

TECHNICAL REPORT

Study on Appropriate Methodologies to Better Measure Consumer Preferences for Postal Services

Final Report

*Charlene Rohr • Urs Trinkner • Alison Lawrence • Priscillia Hunt
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Preface

RAND Europe, in conjunction with Accent and Swiss Economics, was commissioned by the European Commission Directorate-General Internal Market and Services to conduct research on appropriate methodologies to better measure consumer preferences for postal services.

This report summarises work undertaken testing the use of stated preference discrete choice experiments to measure consumer preferences for postal services. It discusses the importance of understanding and quantifying consumer priorities in the postal sector and presents different methods used for valuing non-market goods. We recommend the use of stated preference discrete choice experiments, and test the use of this approach in three member states. We provide the findings for these member states, as well as a “tool kit” for applying this methodology in other member states in future.

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List of Acronyms and Definitions

Acronym or term	Definition
CV	Contingent valuation
DCE	Discrete choice experiment
NPO	National postal operator
NRA	National regulatory authority
PPS	Purchase price standard
SME	Small and medium (business) enterprise (less than 250 employees)
SP	Stated preference
SPDCE	Stated preference discrete choice experiment
USO	Universal service obligation
USP	Universal service provider
WTA	Willingness to accept (payment for service reduction)
WTP	Willingness to pay (for service improvement)

Country Abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CH	Switzerland
CY	Cyprus
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FI	Finland
FR	France
HU	Hungary
IS	Iceland
IT	Italy
LI	Liechtenstein
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
SE	Sweden
UK	United Kingdom

Summary

Postal services are an essential means for the delivery of communication, goods and information. They greatly reduce transaction costs between individuals, companies and governments, thereby contributing to the functioning and evolution of relationships, markets and governments. Virtually every citizen relies on postal services as a sender and recipient. Every year, European consumers hand about 135 billion¹ postal items over to postal operators, which deliver them throughout the European Community with over 1.6 million (Copenhagen Economics, 2010) employees.

Postal services have steadily evolved over centuries as the key means for long-distance communication between people (“telecommunication”). Whereas earlier signalling-based telecommunication technologies such as telegraph and fax have influenced the demand for postal items to a limited extent, the age of digitalisation with the invention and evolution of the internet have had, and are still having, a measurable impact on people’s needs to send and receive postal items. On the one hand, letter mail volumes are steadily decreasing in most European countries and there is little doubt that this decline is to be attributed to the substitution of letters by electronic alternatives (“e-substitution”). On the other hand, the delivery of physical goods such as small packages and parcels is likely to be of increasing importance. “E-commerce” has taken off, and in line with globalisation, both personal and business relationships are far more widespread than they used to be. These trends can be seen in the growing parcel volumes in most member states.

Increases in e-substitution and e-commerce are likely to have an impact on consumers’ needs and preferences for postal services. In the case of regulated postal services, however, such developments in consumer demand are not immediately matched by changes in supply, but must be identified and addressed through policy decisions. Given the significant changes brought about by electronic communication, there is a need for better information on how these developments have affected demand for postal services and on what consumers need from a postal service.

The need to understand customers’ preferences is acknowledged by the European Commission’s Postal Directive (Directive 97/67/EC as amended by Directive 2002/39/EC and by Directive 2008/6/EC). While specifying the minimum requirements with respect to the provision of the universal postal service that all member states must ensure, the

¹ http://ec.europa.eu/internal_market/post/index_en.htm.

Directive also states in Art. 5 that the “universal service shall evolve in response to the technical, economic and social environment and to the needs of users”.

Against this background, various member states, such as France and the UK, have started initiatives to better understand their citizens’ needs and preferences for postal services. While every study is very insightful in itself, the methodologies employed in these studies differ in important aspects. As a consequence, the results vary greatly, and comparisons among member states are hardly meaningful.

Moreover, measuring consumer preferences in postal markets that link senders and recipients is a challenging task that needs careful consideration based on a sound economic understanding of the underlying needs of postal consumers. This study aims to help member states to better understand their people’s needs and preferences for postal services. To this end, the study develops a methodology for measuring consumers’ preferences and implements it in three member states: Italy, Poland and Sweden. Based on the findings and lessons learned, the study provides a toolkit for member states that wish to conduct quantitative market research to better understand their citizens’ needs for postal services. The results of the study also help to inform the public debate in Europe on what people expect today from postal services.

Our methodological framework for measuring consumers’ preferences for postal services

For this study we use information collected from consumers regarding choices of hypothetical postal services (called stated preference discrete choice experiments; SPDCEs) to quantify consumers’ preferences for specific aspects of postal services. We recommend the use of this approach because it provides values for attributes of a public good or service when incomplete markets are present. Moreover, the use of stated preference (SP) choice experiments is growing in the postal sector, particularly in the area of quantifying consumer priorities.

Based on an economic analysis of the underlying needs for postal services, we hypothesise that such a study should:

- take account that users are both receivers and senders of post
- take account of competition in the communication market, particularly from e-substitutes
- reflect the services that are provided and experienced by senders and receivers rather than structure oriented features of the postal network, like the number of sorting centres.

Implementing the valuation methodology in three member states

A number of steps were required to develop and implement the SP choice experiments and survey methodology.

Step 1: Defining the attributes to be tested in the choice exercises

A key aspect of such a study is the specification of the attributes and attribute levels to be tested in the choice experiments. Ideally, we would include all meaningful attributes that

describe postal services. However, in practice we are limited to a maximum of around 15 attributes which can be evaluated by any one respondent, and 15 attributes is probably an upper limit, particularly because of the focus of the needs of vulnerable people's postal needs.

In order to be able to compute consumers' willingness to pay (WTP) it is essential that price is included as one of the attributes. Because we are seeking to obtain consumers' WTP for improved services (or compensation required for reduced services), we need to examine price ranges that test consumer' WTP, rather than the actual costs of providing the services. Policy makers may then compare the resulting WTP valuations against the costs of providing the services to determine whether provision of such service levels is justified, but this is outside the scope of this study. For realism we recommended that the prices be varied around current prices in each member state.

In order for consistency and comparison of findings, we tested the same attributes in three member states, although the costs are presented in the appropriate currency for respondents in each member state.

As part of the study, we used four sources to inform our choice of attributes:

- specification of an economic framework for the provision of postal services, and consumers' priorities for these services
- review of attributes (and levels) tested in other studies
- review of current minimum levels of obligation (universal service obligation; USO) for specific postal attributes across member states, to provide information on minimum service attribute levels and how their levels may vary across member states)
- views on postal service elements which are important to consumers from stakeholders in the member states where the quantitative research will be undertaken.

Implications of the underlying needs of postal services

Our analysis of the underlying needs of postal services suggested that the study must ensure that three issues are accounted for appropriately: that users are both senders and receivers (the two-sidedness of the postal market), the different exposure of letters and parcels to competition, and that the services examined in the study should reflect the services experienced by users.

First, the insight that the postal market is a two-sided network calls for an analytical distinction along three main features that interrelate in important ways and hence cannot be analysed separately: the sender and recipient side of the service, and the service platform that links these two sides.

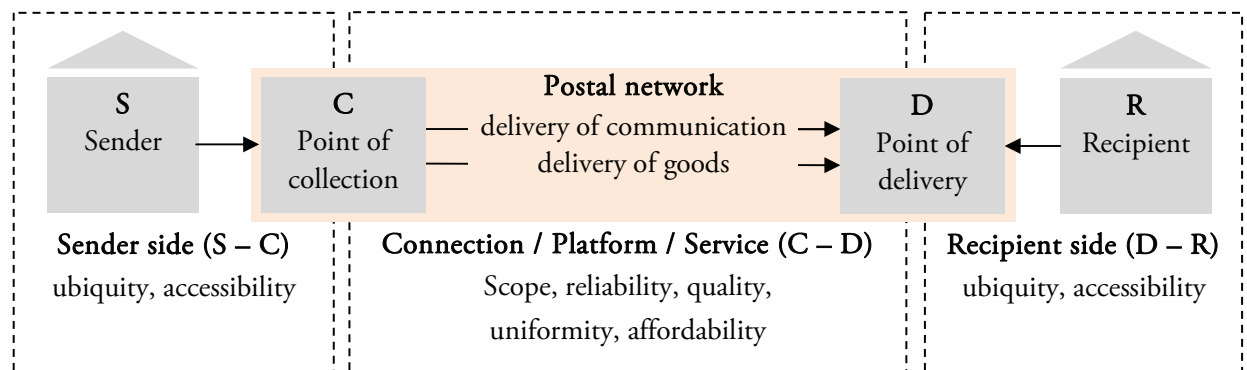


Figure S.1 Two sides, one platform, based on Jaag and Trinkner (2011b)

The two dimensions ubiquity and accessibility may be crucial issues on the sender and recipient side. In the services platform (C-D), relevant dimensions include the scope of services provided (e.g. letters, parcels) and their reliability, quality, uniformity and affordability. It is a challenge to incorporate the two-sidedness of the postal market in the study design. In this study we therefore felt that it was important:

- to assure that the preferences of both sides (senders and recipients) were reflected while avoiding double counting
- to compute the WTP jointly for both sides
- to frame the choices such that respondents viewed themselves simultaneously both as senders and recipients
- to collect socio-economic information regarding respondents' usage of the postal network both as sender and recipient and to distinguish businesses and private consumers.

Second, digital options are also likely to change the underlying needs of consumers. For example, fast letter services might diminish in value to consumers as digital alternatives offer instantaneous delivery. While digital competition may result in less WTP for some services, there may be increases in value for other services; for example the delivery of parcels resulting from online shopping. Consumers' WTP for postal service elements may therefore depend crucially on the availability and usage of digital alternatives. We therefore felt that it was important to:

- select member states with differing levels of digital penetration and e-commerce usage
- distinguish in choice experiments the delivery of communication (letters, newspapers) and goods (parcels, packages)
- collect socio-economic information on respondents' internet availability and usage
- control for the availability of substitutes.

Third, some attributes such as frequency of delivery may be important to operators providing postal services, but may have less direct relevance to users. We therefore focused on service attributes which are directly experienced by users, for example the speed of delivery – “output-oriented” attributes rather than “input-oriented” attributes that relate to

the provision of postal services such as the number of sorting and collection facilities or the number of collection and delivery days.

Review of attributes tested in other postal valuation studies

A number of other studies have been undertaken to examine consumer preferences for postal services and USO attributes. From examination of these studies we see that previous studies have focused on a wide range of attributes including:

- speed of delivery and number of classes of services
- delivery frequency
- collection frequency
- time of delivery
- service standards
- evening delivery and Saturday delivery
- access to post offices
- presence of registered and insured services
- opening hours
- uniform pricing
- price.

Many of these attributes are relevant for this study, but many are also focused on input-oriented features, which may not impact the service actually experienced by users, e.g. collection frequency. Moreover, most of the studies focus on quantifying consumer preferences for letter post, although some studies have looked at the value of parcel services in general (Accent, 2008).

Levels of USOs across member states

The minimum levels of USO attributes for specific postal attributes across member states provide information on current minimum service attribute levels and how these vary across states. Therefore the USOs across member states were reviewed to inform the decision of attributes (and attribute levels) to be tested in the choice experiments.

Views of stakeholders

In order to understand stakeholder views about the importance of postal service attributes, views were sought from representatives of the postal provider, the postal regulator, relevant consumer bodies, other postal operators and other interested parties in the three member states. This took the form of conference calls and a follow up questionnaire.

Selected attributes

The attributes to be tested were guided by the economic framework, but also took into account findings from other studies, information regarding specification of USO conditions and stakeholder views.

Given the growing importance of parcel services, we recommended that two separate exercises be undertaken, by business and resident consumers, to examine the importance of the following attributes separately for letter and parcel services:

- delivery time, including single class services (J+1, J+2, J+3) and two-class services (J+1 and J+3); we also tested a non-uniform service specification, specifically J+1 (locally) and J+3 (nationally)
- reliability (% of mail delivered on time), with levels between 80% and 95%

- guaranteed time of latest daily delivery
- percentage of lost items, with levels between no lost items, 5% and 10% lost items
- delivery location: at home, a post-office box or the local postal service centre
- price, based on current stamp prices (for letters and packets) and an average parcel price for parcels.

We have included guaranteed time of delivery, on the basis that this could be important to customers and may have an important impact on costs for postal providers. We have not included time of collection, on the basis that this is likely to be less important to consumers. In turn, we have put greater emphasis on the speed of delivery attribute, which is a direct indication of the time that it takes for an item to reach the recipient.

We tested the importance of Saturday delivery in the pilot survey but this attribute was dropped for the main surveys, on the basis that too many respondents indicated that they found the choice exercises too demanding in the pilot survey (nearly 20% of respondents reported that they could not undertake the choice experiments in the pilot and cognitive survey tests, which is a rather high figure based on our experience).

We also recommended a third experiment to quantify the importance of the following service attributes:

- uniform pricing
- proportion of the network covered by postal services
- accessibility of postal points of contact (measured as distance)
- available services
- opening hours
- price.

We have not tested provision of specific services, e.g. “track and trace” services, on the basis that these are provided commercially in many markets.

We also haven’t included electronic collection and delivery, on the basis that such services may be unfamiliar to many customers presently.

For consistency and comparison of findings, we tested the same attributes in the three member states. Although the costs were based around current price levels in the member state and were presented in the appropriate currency for each member state. We recommended testing six price levels in the design, including price reductions and increases, to ensure a wide range of costs are tested in the experiment, facilitating reliable estimates of WTP.

Step 2: Defining key market segments, sample sizes and the survey methodology

Key market segments

Postal service preferences and priorities may vary by country and customer type. It was therefore crucially important to reflect the views of different customer types within the survey design.

Businesses’ postal needs may vary depending on the size and type of business. Larger businesses will tend to have direct contact with the postal service provider, possibly even an account manager. The impact of changes to postal service provision of the platform and on the recipient side is likely to be very important to them, whereas the public accessibility of

the platform for senders may be less of a concern. Smaller businesses will have less of a voice and may be smaller users of the postal service. Consequently, their preferences for the accessibility on the sender side may be more accentuated. We therefore specified quotas for large businesses and small and medium enterprises (SMEs) within each member state.

The survey design aimed to reflect the demographic profile of the member state's residential customers, measuring age, gender and household income. Additionally it took account of more vulnerable members of society, notably the elderly, disabled and those on low incomes – those who may be more dependent on postal services and likely to be more heavily impacted by any change to postal service provision. We felt that it was also important to represent those living in more rural areas and those without internet access as their reliance on and usage of postal services could be different from those who live in urban areas and those who have access to email and online services.

Survey sample sizes

We proposed to undertake 475 interviews in each member state:

- 3 member states:
 - 350 residential consumers:
 - 100 vulnerable users
 - 250 non-vulnerable users
 - 125 business customers:
 - 75 SMEs
 - 50 large businesses.

These were the maximum sample sizes that were feasible given the project budget. Our aim was to be able to compare the resulting valuations between vulnerable and non-vulnerable residential consumers and between SMEs and large businesses.

Survey methodology

It is essential in research where complex choice experiments are undertaken that the choice experiment options are clearly presented for the respondent to see as part of the survey. This has implications for the survey methodology, and within the report we discuss the benefits and shortcomings of different methodologies.

Our recommended approach was to use a Phone–Post/Email/Fax–Phone methodology. This meant that the interviews were undertaken by telephone with an interviewer. Respondents with email access (most businesses and a proportion of residential respondents) could be sent the SP material during the course of the initial phone call, allowing the respondent to view it while they were on the phone so that the telephone interview could continue uninterrupted. However, those who were unable or unwilling to access the internet as part of the survey could have the material either faxed or posted to them and the interview completed at a future date. The inclusion of a postal option ensured that those without internet access were also included within the research.

Step 3: Choosing the member states for testing the study methodology

We selected three member states for testing the study methodology, providing a wide range of variation across key background characteristics that might influence postal services and consumers' preferences for postal services, e.g. size of country, letter volume, degree of urbanisation, market experience, digital penetration, state ownership, and so on. To do this we ranked each member state into three clusters (low, medium and high) across the key criteria, as shown below.

