity and behavioural dimensions. As in the case of the financial crisis, there is a significant consensus that the “market” orientation of regulation went too far in public services, the question remains is there the political will to reverse this towards a better consideration of the public interest.

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Table 1. Comparison of Data on Declared Satisfaction (EB) and Observed Patterns of Consumption of selected Infrastructure Services 2006 EU

Declared Preferences (Eurobarometer)										
Scope										
European Union (Including specific data for Spain and United Kingdom)										
Sample size										
1006										
Level of analysis										
Individuals										
Main variables										
<i>Individual characteristics:</i> Marital status Sex Age Status in Employment Area of residence										
<i>Service satisfaction:</i> Accessibility Service importance Consumer prot. perceptions										
Spending > 0										
Electricity Gas Water Fixed tel. Mob. Tel. Internet										
Spain 93.4 61.1 91.9 81.2 73.9 35.2										
United Kingdom 98.8 71.2 98.5 90.2 80.6 52.8										
Revealed Preferences (EPF)										
Spain										
United Kingdom										
Sample size										
19435										
6645										
Level of analysis										
Households										
Households										
Main variables										
<i>Reference person characteristics:</i> Marital status Sex Age Education Employment										
<i>Household characteristics:</i> NUTS 2 Household size & type Total spending / total income										
<i>Reference person characteristics:</i> Marital status Sex Age Education Employment										
<i>Household characteristics:</i> NUTS 2 Household size & type Total spending / total income										
Spending > 0										
Electricity Gas Water Fixed tel. Mob. Tel. Internet										
98.5 56.4 95.3 82.8 (1) 67.5 (1) 31.0 (1)										
Electricity Gas Water Telecom (2)										
91.3 73.9 89.8 (3) 95.2										

(1) 95,3 % considering jointly fixed and mobile telephone and internet

(2) Information considering jointly fixed and mobile telephone and internet

(3) 98,5 % without considering Northern Ireland

Table 2. Marginal effects of significant variables in the use of services (Eurobarometer)

SPAIN													
REGRESSION RESULTS	Electricity		Gas		Water		Fixed tel.		Mobile tel.		Internet		
	β	sign.	β	sign.	β	sign.	β	sign.	β	sign.	β	sign.	
FOREIGNER											-0.246	***	
SINGLE													
WIDOWED													
DIVORCED													
LOWEDUC			-0.114	***						-0.073	**	-0.119	**
WOMEN												-0.118	*
<35			-0.116	**						0.102	***		
>65										-0.215	***	-0.219	***
SELFEMP					0.045	***	0.127	***		0.110	***		
UNEMP													
STUDENT			0.106	*									
RURAL			-0.188	***				-0.088	***			-0.297	**
SEMIURBAN												-0.139	***
ONEMEMBER													
≥4MEMBERS													
1CHILD								-0.081	**				
2CHILDREN										0.069	*		
≥3CHILDREN													
ONEPARENT													
EASYACCESS			0.647	***						0.148	**		
IMPORTANT								0.315	***	0.348	***	0.297	*
EASYOFFER								-0.081	***	-0.073	**		
CONSPROT													
AFFORDABLE			0.275	***				0.097	***			0.270	***

UNITED KINGDOM													
REGRESSION RESULTS	Electricity		Gas		Water		Fixed tel.		Mobile tel.		Internet		
	β	sign.	β	sign.	β	sign.	β	sign.	β	sign.	β	sign.	
FOREIGNER												-0.190	*
SINGLE			-0.064	*								-0.256	***
WIDOWED													
DIVORCED												-0.200	***
LOWEDUC												-0.217	***
WOMEN												-0.079	**
<35			-0.097	***								-0.183	***
>65												-0.288	***
SELFEMP													
UNEMP												-0.397	***
STUDENT												0.273	***
RURAL			-0.262	***								-0.204	***
SEMIURBAN			-0.135	***								-0.190	***
ONEMEMBER												-0.122	**
≥4MEMBERS													
1CHILD													
2CHILDREN													
≥3CHILDREN										0.448	***		
ONEPARENT													
EASYACCESS			0.564	***	0.492	***	0.217	**				0.336	***
IMPORTANT							0.249	***				0.141	***
EASYOFFER												0.278	***
CONSPROT			0.157	***								0.278	***
AFFORDABLE			0.171	***								0.406	***