Table S.1: Summary of postal characteristics across member states

	Low	Medium	High
Size¹	MT,LU,CY,EE,SI,LV,L T,IE,FI	SK,DK,BG,AT, SE ,HU, CZ, PT,BE	EL,NL,RO, PL ,ES, IT ,U K, FR,DE
Letter volume²	BG,RO,LV,LT, PL ,EL, SK,	CY,HU,EE,CZ, IT ,PT, ES,MT	IE,DE,SI,DK, SE ,NL,L U,FI
Urbanisation³	EE,CY,LU,SI,RO,SK, BG, HU,SE	DK,CZ,LT,FI, PL ,IE,AT ,FR, IT	DE ,EL,LV,PT,ES,BE, NL, UK,MT
USO⁴	RO,FR,SI,BG,CZ, IT ,L V, UK	AT,CY,DK,HU,LU,MT, PL ,SK,EE,DE,IE,LT,N L	BE,EL,FI,PT, SE ,ES,
Perception of affordability⁵	FI, SE , PL ,ES,CZ,DK,D E, IT ,HU	EL,EE,LV,AT,PT,SI	FR,LU,BE,CY,MT,SK, NL,LT,UK,IE
Market experience (letters)⁶	AT,BE,CY,FI,FR,EL,H U,IE,LV,LU,MT, PL ,PT ,SK	CZ,DK,EE, IT ,RO,SI	BG,DE,NL,ES, SE ,UK
Market experience (parcel)⁶	BG,CZ,DK,MT,SK,SI	CY,IE,LT,PT	AT,BE,DE,HU, IT ,LV,L U,NL, PL ,RO,ES, SE ,U K
Digital penetration¹	BG, PL ,SK,RO,EL,HU, CZ,PT,CY	LT,LV, IT ,SI,IE,ES,MT, AT, EE	FR,DE,BE,LU,UK,FI, SE , NL,DK
E-commerce¹	RO,BG,LT,EL,PT, IT ,E E, LV,CY	HU,ES,SI,CZ, PL ,SK,I E, MT,BE	AT,FR,FI,DE,LU, SE ,N L, UK,DK
State ownership⁷	DE,NL,MT	BE,AT, IT	DK,IE,FR,LU,FI, SE ,U K,CZ,RO,BG,EE,LV,L T,HU, PL ,SI,SK,CY,EL ,ES,PT

Source: 1) Eurostat (2010); 2) DG Internal Market & Services (2010); 3) DG REGIO; 4) PwC (2006) (under review); 5) Eurobarometer (2007); 6) Based on Van der Lijn et al. (2006); 7) Copenhagen Economics (2010). Selected member states are in bold.

We note that there was no combination of member states which allowed for maximum variation across every criterion, whilst covering 20% of the EU population and including one member state from western, southern and eastern states (a requirement of the study brief).

After much deliberation we concluded that Sweden, Italy and Poland offered a very good level of variation across key dimensions and therefore the surveys were undertaken in those countries.

Consumers' preferences for postal services

The results from the choice experiments provide estimates of consumers' WTP for the different attributes tested in the experiments undertaken in Sweden, Italy and Poland. The key findings are summarised below. The detailed attribute valuations, in purchase price standard (PPS) units, are presented in three summary tables at the end of this section.

Big businesses value letter services more than SMEs or residents whereas all consumers value parcel services

We observe that big businesses value letter services more than SMEs or residents – and this is not surprising because big businesses are more likely to be senders of large volumes of mail – over 60% of big businesses in our sample send over 500 pieces of mail per month compared with 14% of SMEs. Thus they appear to have a vested interest in good letter services and are willing to pay for those services.

However, differences in parcel sending between big businesses and SMEs are much less marked – with 15% of SMEs and 17% of big businesses sending over 100 parcels per month – and here we see more similar valuations of postal service attributes between big businesses and SMEs.

Both big businesses and residents tend to place higher valuations, absolutely and relative to base prices, on parcel services than on letter services.

When we looked at specific service attributes, we found the following results.

Reductions in the number of lost letters or parcels have been identified as the most important service attribute for business and resident consumers

The experiments tested three levels of loss for letters and parcels: no lost letters or parcels, 5% loss and 10% loss. We recognise that these are very large loss levels. However, 5% and 10% loss levels require very large levels of compensation, particularly for parcels, to all consumers. These findings are inconsistent with the qualitative findings, where reduction of lost items was not ranked as highly as improvements in speed of service – but perhaps respondents were not considering loss levels of 10% when considering the qualitative questions.

All consumers also value reliability

All consumers valued improvements in reliability (measured as the percentage of letters or parcels delivered on time). Big businesses placed the highest value on reliability for letter services. SMEs and residents placed high values on reliability for parcel services.

Businesses, particularly big businesses value speed of delivery for letter services

We observed that businesses, particularly big businesses, value speed of delivery for letter services, whereas SMEs and resident consumers seem to place less value on this postal service attribute. We find that a single service with a two-day delivery may be acceptable to SMEs and residents, but would be less acceptable to large businesses. Alternatively, a non-uniform speed of delivery option, where local letter deliveries are made by the next day but national deliveries are made within three days, may be an acceptable compromise to both business and resident consumers, although this contradicts findings from the qualitative findings, where two-thirds of respondents indicated that mail should be delivered as quickly to rural location as to urban locations. The non-uniform option seems to be less acceptable when it applies to parcels, particularly for businesses. We do not observe any

preference for a two-class service offering both next day and within three-day deliveries, compared with a single next day service.

Generally, speed of delivery is perceived to be more valuable for parcels than letters, particularly for businesses.

Delivery to the home or work location is important for businesses and residents

Business and resident consumers required compensation for letter and parcel delivery to secure boxes away from their work or home locations. In Sweden we found some evidence that delivery location matters to vulnerable people over 44 years of age (where travelling may be more difficult) and non-vulnerable people, although vulnerable people younger than 44 years of age did not see this as an important issue.

Early morning guaranteed time of delivery was not highly valued by consumers

The evidence from this work suggests that businesses would be willing to accept a 13:00 guaranteed time of delivery without much compensation relative to a 09:00 guaranteed time of delivery, although, they would require substantial compensation for a move to a guaranteed time of delivery at 17:00. Resident consumers seemed to value later deliveries more positively in general, which was counter-intuitive to what we were expecting but may reflect that many respondents do not require delivery during the day when they are not at home.

Regarding general characteristics of the postal service, we find the following.

All consumers want to access services nearer their home or work and with longer opening hours

Businesses and resident consumers are willing to pay for having postal services nearer their work or home, and there are surprising levels of consistency in the valuations across businesses and resident consumers, and across countries. Consumers also value service locations with longer opening hours. In this study we observed lower WTP for a wider range of postal services or financial services.

Consumers value higher levels of coverage of the postal network

We observe that business and resident consumers value full coverage of the network – delivery to all addresses in a country – with SMEs valuing this more than larger businesses.

Consumers have a preference for uniform pricing for letter and parcels within the country, but the value is relatively small compared with other postal service attributes

Generally, we observe that business and resident consumers have a small preference for uniform pricing for letter and parcels within a country, although the value attached to uniform pricing is relatively small (non-vulnerable residents in Poland are the exception here, as they do not value uniform pricing positively).

The following tables summarise the resulting values for each attribute level, for the business and consumer segments. All valuations are measured relative to a base attribute level (which is explicitly labelled) and are measured in PPS units, for comparison purposes. Positive values indicate WTP for service improvements; negative values are willingness to accept (WTA) compensation for service deteriorations. A value of zero indicates that the service level is valued the same as the base service level. Values in light grey are not significantly different from zero at the 95% confidence level.

We note that for letter services, the valuations are measured relative to the price of a stamp (20 g), and therefore to obtain the total WTP for service improvements (or compensation required for service decrement) *the total volume of letter mail has to be considered*. For example, if consumers are willing to pay €0.1 on the stamp price for a service improvement, then the total WTP within the market will be €0.1 multiplied by the total volume of mail. For parcel services, the valuations are measured relative to the price of a 1 kg parcel. *In order to compute the total WTP for service improvements (or compensation required for service reductions), the total volume of parcel mail has to be considered.*

Table S.2: SME and large business valuations for letter and parcel services (PPS units)

Domain level	Letters		Parcels	
	SME WTP (PPS)	BB WTP (PPS)	SME WTP (PPS)	BB WTP (PPS)
Number of classes and speed of service				
One class: delivery by next working day (base)	0.00	0.00	0.00	0.00
One class: delivery within 2 working days	0.00	-0.53	-0.97	-3.85
One class: delivery within 3 working days	-0.19	-0.85	-6.89	-5.56
One class: local deliveries by next working day; national deliveries within 3 working days	-0.15	-0.33	-3.84	-2.27
Two classes: next working day and within 3 working days	0.00	0.00	0.00	0.00
Delivery location				
Delivered to business during work hours only (base)	0.00	0.00	0.00	0.00
Delivered to secure mail box 100m from business	-0.29	-0.59	-4.04	-4.17
Delivered to secure mail box 1 km from business	-0.41	-0.64	-6.32	-4.17
Guaranteed time of delivery				
Delivered by 9:00 (base)	0.00	0.00	0.00	0.00
Delivered by 13:00	-0.11	0.00	0.00	0.00
Delivered by 17:00	-0.25	-0.37		
Delivered by 17:00 (not advertising material)			0.00	0.00
Delivered by 17:00 (advertising material)			-4.57	-4.12
Percentage of mail delivered on time				
80% of letters / parcels delivered on time (base)	0.00	0.00	0.00	0.00
90% of letters / parcels delivered on time	0.06	0.62	0.00	0.00
95% of letters / parcels delivered on time	0.11	0.71	2.28	0.00
Percentage of letters lost				
No lost letters / parcels (base)	0.00	0.00	0.00	0.00
5 out of 100 letters / parcels lost	-0.33	-0.99	-9.24	-9.40
10 out of 100 letters / parcels lost	-0.85			-14.10
10 out of 100 letters lost (not magazines / newspapers)		-2.41		
10 out of 100 letters lost (magazines / newspapers)		-1.11		
10 out of 100 parcels lost (visit post office once a year or less)			-21.07	
10 out of 100 parcels lost (visit post office several times a year or more)			-13.28	

Table S.3: Resident valuations for letter and parcel services (PPS units)

Domain level	Letters			Parcels		
	Sweden (WTP (PPS))	Poland (WTP (PPS))	Italy (WTP (PPS))	Sweden (WTP (PPS))	Poland (WTP (PPS))	Italy (WTP (PPS))
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	0.00	0.00	0.00	0.00	0.00
One class: delivery within 2 working days	0.00				-0.85	0.00
One class: delivery within 2 working days (vulnerable)		-0.19				
One class: delivery within 2 working days (non-vulnerable)		0.00				
One class: delivery within 2-3 working days			-0.25			
One class: delivery within 2-3 working days (vulnerable)				-0.78		
One class: delivery within 3 working days	-0.22				-1.90	-2.16
One class: delivery within 3 working days (vulnerable)		-0.92				
One class: delivery within 3 working days (non-vulnerable)		-0.28				
One class: local deliveries by next working day; national deliveries within 3 working days	0.14	0.02	0.06		0.00	
One class: local deliveries by next working day; national deliveries within 3 working days (vulnerable)				-0.98		-12.54
One class: local deliveries by next working day; national deliveries within 3 working days (non-vulnerable)				0.90		0.00
Two classes: next working day and within 3 working days	0.00	0.00	0.00		0.85	1.36
Two classes: next working day and within 3 working days (vulnerable)				-1.01		
Two classes: next working day and within 3 working days (non-vulnerable)				0.82		
Delivery location						
Delivered to home during work hours only (base)	0.00	0.00	0.00	0.00	0.00	0.00
Delivered to secure mail box 100m from home		-0.52	-0.70		-0.76	
Delivered to secure mail box 100m from home (vulnerable * age ≤ 44 years)	0.00					
Delivered to secure mail box 100m from home (vulnerable * age > 44 years)	-0.46					
Delivered to secure mail box 100m from home (non-vulnerable)	-0.40			0.00		
Delivered to secure mail box 1 km from home		-0.86	-0.96		-2.49	
Delivered to secure mail box 1 km from home (vulnerable * age ≤ 44 years)	0.00					
Delivered to secure mail box 1 km from home (vulnerable * age > 44 years)	-0.90					
Delivered to secure mail box between 100m and 1 km from home						-3.77
Delivered to secure mail box between 100m and 1 km from home which you can access at any time (vulnerable)				-1.84		
Delivered to secure mail box 1 km from home (non-vulnerable)	-0.91			-1.12		
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	0.00	0.00	0.00	0.00	0.00
Delivered by 13:00	0.13	0.28	0.00	0.00	0.30	1.67
Delivered by 17:00	0.00	0.46	0.00	0.00	1.85	3.22
Percentage of mail delivered on time						
80% of letters / parcels delivered on time (base)	0.00	0.00	0.00	0.00	0.00	0.00
90% of letters / parcels delivered on time	0.16					3.83
90% of parcels delivered on time (vulnerable)					0.00	
90% of parcels delivered on time (non-vulnerable)					0.00	
95% of letters / parcels delivered on time	0.23					5.03
95% of parcels delivered on time (vulnerable)					0.00	
95% of parcels delivered on time (non-vulnerable)					1.68	
More than 90% of letters / parcels delivered on time		0.54	0.40	0.43		
More than 90% of parcels delivered on time (vulnerable)				0.43		
More than 90% of parcels delivered on time (non-vulnerable)				0.98		
Percentage of letters lost						
No lost letters / parcels (base)	0.00	0.00	0.00	0.00	0.00	0.00
5 out of 100 letters / parcels lost						-9.85
5 out of 100 letters / parcels lost (vulnerable)	-0.31	-0.35	-0.82	-3.48	-2.25	
5 out of 100 letters / parcels lost (non-vulnerable)	-0.65		-1.14		-7.10	
5 out of 100 letters / parcels lost (non-vulnerable, never sent letters)		0.00				
5 out of 100 letters / parcels lost (non-vulnerable, sent letters)		-0.72				
5 out of 100 parcels lost (non-vulnerable, age < 60 years)				-5.23		
5 out of 100 parcels lost (non-vulnerable, age ≥ 60 years)				-2.06		
10 out of 100 parcels lost						-18.12
10 out of 100 letters / parcels lost (vulnerable)	-0.66	-0.48	-1.63		-3.45	
10 out of 100 parcels lost (vulnerable, use parcel service to return goods)				-8.03		
10 out of 100 parcels lost (vulnerable, do not use parcel service to return goods)				-3.64		
10 out of 100 letters / parcels lost (non-vulnerable)	-1.22		-1.54		-11.05	
10 out of 100 letters lost (non-vulnerable, never sent letters)		0.00				
10 out of 100 letters lost (non-vulnerable, sent letters)		-1.63				
10 out of 100 parcels lost (non-vulnerable, age < 60 years)				-9.65		
10 out of 100 parcels lost (non-vulnerable, age ≥ 60 years)				-2.36		

Table S.4: Business and resident valuations for general postal service attributes (PPS units)

Domain level	Business		Residents		
	SME	BB	Sweden	Poland	Italy
	WTP (PPS)	WTP (PPS)	WTP (PPS)	WTP (PPS)	WTP (PPS)
Accessing postal services					
- Distance to travel					
1 km from home / business (base)	0.00	0.00	0.00	0.00	0.00
3 km from home / business	-0.23	-0.44	-0.56	-0.71	-0.47
5 km from home / business	-0.57	-0.44	-0.90	-0.99	-1.12
10 km from home / business	-1.39	-1.36	-1.46	-1.58	
10 km from home (vulnerable)					-2.19
10 km from home (non vulnerable)					-1.61
- Opening hours					
open 2 hours per day (base)	0.00	0.00	0.00	0.00	0.00
open 4 hours per day	0.69	0.95	0.57	0.70	
open 4 hours per day (vulnerable)					0.76
open 4 hours per day (non vulnerable)					1.13
open 8 hours per day		1.76	1.24	1.32	
open 8 hours per day (no internet access at home)	1.73				
open 8 hours per day (internet access at home)	1.27				
open 8 hours per day (vulnerable)					1.73
open 8 hours per day (non vulnerable)					2.49
- Services available					
Basic postal services available (base)	0.00	0.00	0.00	0.00	0.00
Full range of postal services available, e.g. including registered and insured	0.36	0.28	0.29	0.31	0.25
Full range of postal services and additional financial services	0.36		0.29	0.40	0.42
Full range of postal services and additional financial services (visit post office once a fortnight or less)		0.76			
Full range of postal services and additional financial services (visit post office once a week or more)		0.00			
Postal network					
Delivery to 100% of addresses (base)	0.00	0.00	0.00	0.00	0.00
Delivery to 99% of addresses	-0.40	-0.28	-0.34	-0.29	-0.69
Delivery to 95% of addresses	-0.84	-0.66	-0.47		-1.00
Delivery to 95% of addresses (vulnerable)				-0.60	
Delivery to 95% of addresses (non vulnerable)				-0.88	
Pricing					
Same price to deliver to any destinations within the country	0.24	0.28	0.22		0.18
Same price to deliver to any destinations within the country (vulnerable)				0.25	
Same price to deliver to any destinations within the country (non vulnerable)				-0.27	
Different prices to deliver to different destinations within the country (base)	0.00	0.00	0.00	0.00	0.00

What the findings mean for policy and regulation

What do people expect from postal services in Europe today? The methodology developed and applied to Italy, Poland and Sweden reveals a series of important findings and allows for selected conclusions.

Discussion of results

Generally, we have found high values of WTA and WTP for the individual elements of postal services. The values exhibit the expected sign with rather large confidence intervals. In important aspects, consumer preferences overlap among customer segments and countries.

Categorised along the economic framework presented earlier, the main findings can be summarised as follows (WTA and WTP interpreted relative to the price of baseline product):

- On the sender side, it is very important for all customers to be reached within a reasonable distance (not more than 3 km) and to have a postal contact point with opening hours of at least four or, even better, eight hours. This is despite the fact that most customers agree with the statement that they rarely go to a postal

contact point. To a lesser extent, customers care about the scope of services offered in these contact points and prefer having a full range of postal services (as compared to basic services only). Financial services are valued from some big businesses as well as from households in Poland and Italy.

- On the recipient side, businesses and households clearly dislike postal services that do not deliver letters or parcels to the doorstep. All customer groups also dislike services that do not deliver to all addresses in the country. Businesses prefer delivery to take place during office hours (before 17:00), whereas households in Italy and Poland favour the latest delivery option, suggesting that households prefer to be at home when delivery takes place (after office hours).
- For the service connecting the sender and recipient side, customers value first and foremost a service where no letters or parcels are lost. The attribute can be interpreted as a proxy for the value of the information or goods that are handed over to the postal operators. The very high estimates (up to over 500% of base price in Sweden and Poland) highlight the importance of postal services and indicate that customers indeed trust postal services in delivering valuable items. Moreover, customers reveal important preferences for services that include a next day delivery option (same WTP as long as a next day service is offered). This is in line with the qualitative questions where respondents suggested faster delivery services in countries with slower services (Italy, Poland). The WTP for a next day service is, in absolute and relative terms, generally higher for parcels than for letters. For the latter, a next day option seems to be predominantly important for big businesses. Businesses, and in particular businesses, expect uniform delivery standards throughout the country for letters and parcels, whereas households prefer a priority (J+1) treatment of local letters only. SMEs exhibit an important WTP for uniform prices. To a lesser extent, Swedish and Italian households favour uniform prices. Big businesses care more about the punctuality (percentage delivered on time) of letters than parcels; small businesses prefer punctual parcel services. For households, the WTP for on-time delivery seems to be higher where the actual service levels are lower (Italy, Poland).

The following figure summarises the key findings from the study.

Overall, the various consumer groups tend to have rather similar preferences on the sender and recipient side (end), whereas there are important differences with respect to the services connecting the two sides (ends). Big businesses have a higher relative WTP for delivery quality (speed, on-time delivery) than SMEs and households. This may be an indication that big businesses depend much more on letter mail services to communicate with their customers. This is consistent with empirical letter mail volumes originating largely from big businesses.

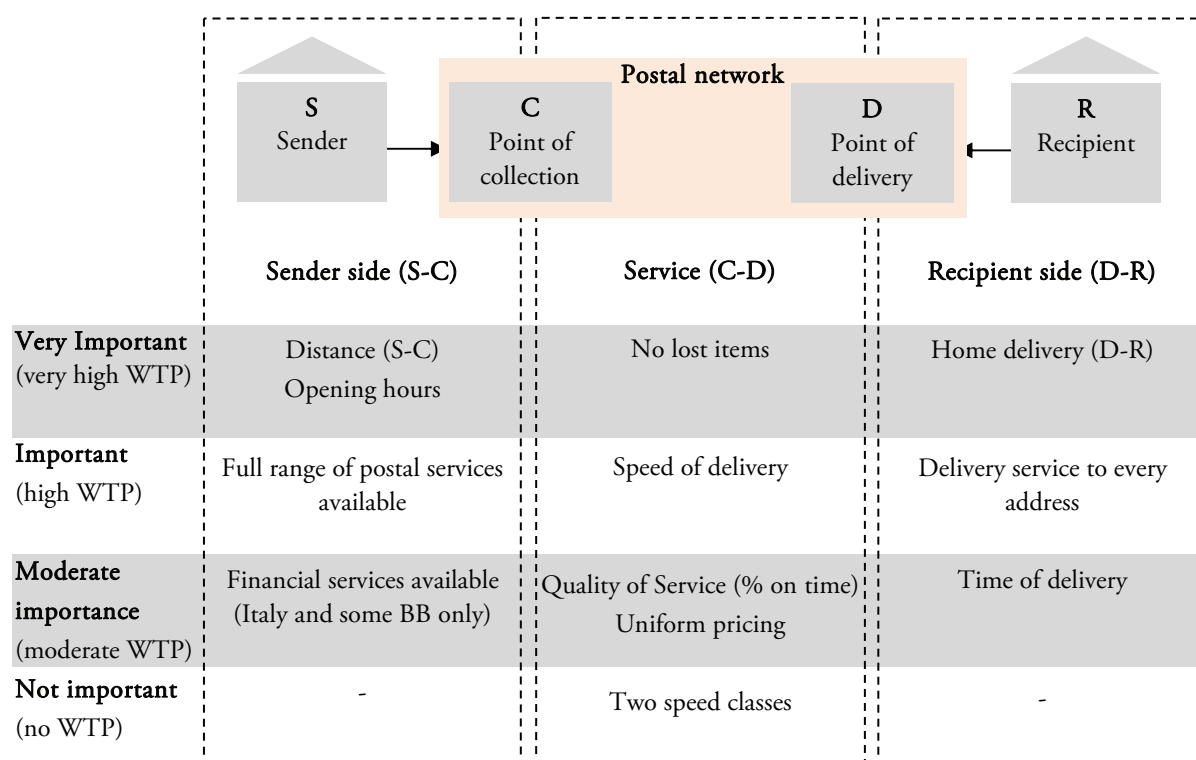


Figure S.2 Importance of key postal service attributes for consumers

The findings are in line with the prediction of the economic framework. All attributes that provide either direct utility (reduce transaction costs) or indirect utility (network externalities in the two-sided postal market) have revealed substantial WTP estimates. In particular, all output-oriented attributes are valued by the customers, and these results support the economic framework as a baseline to understand the expectations from postal services. Looking more closely at the data collected from the background questions, two issues deserve special attention.

First, it is of interest that WTP appears to be independent of sending and receiving patterns within consumer groups; net senders have about the same preferences as net recipients. This underpins the view that postal markets are two-sided and that network externalities are very important in this industry. Senders do care about the comfort provided on the recipient side, and the services offered on the sender side are important to recipients. Otherwise, net-senders would set higher priorities for service attributes that are relevant on the sender side and vice versa with net-recipients.

Second, we were interested in understanding whether e-substitution has affected consumer preferences. To account for the different degree of intermodal competition between letters (against electronic communication, “e-substitution”) and parcels (no alternatives) we have presented separate, but otherwise identical choices to the respondents (Experiment 1, letters; Experiment 2, parcels). In addition, we have collected extensive background information. In absolute terms, the WTP is much higher for parcels than for letters. In relative terms (against the price of the baseline product), there are still significant differences, albeit not that accentuated. As highlighted above, traditional letter service attributes such as speed and on-time delivery remain important for big businesses mainly.

This may indicate that SMEs and consumers already use different channels than big business to satisfy their most important communication needs.

Moreover, in our sample only 2% of business respondents and 6% of consumers had no internet access at all. The lowest figures are 19% for vulnerable people and 22% for ages over 65. Hence, a very large majority of every consumer group can use electronic substitutes to communicate. Against these rather high internet penetration rates, the result that big business still exhibit relatively high WTP for letter services is somewhat surprising. If this valuation persists, then this may be interpreted as good news for postal operators, as the substitution potential from sending households is limited (mainly a generational effect within small C2X flows).

A somewhat surprising side result is that e-substitution has not eroded the WTP for next day letter services. This could have been expected since electronic delivery takes place instantaneously. The results are confirmed by the background questions where faster delivery was suggested as a service improvement in the first place, with respondents under 35 being most likely to suggest faster deliveries. It remains open, however, whether respondents had letters or parcels in mind. An interpretation may still be that people who are used to instantaneous electronic delivery expect the same for physical deliveries.

People under 35 from Sweden and living in rural regions are most likely to buy goods online. This is consistent with internet penetration rates (99% under 35, 97% in Sweden) and the high opportunity cost of shopping for residents living in rural regions. We see that Italians are least likely to purchase goods online, which may be because of their relatively low WTA for lost items (low trust in domestic parcel services, see above). Based on our results and anticipated generational shifts, further increases in internet purchases and hence parcel flows are likely to happen.

Regulatory implications

Postal services are to be understood as a platform for the exchange of information and goods between citizens, consumers, businesses and governments. This platform will provide the highest utility for the economy if it ensures ubiquity and adequate accessibility on the sender and recipient side with a quality service connecting the two sides of the market. On the sending side, customers expect postal collection points within reasonable distance with customer oriented opening hours. On the recipient end, the focus is on a service to all addresses, preferably to the doorstep. The quality service should avoid any loss of items and, as a second priority, allow for fast deliveries throughout the country, possibly next day, at uniform prices. It can be expected that such services will be offered in the market place where the WTP (accept) of customers for a service attribute exceed the additional (avoided) cost of the postal operator for the foreseeable future. Where this is not the case (e.g. because of too high costs or problematic market forces), policy makers may opt for universal service regulations. Such interventions may be considered in particular in those market segments where the operators do not offer a service element even though its WTP exceeds its cost. As cost considerations are beyond the scope of this study, thus its implications for regulation remain on a high level.

Generally speaking, we have found rather minor differences in the basic valuation of postal service elements between small and medium businesses, and non-vulnerable and vulnerable households. These are the consumer groups that can expect the least protection from a

fully liberalised European postal market. As a consequence, we recommend that a postal service policy should be focused around SMEs and households altogether. It is important to note that these two segments overlap in important aspects with the preferences of big businesses, including accessibility and uniformity on the sender and recipient ends of the market. Interestingly, big businesses even exhibit the highest WTP for on-time next day letter services.

This may allow for rather light generic regulatory requirements.

As all output-oriented attributes exhibit significant and predominantly high WTP estimates, we recommend formulating any regulatory service requirements in an output-oriented way² so the regulations are directly relevant to the customers. Moreover:

- Given the importance of proximity and convenience to customers, on the sender side regulations may give floors for the distance (or time) of citizens to postal services and opening hours of those services.
- Given the importance of home delivery for recipients, regulators need to be careful when considering derogations on home delivery on the recipient end. Exceptions for home delivery (but not for the delivery per se) may apply where incremental delivery costs of a household exceed a certain ceiling.
- With regards to the service from the point of collection to the point of distribution, our study shows that low levels of lost items are extremely important to consumers. In member states where lost items are an issue, a first priority may be regulations that reflect the consumer needs in this area.
- If regulation is required to the speed of service, our findings would suggest that such regulation could focus on one speed class as compared to two or more.

Methodological considerations

One of the objectives of this study was to develop a methodology and learn lessons from the application of that methodology. Below we consider methodological successes of the study and considerations for future studies.

Methodological successes

We identify the following successes of the methodology employed for this study:

- We felt that it was essential to have an overarching economic framework for understanding consumers' underlying needs for postal services to ensure a coherent study design; this framework was helpful in informing the attributes to be included in the choice exercises, which was particularly challenging, given the range of postal services available to consumers. We believe that it is important to focus on service attributes experienced by consumers, e.g. speed of delivery, rather than input-oriented features, which may not impact the service actually experienced by users, e.g. frequency of delivery.

² As proposed in Jaag and Trinkner (2011b).

- The survey methodology by phone–post/e-mail/fax-phone approach worked well, ensuring that all respondents, including those without internet access, were able to participate in the study; also it meant that all respondents were able to see the choice exercises and have the support of an interviewer, if required.
- We found that respondents were able to consider a broad range of postal service attributes for letter and parcel delivery in the choice exercises.
- The cognitive and pilot testing were important parts of the survey design process and the resulting questionnaire and choice exercises were improved as a result of the pilot testing process.
- The background information collected in the questionnaire provided useful and interesting supplementary data, which allowed a more nuanced understanding of the resulting valuations in some contexts.
- The results from the choice exercises provide monetary values (and their significance) for each of the different service levels tested in the choice experiments for Swedish, Italian and Polish business and resident consumers, providing detailed information on the value of these attributes for policy makers.

Considerations for future studies

As a result of applying the methodology developed in this study we have identified a number of issues, which may also be relevant for future studies. These are discussed below.

Were the sample sizes big enough?

The standard errors of the resulting valuations generally are quite large, particularly when we take into account that respondents have provided multiple choice observations as part of the survey. In this report we present both the resulting valuations and their 95% confidence interval, on the basis that these are the usual standards for academic publications, but perhaps this level of confidence is more stringent than what is required by policy makers in this domain. However, even 90% confidence levels would still remain large.

In addition to having a wide range of possible values, having large standard errors also means that we are less likely to observe significant differences in valuations for specific attributes across different market segments. More precise estimates would mean that studies would be more likely to identify differences in preferences for different segments, for example by age or income group, and understanding such differences may be important for policy makers.

We therefore would recommend larger sample sizes in future studies, particularly for businesses, given their importance in the postal market. We recommend specifying quotas for SMEs and larger businesses and for vulnerable and non-vulnerable residents.

We note that the valuation measures would also be improved with better measures of cost sensitivity, which may have occurred with investigation of a larger price range.

Did we test a large enough cost range?

Detailed examination of the choices that respondents made in the survey indicated that a substantial proportion of resident and business respondents were choosing the most expensive options in the SP choice exercises. This means either that the resulting cost

sensitivity may be too low, with a risk that the resulting valuations are then too high, or that other attributes have dominated the choice experiments (e.g. percentage of lost items). Moreover, better estimates of cost sensitivity would reduce the standard errors of the resulting WTP valuations. In future studies we therefore recommend considering testing larger price differences as well as looking at the influence of dominant alternatives, which is discussed further below.

Were the respondents able to deal with the two-class options?

The results from the first and second experiments indicate that businesses prefer next day delivery or a two-class service including next day delivery. Businesses, particularly large businesses, place a reasonably negative value on two-day and three-day services where no next day option is in place. However, speed of delivery seems to be less important to residential consumers. Also, we see that large businesses do not favour non-uniform delivery options, whereby letters or parcels in an urban area may be delivered the next day whereas deliveries to more rural areas may take longer, compared with a single class next day service; residential respondents and SMEs are more ambivalent on this issue.

However, we were somewhat surprised to see that neither business nor residential respondents showed a preference for a two-class service including a next day service option, compared with a next day only service. One reason may be that respondents found these options more complex than the one-class options. This is something that could be tested in future studies through qualitative research with groups of business and residential consumers. We also saw this pattern in the pilot survey analysis and at that stage amended the calculation of costs for the two-class options to ensure that we presented options where the two-class costs would be both less expensive and more expensive than the one-class options. Reviewing the costs in the main survey confirms that the costs of the two-class options were indeed sometimes cheaper and sometimes more expensive than the one-class costs.

The operators in Europe with the highest volume per capita all have two-class options, so this is an important issue that requires more research.

Was the percentage of lost letters and parcels dominant in the choice exercises?

The most important service attributes in the experiments were the percentage of letters and parcels which are lost. We increased the range of lost letters and parcels tested in the experiments after the pilot survey to make the choices “more different” after comments from respondents that too many of the choices looked the same. Perhaps in future smaller ranges could again be tested (because we made other changes after the pilot survey, including dropping the Saturday delivery attribute). Alternatively, increasing the prices in the experiments may help to make the lost letters and parcels less dominant, but clearly the level of lost letters and parcels is very important to consumers.

Did the survey include enough respondents who did not have internet access?

Although as part of the model analysis we examined whether internet access influenced consumers’ preferences for postal services, we did not find any significant differences between those respondents with internet access and those without.

However, we also observe that only 2% of business respondents did not have access to the internet at work and 6% of consumers had no internet access at all, with nine out of ten

having access at home. Although this varied somewhat across the countries, e.g. in Sweden 96% of consumers had internet access at home (in Italy the figure was 91% and in Poland only 86%), in general the levels of internet access were higher than we were expecting, particularly in Poland and Italy. This may have been because people with internet access were more amenable to undertaking the surveys (because they could complete them within one single telephone call). Therefore, if using a phone-fax/post/e-mail-phone approach in future we recommend specifying a quota for respondents who do not have access to the internet, both for vulnerable and non-vulnerable consumers, which would allow a better chance of identifying differences in postal needs between those with and without internet access.

Acknowledgements

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CHAPTER 1 **The importance of understanding consumers' preferences for postal services**

Postal services are an essential means for the delivery of communication, goods and information. Postal services greatly reduce transaction costs between individuals, companies and governments, thereby contributing to the functioning and evolution of relationships, markets and governments. Virtually every citizen relies on postal services as a sender and recipient. Every year, European consumers hand about 135 billion³ postal items over to their trusted postal operators, which deliver these items throughout the European Community with over 1.8 million⁴ employees.

Postal services have steadily evolved over centuries as the only means for long-distance communication between people ("telecommunication"). Whereas earlier signalling-based telecommunication technologies such as telegraph and fax have influenced the demand for postal items to a limited extent, the age of digitalisation with the invention and evolution of the internet have had, and are still having, a measurable impact on people's need to send and receive postal items. On the one hand, letter mail volumes are steadily decreasing in most European countries and there is little doubt that this decline is to be attributed to the substitution of letters by electronic alternatives ("e-substitution"). On the other hand, the delivery of physical goods such as small packages and parcels is likely to be of increasing importance. "E-commerce" has taken off, and in line with globalisation, both personal and business relationships are far more widespread than they used to be. These trends reveal themselves by growing parcel volumes in most member states.