Signification: *>90%, **>95%, ***>99%

Table 3. Estimation of effects on revealed spending
SPAIN

	Electricity	Gas	Water
Importance (average spending, €/ year)	377.47	184.13	129.54
Average spending (users), €/ year	383.34	326.59	135.87
REGRESSION RESULTS	β sign.	β sign.	β sign.
Income	TOTALSPENDING 0.008 ***	0.004 ***	0.003 ***
	TOTALINCOME -0.006 **	-0.002 n.s.	-0.004 ***
Sex	WOMENRP 4.785 n.s.	13.158 **	5.104 *
Age	RP>65 30.117 ***	-3.463 n.s.	6.597 **
	RP<35 -7.156 n.s.	11.417 n.s.	-5.975 *
Marital status	SINGLE -21.160 ***	-12.019 n.s.	8.002 **
Education	LOWEDUC -15.094 ***	4.896 n.s.	0.501 n.s.
Employment	LESS2OCC 10.812 *	-1.943 n.s.	1.478 n.s.
	UNEMPRP 37.813 ***	7.485 n.s.	7.480 n.s.
	SELFEMPRP 33.435 ***	-15.914 **	-7.597 ***
Household type	SIZE 2.480 ***	0.302 n.s.	0.827 ***
	ONEMEMBER 13.367 n.s.	2.344 n.s.	4.062 n.s.
	5MEMBERS -29.354 ***	0.068 n.s.	-4.622 n.s.
	ONEPARENT -65.680 ***	-19.631 n.s.	-21.103 **
Regional variables	NOROESTE -147.047 ***	44.899 ***	-77.476 ***
	NORESTE -177.186 ***	44.349 ***	-75.128 ***
	MADRID 93.566 ***	448.806 ***	89.708 ***
	CENTRAL -127.601 ***	48.222 ***	-71.223 ***
	ESTE 2.739 n.s.	107.216 ***	23.135 ***
	CANARIAS -128.658 ***	-69.781 ***	26.743 ***

UNITED KINGDOM

	Electricity	Gas	Water
Importance (average spending, €/ year)	597.92	529.58	393.69
Average spending (users), €/ year	654.90	716.62	438.41
REGRESSION RESULTS	β sign.	β sign.	β sign.
Income	TOTALSPENDING 0.005 ***	0.003 ***	0.001 ***
	TOTALINCOME 0.001 ***	0.002 ***	0.001 ***
Sex	WOMENRP -1.416 n.s.	12.693 n.s.	-5.062 n.s.
Age	RP>65 20.637 n.s.	44.073 ***	-13.947 **
	RP<35 -71.868 ***	-92.579 ***	-30.003 ***
Marital status	SINGLE -31.797 *	-47.802 **	-13.804 *
Education	LOWEDUC 3.304 n.s.	-21.216 n.s.	-9.977 *
Employment	LESS2OCC 63.916 ***	90.120 ***	22.766 ***
	UNEMPRP -31.048 n.s.	-67.492 n.s.	17.194 n.s.
	SELFEMPRP 62.221 ***	-18.903 n.s.	-12.815 *
Household type	SIZE 149.183 ***	89.108 ***	44.985 ***
	ONEMEMBER 5.493 n.s.	-47.573 **	-43.617 ***
	5MEMBERS 51.978 *	-47.145 n.s.	-3.563 n.s.
	ONEPARENT -9.117 n.s.	-10.442 n.s.	21.981 **
Regional variables	NORTHEAST -71.672 **	133.956 ***	-102.281 ***
	NORTHWEST -47.596 **	169.139 ***	-54.664 ***
	YORKSHIRE -78.332 ***	127.332 ***	-78.237 ***
	EASTMIDL -87.424 ***	107.070 ***	-67.892 ***
	WESTMIDL -30.178 n.s.	143.038 ***	-84.525 ***
	EASTERN -59.729 **	31.218 n.s.	-30.139 ***
	LONDON -111.690 ***	91.822 ***	-124.095 ***
	SOUTHEAST -34.298 n.s.	103.058 ***	-65.456 ***
	WALES 6.335 n.s.	66.496 **	-10.118 n.s.
	SCOTLAND 49.317 **	101.818 ***	-294.406 ***
	NORTHIREL 56.976 **	-336.524 ***	-518.251 ***

RP=reference person
Signification: *>90%, **>95%, ***>99%