E-substitution and e-commerce are likely to have an impact on consumers' needs and preferences for postal services. In the case of regulated postal services, however, such developments in consumer demand are not immediately matched by changes in supply, but must be identified and addressed through policy decisions. Given the significant changes brought about by electronic communication, there is a need for better information on how these developments have affected demand for postal services and consumers' needs from a postal service.

³ http://ec.europa.eu/internal_market/post/index_en.htm.

⁴ Based on Copenhagen Economics (2010), with reference to European Social Dialogue Committee of the Postal Sector (2010) *Joint Statement on Postal Sector Evolution*.

The need to understand customers' preferences is acknowledged by the European Commission's Postal Directive (Directive 97/67/EC as amended by Directive 2002/39/EC and by Directive 2008/6/EC). While specifying the minimum requirements for the provision of the universal postal service that all member states must ensure, the Directive also states in Art. 5 that the "universal service shall evolve in response to the technical, economic and social environment and to the needs of users".

Against this background, various member states have started initiatives to better understand their citizens' needs and preferences for postal services. Examples include France and the UK. While every study is very insightful in itself, the methodologies differ in important aspects. As a consequence, the results vary greatly, and comparisons among member states are hardly meaningful.

Moreover, measuring consumer preferences in the two-sided postal market that links senders and recipients is a challenging task that needs careful consideration based on a sound economic understanding of the underlying needs of postal consumers. This study aims to help member states to better understand their people's needs and preferences for postal services. To this end, the study develops a methodology for measuring consumers' preferences and implements it in three member states: Italy, Poland and Sweden. Based on the findings and lessons learned, the study provides a toolkit for member states that wish to conduct quantitative market research to better understand their citizens' needs for postal services. The results of the study also help to inform the public debate in Europe on what people expect today from postal services.

1.1 **Structure of the report**

The rest of this report is organised as follows. Chapter 2 provides a general overview of quantifying the value of non-market goods and sets out the methodology and requirements for its implementation. Chapter 3 sets out the application of the methodology to three member states: Italy, Poland and Sweden. Chapter 4 sets out the findings for these member states and Chapter 5 sets out the conclusions and recommendations from this study and provides a toolkit for other member states that wish to conduct quantitative market research to better understand their citizens' needs for postal services.

CHAPTER 2 **Our methodological framework for measuring consumers' preferences for postal services**

This chapter sets out the methodological framework for the study. First we describe methodologies for valuing non-market goods and services, recommending the use of SPDCEs for quantifying consumers' preferences for postal service attributes. Next we discuss an economic framework for understanding the underlying needs of postal consumers, which also guides the methodological framework for the study.

2.1 **Valuing non-market goods and services**

Value is defined as: “the material or monetary worth of a thing; the amount at which it may be estimated in terms of some medium of exchange or other standard of a similar nature”.⁵ Within the context of valuing services we are frequently attempting to express value in monetary terms. The notion of services having a monetary value brings up the concept of a market, where services can be bought and sold, and where the price paid can be used as a reasonable estimate of the value of the services. However, in the case of public services – or more generally where incomplete markets are present – such a market may not exist. Of course, a public authority may wish to make adjustments to the ability of its electorate to pay, weighting money equivalents for poorer people more highly than those for richer people, but a basic monetary value is usually required as an input to such procedures in any case. Furthermore, the price of a product offered in the market place is usually not broken down into the individual service elements of the product. Hence the value of the various service elements is often unknown, as there is no market for them individually.

One way of obtaining valuations for non-marketed goods and services is to collect SP information on citizens' or consumers' WTP for these services. SP data are collected through specially constructed questionnaires and interviews designed to elicit estimates of WTP for, or WTA, a particular outcome. Broadly there are two widely used approaches for collecting SP data: contingent valuation (CV) questions, which ask individuals directly what they would be willing to pay for the service improvement (or alternatively what they would be willing to accept as compensation for service deterioration), and DCEs, where

⁵ Oxford English Dictionary, <http://www.oed.com>.

respondents are asked to choose between hypothetical service alternatives to elicit WTP for service attributes (see Box 2.1).

Box 2.1: Using stated preferences for valuing public sector services

Stated preference discrete choice experiments (SPDCEs) provide an analytical method for understanding and predicting how individuals make decisions between discrete (mutually exclusive) alternatives, for example, whether to travel by bus or train. It is a technique that has been widely used in transport economics and is increasingly used in environmental and health economics.

Within the DCE framework, it is possible to investigate the importance of specific drivers of consumers' choices. These modelling techniques provide empirically derived data for making informed decisions, providing insight into the trade-offs that customers are prepared to make. For example, how important customers value postal deliveries five days a week.

In a SP discrete choice experiment, hypothetical choice situations – where each alternative is described by a set of attributes (number of deliveries per week, treatment of packages, price) – are presented to each individual. Each of the attributes in the experiment is described by a number of levels. The attribute levels are combined using principles of experimental design to define different service packages, which respondents evaluate in surveys by choosing one of the alternatives within the choice situation. Of key interest for this study is the trade-offs that customers are prepared to make between variations in service elements with variations in price. This provides a measure of WTP or WTA, which provides a quantification of the customer benefits to feed in to a cost-benefit analysis.

SPDCE data also has many useful statistical properties as the way the hypothetical choices are presented can be controlled so that there is little or no correlation between explanatory variables, and small and large variations in explanatory variables can be tested. The technique is also data efficient because more than one choice scenario can be presented to respondents within one interview. The one drawback of the technique is that such data are based on what individuals state they would do in hypothetical situations. Careful design, ensuring that realistic choices are offered to respondents, can help mitigate problems.

The UK Treasury recommends the use of stated preference discrete choice experiments for valuing public sector services (<http://greenbook.treasury.gov.uk>).

In considering the practical application of these techniques, the academic literature has largely converged around the use of SP discrete choice (or stated choice) experiments (SPDCEs) on the basis that they present individuals with a choice task that mirrors the choices that people make in real life. Furthermore, SPDCEs provide a more direct route to the valuation of the characteristics or attributes of a good, and of marginal changes in these characteristics, rather than the value of the good as a whole. Table 2.1 compares a number of characteristics of CV and stated choice methodologies.

Table 2.1: The benefits and shortcomings of CV and SPDCEs for eliciting valuations

Contingent valuation (CV)	Stated preference discrete choice experiments (SPDCE)
May present cognitive problems to respondents	Correspondence with real market choices may make SPDCE easier for respondents to understand
Typically one response collected from each individual	More efficient – typically multiple responses collected from individuals
Moderate design and analysis costs	Higher design and analysis costs
Argued that CV should be chosen when WTP for the good or service as a whole is required (Bateman et al, 2002)	Typically used to value service or good attributes, but consumer surplus methods can be used to estimate the value of the entire good or service (Daly and Burge, 2007)

For the current study we have recommended the use of SPDCEs to quantify consumers' preferences for postal services. We recommend the use of this approach because it is more direct than CV methods for the valuation of the characteristics or attributes of a good or service, exactly what is required in this study. For this reason, the use of SPDCE is growing in the postal sector, particularly in the area of quantifying consumer priorities. In Section 3.1.2 we present a summary of some recent studies which use CV and SPDCE methods to quantify consumers' priorities for postal services. We note that the aims of these studies differ, influencing the CV methodology used and attributes which have been examined in each study.

For this study we have designed choice experiments, which have been presented to residents and businesses in three member states. As well as participating in the experiments, respondents have been asked a number of background questions about their personal characteristics, current use of postal services and access to the internet, the answers to which allow us to examine how resulting service valuations vary across resident and business consumers.

We have analysed the resulting data using discrete choice modelling methods to obtain valuations of different components of postal services for residents and businesses (see Box 2.2 for further details of discrete choice modelling). The analysis examines how these valuations vary across resident and business groups, specifically focusing on differences between vulnerable and non-vulnerable residents and SMEs and large businesses.

Box 2.2: What is discrete choice modelling?

Discrete choice modelling provides an analytical framework to analyse and predict how consumers' choices are influenced by the characteristics of the alternatives and the characteristics of the people making the choices. Because not all aspects of human behaviour can be fully understood, these influences can only be modelled as affecting the *probabilities* that people will make certain choices; the possibility always remains that specific individuals will not make the choices indicated as most probable by the model. Nevertheless, for the total population, general effects can be found and predictions can be made with reasonable accuracy.

The basic tenet of discrete choice modelling is utility maximisation: given a set of alternatives, people choose the alternative that brings them the most utility. Functions describing the utility of each choice alternative available to a consumer are therefore constructed, incorporating explanatory variables like price and quality, multiplied by coefficients (β) that reflect the relative value (weight) of the service terms. It is the model coefficients (β) that are estimated in the model calibration procedure.

The discrete choice model is based on the assumption that the respondent chooses the alternative with the highest utility. The estimation can therefore be conducted within the framework of random utility theory, accounting for the fact that the analyst has only imperfect insight into the utility functions of the responding households and businesses.

The most popular and widely available estimation procedure is logit analysis. The logit model predicts the probability of choice of each alternative by the *logit formula*, which gives the probability (P) of choosing alternative 1 from a set of k alternatives as:

$$P_1 = \exp(V_1) / \{\exp(V_1) + \exp(V_2) + \dots + \exp(V_k)\}$$

In which the V 's represent the utilities of each of the alternatives 1,2,..., k. Typically they are described by the characteristics of the alternative and characteristics of individuals.

The logit model estimation procedure produces estimates of the model coefficients, such that the choices made by the respondents are best represented. The standard statistical criterion of maximum likelihood is used. Both the values of the coefficients (in utility terms) and the significance of the coefficients are output (see Ben-Akiva and Lerman (1985) for details).

The process of model estimation is one of defining the utility formulations that best explain the choices made and then of estimating the β values that give the maximum likelihood for that specification.

If the cost of the service, e.g. stamp price, is included as an attribute, then the ratio of other attributes and cost provide indirect estimates of WTP (or WTA), for example WTP for improved delivery services.

2.2 Understanding consumers' priorities for postal services

A framework for understanding consumers' underlying needs for postal services is necessary to ensure a coherent study design. This chapter offers an understanding of these needs. Its conclusions are incorporated into the implementation of the SP design in Chapter 3.

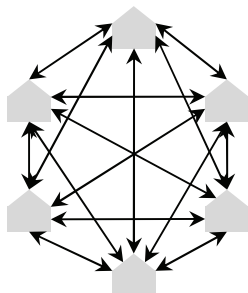
2.2.1 The role of postal services

Postal services play an important role in economies. The importance of these services can be illustrated using traditional and more modern paradigms.

Traditional role: "economic enabler"

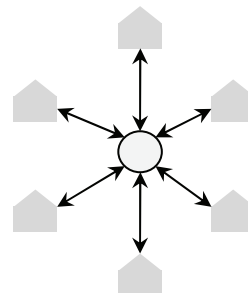
Postal services enable other parts of the economy by overcoming physical distances between senders or sellers and recipients or buyers at low transaction costs. As illustrated in Figure 2.1, postal services act as intermediaries that consolidate mail of different senders. Thereby, economies of scale, scope and density are exploited and, as a result, transaction costs are reduced greatly for the delivery of letters and parcels compared with the delivery of a single item.

Delivery without intermediary



Number of links: $(n, 2) = 15$

Delivery with intermediary



Number of links: $n = 6$

Figure 2.1: The role of postal services as a delivery intermediary, based on Jaag and Trinkner (2011b)

As a consequence, and as illustrated in Table 2.2, postal services are an integral part of the daily commercial activities and can be seen as an "economic enabler".

Table 2.2: Basic steps in commercial activity and the role of postal services

Generic business process	Role of postal services
(1) Advertisement	Addressed and unaddressed mail
(2) Closing a deal	Letters, registered mail
(3) Delivering	Parcels, periodicals & newspapers
(4) Billing	Invoices, reminders, registered mail, writs
(5) Payment	Checks, postal counters, postal payment systems
(6) Cancellation (of subscriptions)	Letters, registered mail

Source: Dietl and Trinkner (2009).

Residential customers may benefit from many of these same services, by being able to pay bills, send or receive deliveries and post letters to friends and families.

More recent role: “transformer of last resort”

More recently, postal services increasingly ensure the link between the physical and the digital world. They act like “transformers of last resort”, providing a “physical insurance” of digital means. This is especially true where post offers financial services too.

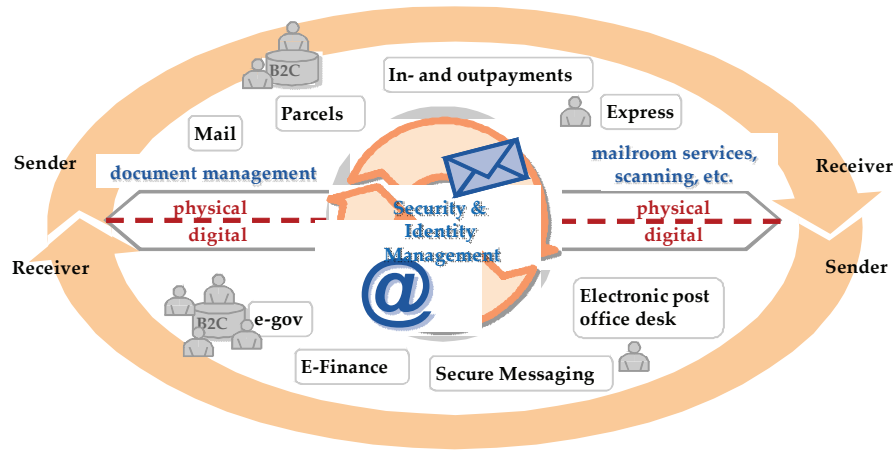


Figure 2.2: Posts as transformers of last resort, based on a depiction from Swiss Post

In this light, post contributes to the evolution of digital means by providing a physical backup for the people.

2.2.2 Underlying needs of postal services from an economic perspective

As discussed in Section 2.1, SPDCEs elicit the WTP for elements of the postal service based on a representation of utility U that users derive from postal services. It is therefore important to understand the utility consumers gain from postal services in economic terms.

In the postal sector, it is necessary to distinguish:

- item-specific utility that is proportional to the quantity of consumed postal services from a household (or business) as sender q_s and/or recipient q_R , and
- non-item specific utility that consumer derive from positive external effects E of the postal network.

Utility from postal services is hence likely to be of the following form (for an early outline cf. Willig, 1979):

$$U(q_s, q_R, E).$$

In order to understand the underlying needs for postal services, we summarise the relevant elements of these three components based on the overview provided in Jaag and Trinkner (2011b).

Item-specific utility: transaction costs

As elaborated in Section 2.1, a key role of postal services is the reduction of transaction costs in the delivery of items of correspondence and goods.

In economic terms, senders and receivers derive utility from every item sent or received, in that postal services are utilised by a sender as long as the surplus from consumption is

positive: postage prices plus the opportunity cost of using the postal network are lower than the utility of sending mail and the total cost of delivering mail on one's own. On the recipient side, the utility of receiving mail must exceed the opportunity cost of emptying the mailbox (assuming that postal operators do not charge the recipient).

Correspondingly, the basic need on the sender side may be good *accessibility of postal collection facilities* to reduce the opportunity cost of using the postal network (post offices, letter drops, etc.) and a *reliable, affordable service at reasonable quality* that connects recipients in such a way that receivers will indeed receive the items sent within a reasonable time limit. Lower prices will translate directly into higher consumer surplus. Similarly, recipients may desire *good accessibility of the place of delivery* in order to be willing to empty the mailbox, and a *reliable, affordable service*, in order to choose to order goods online.

According to Crew and Kleindorfer (1998), *uniform pricing* for low-cost items may be understood in the context of transaction costs, as uniform pricing reduces uncertainty and time for senders. Moreover, small senders might have a preference for uniform prices as such an obligation would prevent the postal service from exploiting its bargaining power and imposing a rate structure with high prices for small customers and low prices for business customers.⁶

Utility based on the network: externalities

Utility based on the postal network is a more subtle source of utility. In the postal sector, it arises in the context of external effects.

External effects are present when one economic agent's action affects the action of another agent in the economy. One agent's action can have a positive or negative externality on other agents.

In particular, the two-sided market approach⁷ is of high relevance in the postal market. Many network industries, such as telecommunications, cable networks and postal markets can be understood as being platforms linking two groups of users: senders and recipients. The broader the one side of the platform, the greater the utility on the other side of the platform. Hence, the platform provides utility for senders and recipients independent of that provided by the service.

Postal markets are generally viewed as two-sided (e.g. Panzar, 2006; Cremer et al., 2008; Jaag and Trinkner, 2008). Hence, postal operators are to be considered as platforms (intermediaries) that link senders and recipients, as well as sellers or businesses and buyers

⁶ As a corollary, uniform pricing can be seen as a means for redistribution. Following Cremer et al. (2008), uniform pricing obligations can be seen as a second best redistributive pricing policy to achieve the desired wealth distribution. Uniform pricing has at least two redistributive effects, from business customers (low cost, high bargaining power) to private customers (high cost, low bargaining power) and from densely populated regions to remote regions with high-cost delivery. Crew and Kleindorfer (2002) see the redistribution motive as a major driver of deregulation in network industries (deregulation as a means to abolish uniform pricing).

⁷ Where lump sum price redistributions between market sides affect overall demand, markets are said to be two- or multi-sided (Rochet and Tirole, 2006). These pricing implications are crucial, and often one market side remains heavily subsidised.

or clients. The larger the recipient base, the greater are the business opportunities on the sender side and the more attractive are letters as a communication platform. Conversely, recipients may be more likely to empty their mailbox if they expect a large sender base. Hence, senders may have an interest in a *dense delivery network with good accessibility for recipients*. Recipients in turn might desire *good accessibility for competitive postal services for senders*. Note that in contrast to the volume-dependent utility discussed above, these preferences relate to the other side of the market.

Cremer et al. (2008) show in their two-sided market model that a profit maximising postal operator will choose a suboptimal low quality in delivery (coverage or reduced frequency of service) leading to a decrease in demand.⁸ In anticipation of the postal network profit maximising behaviour, consumers may have a *preference for full coverage and quality standards*.

Jaag and Trinkner (2008) discuss the implication of the two-sidedness of the postal market on pricing and underline the importance to subsidise the recipient side of the market. Their results support the “sender pays principle” of today’s European postal markets with its *free home delivery* as opposed to the “receiver pays principle”, which was at the origin of most postal services. Up to the reform of Rowland Hill in the UK in 1840, receivers had to pay a fee to receive a letter. The great success of the reform quickly inspired postal services across Europe to follow the UK example, and with time new product categories such as direct mail emerged. Therefore, senders might prefer to pay higher postage *ceteris paribus* in order to ensure free home delivery for their recipients.⁹

The notion of two-sided markets may lead to a preference of consumers toward *uniform pricing*, as illustrated by an example introduced by Jaag and Trinkner (2008). Postage is usually charged to the senders. However, the charges are often passed on to the recipients, e.g. by banks or distance mail order companies (“pass-through”). If these pass on single piece prices instead of wholesale prices collected by the postal operators (which is increasingly the case), the price signals in the market (single-piece price) are higher than the effective (wholesale) prices charged by the platform. Under uniform pricing, there is no difference, consumers are better off, and overall demand will be higher and closer to the socially optimal level. Consequently, the reform of Rowland Hill complemented the sender pays principle with the introduction of uniform pricing (“Uniform Penny Post”).

⁸ The model assumes that senders’ surplus depends on the number of households that can be reached at a certain level of service. When a call externality is introduced into the model (increasing utility of addressee in number of mail items received), the results are reinforced.

⁹ Cf. Anson and Toledano (2008) for a discussion of effects in African countries where delivery is not free of charge for recipients. As Jaag and Trinkner (2008) summarise, recipient pricing is likely to have a strongly negative impact on direct mail. Moreover, market research by Friedli et al. (2006) indicates that up to 35% of customers who prefer a free P.O. box delivery over costly home delivery would not empty their P.O. box any more.

In the context of externality a more opaque view is that the postal network presents the character of a public good, independently of the services offered to the consumers (e.g. social cohesion, functioning of democracy, ethical issues). Cremer et al. (2008) argue that such a network can be understood as producing “externalities that are non-trivial in nature”. Hence special features of postal networks such as traditional post offices may be seen as a mechanism to provide the public good (even if the mere postal services were private goods). Public goods might therefore cause a preference of consumers for postal infrastructures per se, e.g. a *traditional post office in rural areas*.

2.2.3 Summary and remarks

There are various sources of utility that postal services may provide to consumers:

- First and foremost, postal services reduce transaction costs between senders and receivers. Thereby, *accessibility of collection and delivery* as well as the *price, reliability and quality¹⁰ of the services* are the crucial factors that determine the savings in transaction cost.
- Customers with smaller mailing requirements might favour *uniform prices* as this reduces transaction costs further, prevents postal services from exploiting their market power, and prevents large senders from passing through postage costs through an increase of the effective rate.
- The two-sided postal market is likely to exhibit positive externalities that induce additional utility for senders and receivers from a *competitive postal platform* with *full coverage* that connects every sender to every recipient with *free home delivery*.
- If the postal sector has the character of a public good, consumers might have preferences for features of the network such as *post offices*.

These findings will guide the selection of attributes in Section 3. Moreover, it will be necessary to account for the possibility that consumers’ needs may be provided by electronic alternatives as well.

As a corollary, the analysis supports the use of SP experiments rather than revealed preferences. As actual postal usage is mainly determined by the transaction cost argument (direct utility), methods relying on revealed preferences might underestimate the true preferences of consumers, which are likely to be stronger because of their positive network externalities.

In light of the implementation of the SP analysis in Chapter 3, it will be important to design the choice experiments in a way that:

- reflects the two-sidedness of the postal market. Thereby, it must be understood what kind of externalities are part of the WTP revealed by consumers. These will vary depending on the framing of the choice experiments (“which alternative do you prefer”, “which alternative would you prefer when sending a letter”, etc.).
- takes the role of intermodal competition in the delivery of communication into account.

¹⁰ In this notion, quality includes speed of delivery.

- ensures the choice experiments are mainly “output-oriented”, i.e. they reflect services provided to senders and receivers rather than input–output features of the postal network (e.g. the number of sorting centres).

These three issues will be discussed in more detail Section 3.1.1.

CHAPTER 3 **Implementing the valuation methodology in three member states**

This chapter describes the development of the SP surveys and survey methodology in three member states. We describe how the attributes to be tested in the choice experiments are chosen, the key aspects for designing the choice experiments, key market segments, sample sizes used, pilot testing and the survey methodology. We also set out the criteria used for choosing the three member states for testing the methodology.

3.1 **Defining the attributes to be tested in the choice exercises**

A key aspect of the SP methodology is the specification of the attributes and attribute levels to be tested in the SPDCEs. Ideally, we would include all meaningful attributes that describe postal services. However, in practice we are limited to around 15 attributes that can be evaluated by any one individual, so as not to overload respondents with information. This is particularly important because the study will incorporate vulnerable people.

In order to be able to compute WTP it is essential that price is included as one of the attributes in the choice experiments. We are seeking to obtain consumers' WTP for improved services (or WTA reductions in payment for reduced services), and therefore we need to examine prices that test consumer' WTP, not the cost of providing such services. Policy makers may then compare the resulting WTP valuations against the costs of providing the services to determine whether provision of such service levels is justified, but this is outside the scope of this study. For realism we recommend that the prices be varied around current prices, in each member state.

In order for consistency and comparison of findings, we recommended that the same attributes are tested in each of the three member states, although the service costs are presented in the appropriate currency for each member state.

As part of the study, we used four sources to inform our recommendations on the attributes to be incorporated in the SPDCEs:

- an economic understanding of the underlying needs for the provision of postal services and consumers' priorities for these services (discussed in Section 2.2, and elaborated further below)
- review of attributes (and levels) tested in other studies

- review of current minimum levels of obligation (USO) for specific postal attributes across member states to provide information on minimum service attribute levels and how the levels of these may vary across member states
- views on postal service elements that are important to consumers from stakeholders in the member states where the quantitative research will be undertaken.

The findings from each of these sources are summarised below.

3.1.1 Implications of our analysis of the underlying needs of postal services

As outlined in Section 2.2, the study must ensure that three issues are accounted for appropriately: the two-sidedness of the postal market, different exposure of letters and parcels to intermodal competition, and a service-output orientation of the choice experiments.

Accounting for the two-sidedness of the postal market

The insight that the postal market is a two-sided network calls for an analytical distinction of the postal network along three main features that are interrelated in important ways and hence cannot be analysed separately. Figure 3.1 illustrates these three features of a postal network:

- **Sender side:** Accessibility of S to the services offered in C (point of collection)
- **Recipient side:** Accessibility of R to the services offered in D (point of delivery)
- **“Platform” or “Connection” C – D** linking sender and recipient side: Physical delivery of communication (newspapers, most letters) and goods (parcels, express, some letters)¹¹

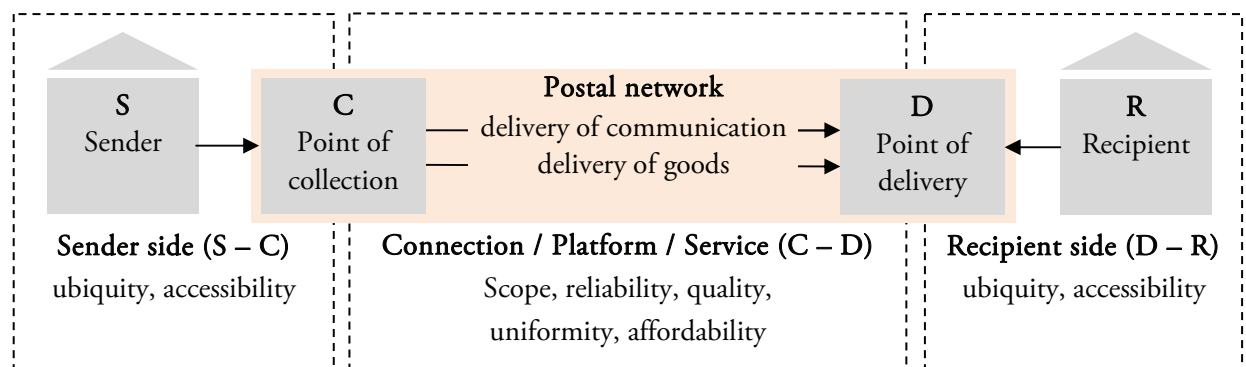


Figure 3.1 Two sides, one platform, based on Jaag and Trinkner (2011b)

As elaborated in Section 2.2, the ubiquity and accessibility dimensions will be crucial issues on the sender and recipient sides. For the platform (C – D), the relevant dimensions include the scope of services provided (e.g. letters, parcels) and their reliability, quality, uniformity and affordability.

A first issue is the manifold interdependencies between these features and dimensions. For example, the end-to-end speed of delivery is determined by as many as seven attributes: accessibility, frequency of collection and the latest clearance on the sender side,

¹¹ The distinction of 3a) and 3b) might be of importance as there is intermodal competition of digital means in 3a).

accessibility, frequency and time of delivery on the recipient side, and the time the platform needs to send an item from C to D. Hence, a service feature such as “frequency of delivery” contains no real information to the consumer sitting on his sofa and wondering when the birthday parcel sent earlier in the day will reach its destination. Rather, it is a rough proxy for speed of delivery based on an assumption of how the other four service features are defined.

We have hence decided to opt to test attributes that are directly meaningful to consumers, for example a speed indication rather than the number of collection or delivery days. As we see below, this is also compatible with a general “output-orientation” of the attributes.

A second challenge is to correctly incorporate in the study design the externalities that are exhibited in the two-sided postal market. It will be important to include those externalities that are relevant from an economic policy point of view.

A precondition for the consideration of externalities is the inclusion of both sides into the study, but to compute the WTP jointly for both sides, and to frame the choices such that respondents view themselves simultaneously both as senders and recipients (e.g. “when thinking as of sending or receiving letters or parcels...”). This ensures that double-counting of WTP is excluded, but externalities between sides remain included. To elicit differences between consumptions patterns (items sent vs. items received) and (high volumes vs. low volumes), we will collect information on the how much each respondent sends and uses postal services and we will use this information to investigate whether different users have different valuations of postal service attributes.

With this approach, we do not yet control for possible public good externalities. We therefore include post offices implicitly in one attribute (cf. Section 3.1.5, services available at point of collection).

Accounting for platform competition between letters and digital means

The digitalisation trend of the past decades has resulted in a number of new technologies. Based on these technologies, letters are increasingly replaced and substituted (“e-substitution”) and consumers use new channels to buy their products, which increases parcels volumes (“e-commerce”). The new substitutes and complements to postal services will continue to exercise pressure on customers’ needs and preferences, as revealed by the development of postal volumes.

Recalling the analysis of the underlying needs for postal services earlier (Section 2.2), digital means are likely to change the opportunity cost of sending mail (for example, lower costs for letters that can be sent via e-mail) and the importance of externalities in cases where the other side of the postal market can be reached with electronic substitutes. Similarly, fast letter services may not have the same priority to consumers as in the past as digital alternatives offer instantaneous delivery.

As illustrated in

Figure 3.2, the degree of platform (intermodal) competition with new means is very different for letters (high) and parcels (low). Correspondingly, the WTP for letters and parcels may evolve differently.

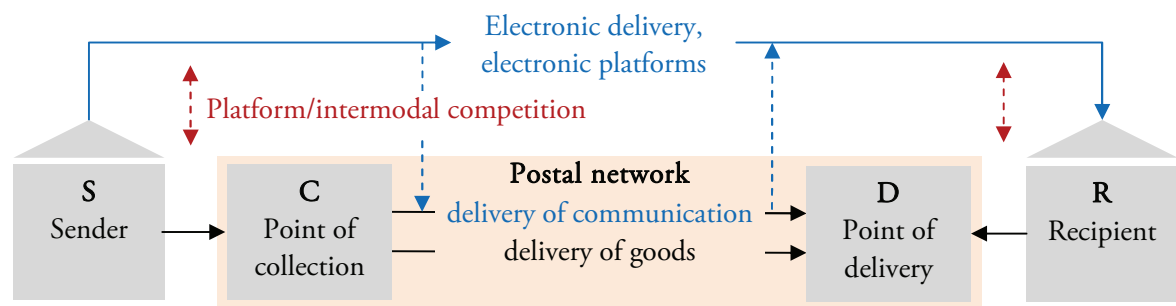


Figure 3.2 Intermodal competition between physical and electronic delivery of communication, based on Jaag and Trinkner (2011b)

The customers' WTP for postal service elements are therefore likely to crucially depend on the availability and usage of digital alternatives.

It will be interesting to see whether there are attributes that exhibit different valuations for letters and parcels. To enable such a comparison, it is important to distinguish in the choice experiments the delivery of communication (letters) and goods (parcels, packages) by using separate, but otherwise identical, choice cards. These differences are likely to be greater where the availability of digital alternatives is higher. The availability will vary from country to country (penetration of internet, e-commerce and e-government, legal status of mail) and from consumer to consumer (IT equipment in place, broadband connection, user know-how, etc.). It is therefore recommended to select member states that differ in digital penetration and e-commerce usage, to control for the availability of substitutes and the legal status of digital signatures, and to collect socio-economic information regarding respondents' individual internet availability and usage.

Output-orientation of attributes

As introduced above, some attributes such as frequency of delivery are meaningful in a broader context only. To get as much information as possible out of a single attribute, it will be necessary to select attributes that are "output-oriented". Such attributes have a direct link to the goodness of the service that consumers experience. This is in contrast to input-oriented attributes that relate to the production of postal services such as the number of sorting and collection facilities or the number of collection and delivery days. Input-oriented attributes may be perceived as proxies for real services attributes such as speed of delivery. It is however better to ask directly for the relevant attributes in an output-oriented way, thereby avoiding the risk that customers are not able to understand the effect of the input-oriented proxies appropriately.

We therefore focus on testing output-oriented attributes.

3.1.2 Review of attributes tested in other postal studies

A number of other European studies have been undertaken to examine and quantify consumer preferences for postal services or USOs (depending on the aim of the studies). Key characteristics of these studies, including the SP methodology, sample sizes and attributes tested, are summarised in Figure 3.3.

From examination of these studies we see that previous studies have focused on a wide range of attributes including:

- speed of delivery and number of classes of services
- delivery frequency
- collection frequency
- time of delivery
- service standards
- evening delivery and Saturday delivery
- access to post offices
- presence of registered and insured services
- opening hours
- uniform pricing
- price.

Many of these attributes are relevant for this study, but many are also focused input-oriented features, whereas we have argued that it is important to focus on services that are directly experienced by consumers. Moreover, the majority of these studies focus on quantifying consumer preferences for letter services, although the Accent (2008) study did examine consumers' preferences for including parcel services in the USO. They did observe a small value for the inclusion of these services in the USO, but they didn't specifically look at the importance of service attributes specifically for the parcel sector.

Thus we remain guided by the economic framework for the specification of the attributes to be tested in the choice exercises.

Study	The Social Value of the Post office Network (NERA, 2009)	Quality of Service and Consumers' Needs: Recent Evidence from France (Cocchet et al., forthcoming)	Main Developments in the Postal Sector: 2008 - 2010 (Copenhagen Economics)	Postcomm: Residential / Business needs from a sustainable universal postal service in the UK (TNS-BMRB)	Postal USO: Value to the Citizen (Accent, 2008)
Country	UK	France	European study - Residential surveys in Austria - Business surveys in all countries	UK	UK
Year	2009	2011	2010	2010	2008
SP Methodology	CV to provide valuations for the post office network as a whole; SPDCE to provide values for specific services. Respondents asked to choose between choices of services provided by postal offices. Cost vehicle was additional taxes paid by the household.	CV	SPDCE	Choice-based conjoint analysis	SPDCE
Framing of choice exercises		Use of direct and indirect trade-off questions to examine consumer preferences	Estimated value of postal services included in the USO, choices based around postal services	Exercise and study focused on understanding postal needs of consumers	Estimated value of USO components, choices based around USO alternatives
Sample	Residents (900) - 100 less mobile - 100 non-urban - 100 age 70 plus - 200 others SMEs (300)	Wave 1: 1317 households 504 businesses Wave 2: 1353 households 500 businesses	Residents (600) - 500 participated in an on-line survey - 100 face-to-face surveys with people without internet access at home Businesses (142)	Residents - 1387 face-to-face CAPI surveys Businesses - 460 telephone interviews with online completion of trade-off questions	Residents - quotas set for vulnerable and non-vulnerable residents Businesses - quotas set for small, medium and large businesses - plus minimums by volume categories - plus minimum number of bulk mailers
Attributes tested	SP DCE Experiment: - Social Benefit payments - Licensing services - Bill payments - Banking and government saving services - Postal services - Other services - Additional tax paid by household	CV questions to examine tradeoffs between: - Improved reliability for J+1 (84.7% to 98%) - Increase in price - Reduction in days of delivery (6 to 5) - Lower price vs non-uniform delivery - Later pick-up times vs non-uniform delivery	Experiment: - Delivery frequency - Access to post offices - Price (stamp prices for residents; percentage increases for businesses)	Experiment: - First class quality of service standards (93%, 85%, 75%) - Number of service classes for letters (two tier or single tier system) - Evening delivery / Saturday for non-letter post - Separate products for insuring the item and guaranteeing next day delivery (or separate products) - Price - Delivery frequency (6 days, 5 days (including Saturday), 5 days (not Saturday))	Experiment 1: - Delivery frequency - Time of delivery - Collection frequency - Price (stamp prices) Experiment 2: - Number of service classes for letters - Delivery time - Reliability - Pricing (uniform / not) - Price (stamp prices) Experiment 3: - Post opening hours - Access points - Parcels (included or not) - Registered and insured services (yes/no) - other services to ensure security/integrity - Price (stamp prices)

Figure 3.3: Characteristics of previous SP studies to quantify the value of postal services

3.1.3 Levels of USO across member states

The levels of USO for specific postal attributes across member states provide information on current minimum service attribute levels and how these vary across states. Therefore the USO obligations across member states were reviewed to inform the decision of attributes (and attribute levels) to be tested in the choice experiments.

The Postal Directive (Directive 97/67/EC of the European Parliament and the Council of 15 December 1997 on common rules for the development of the internal market of Community postal services and the improvement of quality of service, originally published in OJ 21.1.1998 L 15/14) has been amended two times after the original draft. As of February 2008, the European Union's 3rd Postal Directive came into force. While obliging the EU member states to fully open their markets by December 2010, although 11 member states¹² have secured an extension up until December 2012, the Directive largely confirmed the definition of universal services (from the first postal Directive).

Table 3.1 lists the relevant attribute areas of the Postal Directive and describes the requirements of each. These range from the density of the collection network to the frequency of delivery.

Table 3.1: Relevant attribute areas of Postal Directive 2008/6/EC

Attribute	Description and requirements
A quality universal service for EU citizens (Article 3 pp)	Member states shall take steps to ensure that the universal service is guaranteed not less than five working days a week, save in circumstances or geographical conditions deemed exceptional, and that it includes as a minimum: — one clearance — one delivery to the home or premises of every natural or legal person or, by way of derogation, under conditions at the discretion of the national regulatory authority (NRA), one delivery to appropriate installations. Member states shall take steps to ensure that the density of the points of contact and of the access points takes account of the needs of users.
Tariff principles (Article 12)	Whenever necessary for reasons relating to the public interest, member states may maintain or apply uniform tariffs for single piece tariff mail, the service most frequently used by consumers, including SMEs. Member states may also maintain uniform tariffs for some other mail items, such as, for example, newspapers and books, to protect general public interests, such as access to culture, ensuring participation in a democratic society (freedom of press) or regional and social cohesion.
Quality of services – routing time (Article 16 pp)	The Commission should be empowered to adopt measures as regards future adjustment of quality of service standards to technical progress or market developments as well as of standardised conditions for independent performance monitoring by external bodies.
Complaint and redress procedures (Article 19)	With a view to increasing the effectiveness of complaint handling procedures, it is appropriate to encourage the use of out-of-court settlement procedures as set out in Commission Recommendation 98/257/EC of 30 March 1998 on the principles applicable to the bodies responsible for out-of-court settlement of consumer disputes (1) and Commission Recommendation 2001/310/EC of 4 April 2001 on the principle for out-of-court bodies involved in the consensual resolution of consumer disputes.

Source: EC (2008).

The requirements for attributes of the EU Postal Directive and USO are a minimum for all member states. The degree to which member states have implemented these elements varies. For example, the majority of member states extend the scope of the USO beyond regular letter mail and parcel mail to cover counter services, printed matters, addressed

¹² These are Cyprus, the Czech Republic, Greece, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Romania and Slovakia.

direct mail, bulk mail, etc. A summary of some of the relevant attributes is presented in Table 3.2.

Table 3.2: Services ensured as universal services under national law

Attributes	Member states
Frequency of delivery ensured	
5 days/week	AT,BE,BG,CY,CZ,FI,EL,HU,IE,LU,PL,PT,RO,SK,SE,IS,LI,CH,EE,IT, LV,LT,MT,SI,ES
6 days/week	DK,DE,FR,NL,UK
Services ensured	
Basic letter post	AT,BE,BG,CY,CZ,DE,DK,EE,EL,FI,FR,HU,IE,IT,LI,LT,LU,LV,MT,NL, PO,PT,RO,SI,SK,ES,SE,UK,IS,LI,NO,CH
Bulk letters	AT,BE,CY,DK,EL,ES,FR,HU,IE,IT,LT,LU,LV,MT,PT,RO,SE,SK,UK,IS
Direct mail	AT,BE,CY,EL,FR,HU,IE,LU,LV,MT,PT,RO,SK,UK,IS
Periodicals	AT,BE,CY,DE,EL,FR,HU,LU,LV,MT,PT,RO,SI,IS,LI,CH
Non-priority letters	AT,BE,BG,DK,EE,EL,FI,FR,HU,LT,LU,LV,PO,PT,RO,SE,SK,UK,LI, NO,CH
Basic parcel post	AT,BE,BG,CY,CZ,DE,DK,EE,EL,FI,FR,HU,IE,IT,LI,LT,LU,LV,MT,NL, PO,PT,RO,SI,SK,ES,SE,UK,IS,LI,NO,CH
Bulk parcels	AT,BE,EL,HU,LT,LU,MT,SK,CH
Accessibility of postal access points	
Post office	DE,EE,FR,IT,CY,LU,LT,LU,HU,MT,NL,RO,SI,SE
Delivery boxes	BE,BG,DK,DE,EE,IE,ES,FR,IT,CY,LT,HU,MT,AT,PL,PT,SK,SE,UK

Source: Copenhagen Economics (2010).

A more detailed description of the following attributes of the USO at the EU and member state levels are available in Appendix A:

- definition and products in USO
- number of post offices required
- number of letterboxes required
- quality requirements transit times
- frequency of collection (weekly/daily)
- frequency of delivery (weekly/daily)
- accounting requirements
- USO delivery points
- complaint mechanisms
- other USO requirements
- USO financing.

Where possible we have sought to define attribute levels to be consistent with USO obligations.

3.1.4 Views from stakeholders

In order to understand stakeholders' views about important postal service attributes, views were sought from representatives of the postal provider, the postal regulator, relevant consumer bodies, other postal operators and other interested parties in the three member states. This took the form of conference calls and a follow up questionnaire.

Input was received from:

Sweden:

- Sweden Post
- PTS (the postal regulator)
- The Ministry of Enterprise, Energy and Communications

Italy:

- Poste Italiane
- Regulation of Postal Sector, Italian Government (the postal regulator)
- TNT
- Institute Bruno Leoni

Poland:

- Poczta Polska
- UKE (the postal regulator)
- In Post.

Further to the conference calls and correspondence, the stakeholder contacts also helped provide clarification on the services available and appropriate prices to test in their country.

3.1.5 Recommended attributes to be tested

The attributes to be tested were guided by the economic framework, but also took into account findings from other studies, information regarding specification of USO conditions and stakeholder views.

As noted in Section 3.1, because we are specifically including vulnerable people in the surveys, we recommend that we do not test more than 15 attributes plus price in the surveys (which would mean including three experiments with five attributes each, plus price). Ideally we would test fewer attributes.

Given the growing importance of parcel services, the different degree of intermodal completion in the letters and parcels market (cf. Section 3.1.1), and the views of various stakeholders we recommended that separate choice exercises were undertaken to examine the importance of the following attributes on letter and parcel services:

- speed of delivery time: the number of days that pass until an item is delivered after collection day, including single class services (J+1, J+2, J+3) and two-class services (J+1 and J+3); we also propose to test a non-uniform service specification, specifically J+1 (local) and J+3 (national)
- Saturday delivery
- percentage of lost letters (0, 1% and 5% levels were tested in the pilot; these were increased to 0, 5% and 10% for the main survey)
- reliability, defined as percentage of mail delivered by promised time (levels of 85%, 93% and 98% were tested in the pilot surveys; these were increased to 80%, 90% and 95% in the main survey)
- guaranteed time of delivery, at place of delivery
- delivery location: either at home, at a post-office box or at the local postal service centre
- price: based on current stamp prices (for letters and packets) and an average parcel price for parcels.

We have included guaranteed time of delivery, on the basis that this could be important to customers and have an important impact on costs for postal providers. We did not include time of collection, on the basis that this was likely to be less important to consumers. In turn, we have put greater emphasis on the speed of delivery attribute, which is a direct indication of the time that it takes for an item to reach the recipient.

The Saturday delivery attribute was dropped from the choice experiments after review of the pilot surveys, on the basis that too many respondents found the choice exercises too demanding (nearly 20% of respondents reported that they could not undertake the choice experiments in the pilot and cognitive survey tests, which is a rather high figure in our experience).

The ranges for the percentage of lost items and percentage of items delivered on time were increased after the pilot survey, in order to present choices that were “more different” to respondents, on the basis that some respondents felt that too many of the choices looked too much the same.

We also recommended a third experiment to quantify the importance of the following service attributes:

- uniform pricing
- accessibility of postal service centres (measured as distance)
- available services in postal service centres
- opening hours in postal service centres
- price.

We did not include “track and trace” services in the experiments, as these are provided commercially in many markets.

We also didn’t include electronic collection and delivery, as such services might be unfamiliar to many customers presently.

As discussed earlier, for consistency and comparison of findings, we also recommended testing the same attributes in the three member states. Although the costs in each experiment are based around current price (stamp price) levels in the member state and are presented in the appropriate currency for each member state. We recommended testing six price levels in the design, including price reductions and increases, to ensure a wide range of costs were tested in the experiment, facilitating reliable estimates of WTP.

Tables 3.3–3.5 summarise the attributes and levels tested in the choice experiments in the main surveys.

Table 3.3: Experiment 1 (letters) attributes and levels

Experiment 1: Letters and (letterboxable) packets services						
Speed of delivery	Single service: J+1	Single service: J+2	Single service: J+3	Non-uniform (single) service: J+1 (local) J+3 (national)	Two service classes: J+1 and J+3	
Reliability (% of mail delivered within promised transit time)	80 out of 100 letters delivered on time	90 out of 100 letters delivered on time	95 out of 100 letters delivered on time			
Time of delivery	By 9:00	By 13:00	By 17:00			
Percentage of lost items	No lost letters	5 out of 100 letters is lost	10 out of 100 letters is lost			
Delivery location (distance to point where post is delivered)	Delivered to home/business during work hours only	Delivered to secure mail box 100m away from home/business	Delivered to secure box 1km away from home/business			
(J+3) Stamp price	-30%	As now	+30%	+50%	+100%	+150%
First class adjustment*	1.1	1.2	1.3	1.4	1.5	

* For two-service classes only

Table 3.4: Experiment 2 (Parcels) attributes and levels

Experiment 2: Parcels services						
Speed of delivery	Single service: J+1	Single service: J+2	Single service: J+3	Non-uniform (single) service: J+1 (local) J+3 (national)	Two service classes: J+1 and J+3	
Reliability (% of mail delivered within promised transit time)	80 out of 100 parcels delivered on time	90 out of 100 parcels delivered on time	95 out of 100 parcels delivered on time			
Time of delivery	9:00	13:00	17:00			
Percentage of lost items	No lost parcels	5 out of 100 parcels is lost	10 out of 100 parcels is lost			
Delivery location (distance to point where post is delivered)	Delivered to home/business during work hours only	Delivered to secure mail box 100m away from home/business	Delivered to secure box 1km away from home/business			
(J+3) package price	-30%	As now	+30%	+50%	+100%	+150%
First class adjustment*	1.1	1.2	1.3	1.4	1.5	

* For two-service classes only

Table 3.5: Experiment 3 (Postal Services) attributes and levels

Experiment 3: Other postal service attributes					
Uniform pricing	Yes	No			
Postal network	Delivery to 100% of addresses	Delivery to 99% of addresses	Delivery to 95% of addresses		
Distance to post office or outlet where postal services can be accessed	1 km	3 km	5 km	10 km	
Available services at post office or outlet where postal services are accessed	Basic postal services available	Full range of postal services available, including insured and registered services	Full range of postal services and additional financial services such as banking available		
Opening hours	2 hours per day	4 hours per day	8 hours per day		
Average stamp price	– 30%	As now	+ 10%	+ 30%	+ 50% + 100%

3.2 Treatment of altruism

An important issue when measuring WTP for public services through SP methods can be the treatment of “altruism”, i.e. where respondents incorporate the welfare of others in their SP responses. Altruism can be an important component of the value attached to public sector services (for example see Aabø and Strand, 2004).

In the postal sector, users may place higher values on the postal service, or particular aspects of the service (insured products, for example), not because they use that service, but because they feel it is an important service for others. For example, some citizens may not use postal services but may feel that it is an important service for others who do not have access to internet facilities, etc.

In order to avoid such double-counting, all respondents were instructed in the introduction to the choice exercises to consider their own preferences only. The needs of the vulnerable people have been taken into account by ensuring there are adequate numbers of vulnerable respondents in the survey through the specification of quotas.

3.3 The inclusion of an “as now” or baseline alternative

Another issue in the design of the SP surveys is the number of alternatives which are presented to individuals within any choice scenario, and whether a baseline alternative, describing the current conditions, is presented.

We argue that it may be important to provide some service benchmark in cases where respondents have very little knowledge about the service levels of the alternative, for example in the Accent (2008) study where respondents were presented with choices between different USO configurations. The benefit is that providing such a baseline gives the respondent some idea of current service levels and therefore a base with which to make comparisons. The disbenefit is that many people will choose this option because they are happy with the status quo, thus reducing the statistical reliability of the resulting model parameters explaining the importance of specific attributes and therefore the WTP valuations. Also, the inclusion of an “as now” alternative may magnify differences between gains and losses, which tend to be less marked in studies that do not contain a base reference (see Burge et al, 2004, for a discussion on the impact of including “as now” alternatives).

The necessity of such a benchmark is less obvious when considering services with which people are familiar, e.g. general postal services, and it is noteworthy that most of the studies presenting general postal services have not presented a baseline alternative. A further option would be not to present a baseline alternative, but to label the current service levels (where appropriate). Again, our experience is that such labels tend to increase the probability of choosing the current levels and exacerbate differences between gains and losses (again see Burge et al, 2004, for discussion).

Our recommendation would therefore be not to present a benchmark alternative in the choice scenarios, on the basis that it is likely to encourage choice of the status quo and reduce the reliability of the resulting coefficients, nor to label current service levels.

Moreover, we recommend presenting two choice alternatives in each choice scenario in order to reduce the complexity of the exercise.

3.4 Designing the choice experiments

The experimental design for the choice experiments is based on an “efficient” design, whereby the choice alternatives that are presented to respondents are chosen on the basis of estimating reliable model coefficients, assuming a multinomial logit model structure (see Box 3.1 for details).

Box 3.1: An efficient design

In ‘efficient’ designs the choices that are generated and presented to respondents are chosen on the basis of estimating reliable model coefficients, in this case assuming a multinomial logit model structure. The efficient design, in contrast to more traditional ‘orthogonal’ design, not only merely tries to minimise the correlation in the data for estimation purposes, but aims to provide data that will generate parameter estimates with as small as possible standard errors.

The most widely used measure, called the D-error, which takes the determinant of the asymptotic variance–covariance (AVC) matrix, is used in our design process. A design with the lowest D-error is called D-optimal. In practice, it is very difficult to find the design with the lowest D-error, therefore we are satisfied if the design has a sufficiently low D-error, called D-efficient design. If the successive iteration of efficient designs does not reduce the value of D-error significantly, or D-error stays the same and its value is very low, then it would be a good point to stop the iteration and use the design matrix generated. The experimental designs have been produced using the NGENE software package (Choice Metrics, 2010).

Because the choices incorporate a substantial amount of information, each respondent is presented with six choice scenarios in each choice experiment.

The design for experiments 1 and 2 incorporates 60 possible choice pairs, which have been grouped into ten blocks of six choices each; 60 choice pairs are favoured over the minimum requirement of 30 in order to provide increased variability in the attribute levels presented. For experiment 3 there are 48 possible choice pairs, which have been grouped into eight blocks of six choices each. Here 48 choice pairs were favoured over the minimum require of 12 for the reason described above. The grouping has been undertaken to minimise correlation with attributes to ensure there is a reasonable range of attribute levels tested within any specific block.

The design matrices for Experiment 1 and Experiment 2 are identical but the respondent is presented with different blocks for each experiment.

The prices for each choice are based around current stamp and parcel prices in each country. Table 3.6 shows current letter prices for Sweden, Poland and Italy (based on a letter weighing 20 g).

Table 3.6: Current letter prices

	Letters (20 g)	
	J+1	J+3
Sweden	6.00 SEK	5.50 SEK
Poland (up to 50 g)	1.95 PLN	1.55 PLN
Italy*	0.60 euro	

* Only a single letter service exists in Italy.

Source: Sweden Post, Poczta Polska and Poste Italiane.

For single class service options, price adjustments are made to the J+3 service prices (or the single price for Italy). For the two-class service options, the economy (J+3) prices are adjusted by a factor of 0.75 before the price adjustments are applied to ensure that the range of two-class prices is both cheaper and more expensive than the one-class price options. This price is then multiplied by a random factor (1.1, 1.2, 1.3, 1.4 or 1.5), specified within the experimental design, to produce a priority (J+1) stamp price.

Current parcel prices (for 1 kg parcels) are shown in Table 3.7. The same methodology as described for letters, but using parcel prices (based on a 1 kg parcel), is used for presenting parcel costs in Experiment 2.

Table 3.7: Current parcel prices (Sweden Post, Poczta Polska and Poste Italiane)

	Parcels – 1 kg	
	J+1	J+3
Sweden	48 SEK	46 SEK
Poland (up to 50 g)	11 PLN	9.5 PLN
Italy*	12 euro	11.40 euro

Figures 3.4–3.6 present examples of the introductory text and format of the different choice exercises that were undertaken in the final surveys.

Introduction:

We would now like you to consider different hypothetical postal service options and indicate which you would most prefer when thinking about sending and receiving letters.

Each of the options is described by different postal service attributes, such as:

- Speed of delivery, which describes how many classes of postal service there would be and how quickly letters are required to be delivered
- Delivery location: describing where letters would be delivered to – for example, they could be delivered to your #HOME# or #BUSINESS# or to save on money they could be delivered to secure locked mail boxes near your #HOME# or #BUSINESS#
- the time that the mail is delivered to your #HOME# / #BUSINESS#
- the percentage of mail delivered on time
- the percentage of mail which is lost
- Stamp prices

We will present you with 6 hypothetical choice scenarios. We would like you to carefully consider each of the choices and choose the option you most prefer for your own postal needs. Please note that we will be talking to a lot of people, including elderly and disabled people to obtain their views, so please consider your own postal needs only when thinking about the different options.

Finally, we would like to emphasise that there are no right or wrong answers, so please consider the information for each option carefully and select the option that you most prefer.

Choice 1

Which postal service would you prefer for letters?

	Alternative A	Alternative B
Number of classes and speed of service	One class: delivery by next working day	Two classes: next working day and within 3 working days
Delivery location	Delivered to secure mail box 100m from home/business	Delivered to home/business during work hours only
Guaranteed time of delivery	Delivered by 9:00	Delivered by 13:00
Percentage of mail delivered on time	90 out of 100 letters delivered on time	80 out of 100 letters delivered on time
Percentage of letters lost	1 out of 100 letters lost	No lost letters
Stamp price	Price:	Next day: 3-day:
Choice (mark "X" in preferred option)	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3.4: Introduction and example choice scenario for Experiment 1

Introduction:

We would now like you to consider different hypothetical postal service options and indicate which you would most prefer when considering sending and receiving parcels. Specifically we are considering the case where you send or receive a 1 kg parcel, which is about the weight of a pair of shoes.

Again, we will present you with 6 hypothetical choice scenarios, each described by the same attributes as in the previous exercise, but this time we would like you to think about your needs for sending and receiving parcels. Again please consider each choice carefully and choose the option you most prefer for your own postal needs.

Choice 1

Which postal service would you prefer for a 1kg parcel?

	Alternative A	Alternative B
Number of classes and speed of service	One class: delivery by next working day	Two classes: next working day and within 3 working days
Delivery location	Delivered to secure mail box 100m from home/business where you can collect your parcels at any time	Delivered to home/business during work hours only
Guaranteed time of delivery	Delivered by 9:00	Delivered by 13:00
Percentage of mail delivered on time	90 out of 100 parcels delivered on time	80 out of 100 parcels delivered on time
Percentage of parcels lost	1 out of 100 parcels lost	No lost letters
Price for 1kg parcel	Price:	Next day: 3-day:
Choice (mark "X" in preferred option)	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3.5: Introduction and example choice scenario for Experiment 2

Introduction:

In this last exercise, we will again present you with different hypothetical postal service options and would like you to indicate the one you most prefer.

In this exercise the different service options will be described by attributes such as:

- Where you are able to access postal services, including the distance you would have to travel, the hours of opening and the types of services available
- How much of the country receives postal deliveries (for those locations where there are no postal delivery services residents would have to collect their post for nearby postal service outlets)
- Whether the price of a letter or package is the same for all locations or whether the price could be different depending on where you are sending it to
- Stamp prices

Again we will present you with 6 hypothetical choice scenarios and we would like you to consider these carefully. As before, please consider your own needs only.

Choice 1

Which postal service would you prefer?

	Alternative A	Alternative B
Accessing postal services - Distance to travel - Opening hours - Services available	1km from home Open 2 hours per day Basic postal services available	3km from home Open 8 hours per day Full range of postal services and additional financial services such as banking available
Postal network	Delivery to all addresses in the country	Delivery to 99% (99 of 100) addresses in the country
Pricing	Same price to deliver to any destination within Poland / Italy / Sweden	Difference prices to deliver to different destinations within Poland / Italy / Sweden. For example, it might be cheaper for local deliveries and more expensive for more distant destinations.
Average stamp price	Average stamp price:	Average stamp price:
Choice (mark "X" in preferred option)	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3.6: Introduction and example choice scenario for Experiment 3

3.5 Other information collected in the questionnaire

In addition to choice exercises, other background information was also collected in the questionnaires.

The questionnaire commenced with the collection of demographic and company information (as appropriate) to ensure the survey quotas were obtained (see Section 3.6). Next, a postal or email address was collected so that the choice experiments could be sent to the respondent.

Next there was a series of background questions about the respondent's current postal usage, including:

- volumes of letters and parcels sent and received
- methods of paying postage
- internet usage

- usage of postal providers other than the universal service provider (USP)
- types of mail sent
- desired improvements to the postal service.

After answering these questions respondents were asked to participate in the SPDCEs. The choice exercises were followed by a few questions asking about respondents' understanding of the exercises.

These were then followed by a couple of questions investigating:

- value for money of the postal services
- changing patterns of usage of postal services
- post office usage
- classes of postage used
- views on needs for uniformity of postal services.

The last part of the questionnaire collected background information for classification purposes.

3.6 Key market segments

Views on postal services vary not just by country but also by customer type. It is therefore crucially important to reflect the views of different customer types within the survey design.

Businesses' postal needs may vary depending on the size and type of business. Larger businesses tend to have direct contact with the postal service provider, possibly even an account manager. The impact of changes to postal service provision of the platform and on the recipient side is likely to be very important to them, whereas the public accessibility of the platform for senders may be of a minor concern. Smaller businesses have less of a voice and may be smaller users of the postal service. Consequently, their preferences for the accessibility on the sender side may be more accentuated. We therefore have specified quotas for large businesses and SMEs within each member state. For the purposes of the study the EU's own definition of SMEs as companies with fewer than 250 employees was used (see Table 3.8).

Table 3.8: Definition of SMEs (European Commission)

Enterprise category	Headcount	Turnover	Balance sheet total
Medium-sized	< 250	≤ € 50 million	≤ € 43 million
Small	< 50	≤ € 10 million	≤ € 10 million
Micro	< 50	≤ € 2 million	≤ € 2 million

It is also important to interview a range of levels of postal usage as, for example, a medium sized company with 200 employees may be a comparatively small user of postal services (a

construction company for example with a large workforce of manual workers) while a small mail order company may have fewer than ten employees but be a very heavy user of the post. However, no quotas were set on level of sending as we wished to obtain a sample that was broadly representative.

The sample design aimed to reflect the demographic profile of the residential customers of the member state, including age, gender and household income. It was also necessary to examine the needs and preferences of more vulnerable members of society, notably the elderly, the disabled and those on low incomes – those who may be more dependent on postal services and likely to be more heavily impacted by any change to postal service provision. It was also important to represent those living in more rural areas and those without internet access as their reliance on and usage of postal services may be different from those who live in urban areas and those who have access to email and online services. The vulnerable respondents were treated as a “boost” sample.

Data is therefore available for the population as a whole in each of the member states and also separately for vulnerable groups.

3.7 Recommended survey sample sizes

We aimed to undertake 475 interviews in each member state:

- 3 member states:
 - 350 residential consumers:
 - 100 vulnerable users
 - 250 non-vulnerable users
 - 125 business customers:
 - 75 SMEs
 - 50 large businesses.

We recommended these sample sizes with the aim of allowing comparison of the valuations of postal service attributes between vulnerable and non-vulnerable residential consumers and between SMEs and large businesses, but recognising the project budget constraints. A key part of the analysis examines whether we observe significantly different valuations for postal service attributes between these different segments (see Chapter 4 for details of the modelling analysis).

Quotas were set for the main stage of the fieldwork to ensure that we got a reasonably representative spread of consumers and businesses within each country, as described below.

Consumers

Our aim was that a minimum of 40% of the interviews would be with men and 40% would be with women in each country.

We also set minimum age quotas (based on the actual age profile of each country), as shown in Table 3.9.

Table 3.9: Minimum quotas by age and country

Age	Sweden (%)	Italy (%)	Poland (%)
18–34	28	25	32
35–54	35	39	32
55–64	17	16	16

As part of the survey we undertook 100 interviews with vulnerable people in each country. Respondents were classified as vulnerable if they:

- were aged over 65
- had a long term illness or disability
- were in a household with a low income.

The definitions of low income are shown in Table 3.10. We asked about annual household income before tax.

Table 3.10: Definition of low-income (vulnerable) households

Annual household income level	Vulnerable
Italy (euros)	
< 3,000	√
3,001–5,000	√
5,001–9,000	√
> 9,001	
Don't know	
Prefer not to say	
Poland (zloty)	
< 11,880	√
> 11,881	
Don't know	
Prefer not to say	
Sweden (kroner)	
< 26,850	√
26,851–44,750	√
44,751–80,550	√
80,551–111,875	√
> 11,876	
Don't know	
Prefer not to say	

Businesses

Of the 125 business interviews per country we aimed to conduct 75 with SMEs and 50 with larger businesses.

3.8 Survey methodology

It is essential in research where complex choice experiments are undertaken that the choice experiment options are clearly presented for the respondent to see during the survey. One possibility is to conduct the research face-to-face but this is very costly and also means that the respondents are likely to be clustered in specific areas rather than spread across the country. This means that you do not obtain a random sample and do not get sufficient geographic coverage.

Another approach is to use online surveys, which would also allow users to see the choices on their computer screens. However, online surveys have a number of limitations, as discussed below, and for these reasons we did not believe the approach to be suitable for this project:

- the penetration of internet usage varies by country but a significant minority in any given country are without internet access and would not be represented in the survey
- the type of people who are least likely to be able to access an online survey, such as the elderly or those on low income, are of particular interest in this study
- it is important, particularly in this type of research, that respondents are given any assistance needed to understand the questions or the process; an online survey does not offer the same immediate help and clarification as an interviewer-administered survey so there is a very real danger that the data will be less reliable
- it is difficult to buy reliable email addresses for businesses and so the methodology is not suitable for the business part of the sample
- while there are a number of quality controls and safeguards which can be built in, there is greater certainty of the data quality with an interviewer-administered approach.

Our recommended approach was therefore to use phone-post, email or fax-phone methodology. This meant that the interviews were undertaken by telephone with an interviewer. Respondents with email access (most businesses and a proportion of residential respondents) could be sent the SP material during the course of the initial phone call, allowing the respondent to view it while they were on the phone, so that the telephone interview could continue uninterrupted. However, those who were unable or unwilling to access the internet as part of the survey could have the material either faxed or posted to them and the interview completed at a future date. The inclusion of a postal option ensured that those without internet access were also included within the research.

This methodology was successfully used in the Accent (2008) work.

All material was provided in the language of the member state.

The target respondent for household interviews was an adult of the household. For businesses the target person was the person with responsibility for making decisions about the usage of postal services within their business.

3.9 **Choosing the member states for testing the methodology**

Individuals' WTP for postal services is likely to differ within and between member states, as individuals and businesses live and operate in different geographic, economic, social, technological and cultural contexts. A key objective of the study is to pilot the valuation methodology in a minimum of three member states. The study brief required that a minimum of one country be chosen from each of the following groups:

- western member states: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, The Netherlands, Sweden, UK
- southern member states: Cyprus, Greece, Italy, Malta, Portugal, Spain
- eastern member states: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.

The brief also required that the surveys cover a sizeable proportion of the population of the European Union and that the selected member states together represent at least 20% of the population of EU member states. The population¹³ of each member state and proportion to the EU-27 is presented in Table 3.11. Because of the limit on the project budget, it was only possible to undertake the surveys in three member states.

We have ranked the population for each country and assigned a category of low, medium and high, in what we refer to as the “LMH cluster”. This approach was used across all categories considered in choosing the countries and is discussed in further detail below.

¹³ The inhabitants of a given area on 1 January of the year in question (or, in some cases, on 31 December of the previous year). The population is based on data from the most recent census adjusted by the components of population change produced since the last census, or based on population registers.

Table 3.11: Total population and proportion of EU-27 of each member state, 2010

Member state	Total population	Proportion of EU-27 population	LMH cluster
Malta	412,970	0.08%	L
Luxembourg	502,066	0.10%	L
Cyprus	803,147	0.16%	L
Estonia	1,340,127	0.27%	L
Slovenia	2,046,976	0.41%	L
Latvia	2,248,374	0.45%	L
Lithuania	3,329,039	0.66%	L
Ireland	4,467,854	0.89%	L
Finland	5,351,427	1.07%	L
Slovakia	5,424,925	1.08%	M
Denmark	5,534,738	1.10%	M
Bulgaria	7,563,710	1.51%	M
Austria	8,375,290	1.67%	M
Sweden	9,340,682	1.86%	M
Hungary	10,014,324	2.00%	M
Czech Republic	10,506,813	2.10%	M
Portugal	10,637,713	2.12%	M
Belgium	10,839,905	2.16%	M
Greece	11,305,118	2.26%	H
Netherlands	16,574,989	3.31%	H
Romania	21,462,186	4.28%	H
Poland	38,167,329	7.62%	H
Spain	45,989,016	9.18%	H
Italy	60,340,328	12.04%	H
United Kingdom	62,008,048	12.37%	H
France	64,714,074	12.91%	H
Germany	81,802,257	16.32%	H
EU-27	501,103,425	100.00%	-

Source: Eurostat (2010), available at:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00001>

LMH cluster is determined by equally dividing the member states across each cluster.

Below we discuss the other criteria we have used to choose those member states.

Understanding the criteria

In order to establish a useful set of criteria from which to select three member states, we considered factors which may influence individuals' and businesses' preferences for postal services, including:

- internet access and use: reflecting the extent to which internet access may provide and enable substitutes for letter post, and thus reduce WTP for postal services, but

also may lead to increases in parcel and packet post which may increase WTP for inclusion of such services in guaranteed postal services

- ownership of national postal operators (NPOs): reflecting competition and efficiency in postal services, where individuals' and businesses' WTP for postal service attributes may be influenced by experiences in operating in countries with low to high state ownership of the NPO
- letter volume per capita: reflecting the extent to which there is a "tradition" of using and reliance on postal services in the member state, thereby influencing how much individuals' and businesses' are willing to pay for attributes of postal services, such as frequency of delivery, access to postal offices, etc.
- urbanisation: reflecting the physical challenges and opportunities to sending and receiving post and the influence of location (urban or rural) of postal services
- USO market alignment: reflecting the quality of USOs across member states in terms of the availability of postal counters, frequency of delivery and political willingness to alter aspects of the USO
- perception of affordability: reflecting the degree to which postal services have been perceived as affordable and thus allow for investigation into how WTP (or price sensitivity) for attributes of the postal service may vary depending on perceived affordability of postal services
- market experience: reflecting how levels of competition in the letters market and parcels market may influence valuation of attributes of postal services.

The aim of the selection process was to choose member states with a wide range of variation in these dimensions in order to provide possible insights into how WTP may vary across a wide range of background conditions. Therefore, for each of the relevant criteria considered, member states are rank ordered and assigned to a category of low, medium or high in what we refer to as the "LMH cluster". For the most part, the LMH cluster is an equal division into the low, medium or high categories of the 27 member states; there are cases in which a more relevant clustering was based on values around the mean (medium), below the mean (low) and above the mean (high). We present statistics for each of the criteria below and assign each member state within a category of the LMH cluster.

Internet access and use

Member states differ in their digital penetration rates and the degree to which individuals buy or order over the internet for private use (e.g. e-commerce). This may affect the degree to which individuals use postal services for personal and business uses. It appears that the eastern and southern countries tend to be below the EU-27 as a whole, and western countries above in their e-commerce and broadband access (see Table 3.12).

Table 3.12: Degree of e-commerce use (2010) and broadband access (2008), by member state and EU-27

Member state	E-commerce	LMH cluster	Member state	Broadband	LMH cluster
Romania	4.0%	L	Bulgaria	9.5%	L
Bulgaria	5.0%	L	Poland	9.6%	L
Lithuania	11.0%	L	Slovakia	9.6%	L
Greece	12.0%	L	Romania	10.7%	L
Portugal	15.0%	L	Greece	11.2%	L
Italy	15.0%	L	Hungary	15.7%	L
Latvia	17.0%	L	Czech Republic	15.8%	L
Estonia	17.0%	L	Portugal	15.8%	L
Hungary	18.0%	L	Cyprus	16.0%	L
Cyprus	18.0%	L	Lithuania	16.1%	M
Spain	24.0%	M	Latvia	16.3%	M
Czech Republic	27.0%	M	Italy	18.1%	M
Slovenia	27.0%	M	Slovenia	19.1%	M
Poland	29.0%	M	Ireland	19.5%	M
Slovakia	33.0%	M	Spain	19.8%	M
Ireland	36.0%	M	Malta	20.5%	M
Malta	38.0%	M	Austria	20.8%	M
Belgium	38.0%	M	Estonia	23.6%	M
Austria	42.0%	H	France	26.2%	H
France	56.0%	H	Germany	26.3%	H
Germany	59.0%	H	Belgium	26.6%	H
Finland	59.0%	H	Luxembourg	27.3%	H
Luxembourg	60.0%	H	UK	27.5%	H
Sweden	66.0%	H	Finland	30.7%	H
UK	67.0%	H	Sweden	32.5%	H
Netherlands	67.0%	H	Netherlands	35.8%	H
Denmark	68.0%	H	Denmark	37.4%	H
EU-27	40.0%	-	EU-27	21.7%	-

Source: Eurostat (2010). E-commerce data available at:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tin00096>

Broadband information available at:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsir150>

LMH cluster is determined by equally dividing the member states across each cluster, except in cases where the value of a member state is the same as in another cluster (Cyprus for E-commerce).

Ownership of the NPO

Ownership issues are outside the scope of the EC acquis. Moreover, ownership varies substantially across member states. In the full market opening of postal services, there has been an evolution of the organisational status of the NPO away from state owned enterprise to limited company or joint stock company forms in order to create more

efficiency in the system (Copenhagen Economics, 2010). As described in Copenhagen Economics (2010: 32), “if the owner of the infrastructure is at the same time the main operational market player (with significant market power), there remains a danger of access problems for competitors, distortion of competition and protectionism”. Therefore, one proxy for the competition and efficiency of a system is the degree to which a state controls the NPO’s stock. This may influence individuals’ and businesses’ WTP for postal service attributes, where individuals and businesses operating in countries with low state ownership may have different experiences from those in high ownership. Table 3.13 presents the level of state ownership of the NPO across member states.

Currently, most countries have a high degree of state ownership of the NPO. There are the few countries, however, in the low and medium clusters for which it may be interesting to investigate preferences.

Table 3.13: Level of state ownership of the NPO, by member state, 2009

Member state	State ownership	LMH cluster
Malta, Netherlands	0.00%	L
Germany	30.50%	M
Belgium	50.00%	M
Austria	52.83%	M
Italy*	65.00%	M
Greece	90.00%	H
Denmark, Ireland, France, Luxembourg, Finland, Sweden, UK, Czech Republic, Romania, Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland, Slovenia, Slovakia, Cyprus, Spain, Portugal	100.00%	H

* In 2009, 65% of Poste Italiane shares were held by the Italian government’s Ministry of Economics and Finance. The remainder was owned by a government company, which managed the investment of public savings (Cassa Depositi e Prestiti S.p.A).

Source: Copenhagen Economics (2010). LMH cluster is determined by low (0%), medium (1–89%) and high (90%+) proportion of state ownership of postal services.

Mail volumes

The extent to which citizens within a country utilise postal services may differ. Table 3.14 presents the letter volume per capita across the member states in 2006. The table suggests that eastern member states (as defined earlier) tend to have lower volumes of post per capita, southern states medium levels and western countries higher levels. The degree to which letters are exchanged may influence consumers’ preferences for different attributes of a postal service; it will therefore be important to select one member state from each of the clusters.

Table 3.14: Letter volume per capita, 2006

Member state	Average letter volume (per capita)	LMH cluster
Bulgaria	11	L
Romania	18	L
Latvia	30	L
Lithuania	34	L
Poland	48	L
Greece	61	L
Slovakia	74	L
Cyprus	78	M
Hungary	82	M
Estonia	89	M
Czech Republic	90	M
Italy	96	M
Portugal	114	M
Spain	117	M
Malta	119	M
Ireland	178	H
Germany	194	H
Slovenia	211	H
Denmark	234	H
Sweden	287	H
Netherlands	287	H
Luxembourg	395	H
Finland	408	H
France	.	.
Austria	.	.
United Kingdom	.	.
Belgium	.	.
EU-23	3,256	.

Source: DG Internal Market & Services (2010). See http://ec.europa.eu/internal_market/post/facts_en.htm.

Urbanisation

The extent to which a population is concentrated in urban areas may affect the needs and uses for different attributes of postal delivery. Table 3.15 presents the share of the population in each country residing in a “predominately urban area” in 2010, as defined in the rural–urban typology of the European Commission. There is less of a pattern as to whether eastern, western or southern countries are more clustered in low, medium or high levels.

Table 3.15: Extent of urbanisation, by member state, 2010

Member state	Predominately urban	LMH cluster
Estonia	0.0%	L
Cyprus	0.0%	L
Luxembourg	0.0%	L
Slovenia	0.0%	L
Romania	9.9%	L
Slovakia	11.4%	L
Bulgaria	14.9%	L
Hungary	17.4%	L
Sweden	20.9%	L
Denmark	21.0%	M
Czech Republic	22.4%	M
Lithuania	24.4%	M
Finland	25.4%	M
Poland	28.3%	M
Ireland	29.5%	M
Austria	33.0%	M
France	34.6%	M
Italy	35.4%	M
Germany	42.0%	H
Greece	45.5%	H
Latvia	47.2%	H
Portugal	47.7%	H
Spain	48.2%	H
Belgium	67.5%	H
Netherlands	71.1%	H
United Kingdom	71.3%	H
Malta	100.0%	H
EU-27	40.3%	-

Source: Eurostat, JRC, EFGS, REGIO-GIS. Urban-rural typology is defined such that a “predominately urban area” is where the share of population living in rural local administrative unit 2 (LAU2) is below 15%. Data does not cover Départements d'outre-mer (FR9), Região Autónoma dos Açores (PT20) and Região Autónoma da Madeira (PT30). For more on the new rural-urban typology of the European Commission see http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology. LMH cluster is determined by equally dividing the member states across each cluster.

Alignment of the USO

In order to capture variation in the quality of postal services, we utilise one of the indicators developed in PwC (2006) – the market alignment of the USO – to characterise the quality of the USO.¹⁴ This indicator combines elements of: postal counter density (km² covered per counter); postal counters per inhabitant; frequency of delivery; political

¹⁴ Following the implementation of the 2008 postal directive the index might not provide a complete picture of the current situation.

willingness to reduce USO service level; and political willingness to increase USO product tariffs. The indicator score of obligations is measured by its deviation from what can be expected in an unregulated market. Findings in Table 3.16 suggest that, similar to urbanisation, the USO indicator does not appear to be correlated with regions. The importance of this is that we need to ensure we capture variation across the selection of member states and region is not enough to ensure such variation.

Table 3.16: Indicator for market alignment of the USO, 2006

Member state	USO indicator	LMH cluster
Romania	1.3	L
France	1.5	L
Slovenia	1.5	L
Bulgaria	1.6	L
Czech Republic	1.6	L
Italy	1.6	L
Latvia	1.6	L
United Kingdom	1.8	L
Austria	2.0	M
Cyprus	2.0	M
Denmark	2.0	M
Hungary	2.0	M
Luxembourg	2.0	M
Malta	2.0	M
Poland	2.0	M
Slovakia	2.0	M
Estonia	2.2	M
Germany	2.2	M
Ireland	2.2	M
Lithuania	2.2	M
Netherlands	2.2	M
Belgium	2.4	H
Greece	2.5	H
Finland	2.7	H
Portugal	2.7	H
Sweden	3.1	H
Spain	3.5	H
EU-27 (mean)	2.1	-

Source: PwC (2006). LMH cluster is determined by the mean value where "medium" is the mean ± 0.1 , "low" is all values lower than medium and "high" is all values higher than the mean.

Perception of affordability

The extent to which a population finds its postal service affordable may affect their WTP for different attributes of postal delivery. Perceptions of the affordability of postal services for member states are provided in Table 3.17, which indicates that individuals across the

EU generally find postal services affordable, with those in the Nordic countries finding services less affordable, relative to other countries.

Table 3.17: Perceptions of the affordability of postal services, 2007

Member states	Proportion of respondents who believe postal services are "affordable"	LMH cluster
Finland	72%	L
Sweden	74%	L
Poland	76%	L
Spain	83%	L
Czech Republic	84%	L
Denmark	85%	L
Germany	85%	L
Italy	86%	L
Hungary	86%	L
Greece	87%	M
Estonia	88%	M
Latvia	88%	M
Austria	89%	M
Portugal	89%	M
Slovenia	89%	M
France	90%	H
Luxembourg	91%	H
Belgium	92%	H
Cyprus	92%	H
Malta	92%	H
Slovakia	92%	H
Netherlands	94%	H
Lithuania	96%	H
United Kingdom	96%	H
Ireland	99%	H
EU-27 (mean)	88%	.

Source: Eurobarometer (2007). LMH cluster is determined by the mean value where "medium" is the mean ± 0.1 , "low" is all values lower than medium and "high" is all values higher than the mean. Question posed to respondent is: In general, would you say that the price of (INSERT PROPOSITION) is affordable or not? By that, I mean that I would like to know if you are able to afford the services you need.

Market experience

The experiences of delivering in two postal markets – letters and parcels – may influence individuals' and businesses' preferences for different attributes of postal delivery. Using findings in van der Lijn et al. (2006) on the "views" of incumbents and entrants in the market for delivering parcels and letters, we consider the shares held by incumbents and entrants in each of the markets. Table 3.18 shows there are differences in experience in the market for letters and parcels across the member states. There does not appear to be clustering by region according to market experience.

Table 3.18: Market experience in letters and parcels, 2006

Member state	Parcels (market share incumbent)	LMH cluster	Member state	Letters (market share entrants)	LMH cluster
Bulgaria	100.0	L	Cyprus	0.0	L
Denmark	100.0	L	Finland	0.0	L
Malta	100.0	L	Hungary	0.0	L
Czech Republic	85.0	L	Poland	0.0	L
Slovenia	78.0	L	Greece	1.0	L
Slovakia	65.0	L	Ireland	1.0	L
Lithuania	53.0	M	Latvia	1.0	L
Ireland	49.0	M	Lithuania	1.0	L
Cyprus	45.0	M	Malta	1.0	L
Portugal	44.0	M	Austria	2.0	L
Austria	40.0	H	Belgium	2.0	L
Netherlands	40.0	H	France	2.0	L
Germany	38.0	H	Luxembourg	2.0	L
Poland	25.0	H	Portugal	2.0	L
Hungary	17.0	H	Slovakia	2.0	L
Latvia	14.0	H	Slovenia	2.5	M
Romania	13.0	H	Romania	4.0	M
Belgium	11.0	H	Czech Republic	5.0	M
Italy	11.0	H	Denmark	5.0	M
Luxembourg	10.0	H	Estonia	5.0	M
United Kingdom	2.0	H	Italy	7.0	M
Spain*	.	H	Spain	8.2	H
Sweden*	.	H	Sweden	9.3	H
Estonia	.	.	Germany	10.4	H
Finland	.	.	Netherlands	14.0	H
France	.	.	United Kingdom	20.0	H
Greece	.	.	Bulgaria	30.0	H

Source: based on Van der Lijn et al. (2008). * Based on expert assessment. Note that market share of the incumbent is equal to 100.0 market share of entrants.

Final selection of member states

Each of the member states was assigned to its corresponding LMH cluster for each of the criteria, as illustrated in Table 3.19. The aim of the member state selection process was to choose member states with a wide range of variation across criteria – the clustering provides a frame for such selection. In particular, for each criterion (e.g. internet access and use, urbanisation and so on) we aim to select member states that display as much variation as is possible.

Table 3.19: Summary of postal characteristics across member states

	Low	Medium	High
Size¹	MT,LU,CY,EE,SI,LV,L T,IE,FI	SK,DK,BG,AT, SE ,HU, CZ, PT,BE	EL,NL,RO, PL ,ES,IT,U K, FR,DE
Letter volume²	BG,RO,LV,LT, PL ,EL, SK,	CY,HU,EE,CZ,IT,PT, ES,MT	IE,DE,SI,DK, SE ,NL,L U,FI
Urbanisation³	EE,CY,LU,SI,RO,SK, BG, HU,SE	DK,CZ,LT,FI, PL ,IE,AT ,FR, IT	DE ,EL,LV,PT,ES,BE, NL, UK,MT
USO⁴	RO,FR,SI,BG,CZ,IT,L V, UK	AT,CY,DK,HU,LU,MT, PL ,SK,EE,DE,IE,LT,N L	BE,EL,FI,PT, SE ,ES,
Perception of affordability⁵	FI, SE , PL ,ES,CZ,DK,D E,IT,HU	EL,EE,LV,AT,PT,SI	FR,LU,BE,CY,MT,SK, NL,LT,UK,IE
Market experience (letters)⁶	AT,BE,CY,FI,FR,EL,H U,IE,LV,LU,MT, PL ,PT ,SK	CZ,DK,EE, IT ,RO,SI	BG,DE,NL,ES, SE ,UK
Market experience (parcel)⁶	BG,CZ,DK,MT,SK,SI	CY,IE,LT,PT	AT,BE,DE,HU,IT,LV,L U,NL, PL ,RO,ES, SE ,U K
Digital penetration¹	BG, PL ,SK,RO,EL,HU, CZ,PT,CY	LT,LV, IT ,SI,IE,ES,MT, AT, EE	FR,DE,BE,LU,UK,FI, SE , NL,DK
E-commerce¹	RO,BG,LT,EL,PT,IT,E E, LV,CY	HU,ES,SI,CZ, PL ,SK,I E, MT,BE	AT,FR,FI,DE,LU, SE ,N L,UK,DK
State ownership⁷	DE,NL,MT	BE,AT,IT	DK,IE,FR,LU,FI, SE ,U K,CZ,RO,BG,EE,LV,L T,HU, PL ,SI,SK,CY,EL ,ES,PT

Source: 1) Eurostat (2010); 2) DG Internal Market & Services (2010); 3) DG REGIO; 4) PWC (2006) (under review); 5) Eurobarometer (2007); 6) Based on Van der Lijn et al. (2006); 7) Copenhagen Economics (2010). Selected member states are in bold.

There is no combination of member states that can allow for maximum variation (one member state is in the low category, one in the medium category, and one in the high category) across every criterion and still maintain 20% of the EU population and have one member state from each region. Therefore, we decided to consider three combinations (of three member states) that demonstrated variation across the different criteria.

The process for identifying three combinations started with the selection of a different western country for each combination. The western countries selected for each combination were determined by looking into particular clusters across some of the criteria. In particular, we selected three western countries that were in the following criteria clusters: internet access and use (high), size (medium-high), state ownership (medium-high), letter volume (high) and affordability (low).

The three western countries selected were Germany, Denmark and Sweden.

From there, we selected one country from the eastern region and one from the southern region to complete the combinations. Where possible the selections from the eastern and southern region needed to be, as much as possible, in different parts of the LMH cluster from the western countries. In other words, given where the western countries were situated in the LMH cluster for each criterion, we selected an eastern country and a western country that covered other parts of the LMH cluster.

The three combinations considered were:

- Germany–Italy–Bulgaria
- Denmark–Italy–Poland
- Sweden–Italy–Poland.

After deliberation of the three potential combinations in terms of suitable variation, we concluded that the Sweden–Italy–Poland option offered a very good level of variation across key dimensions and therefore recommended that the surveys be undertaken in these countries.

Table 3.20 presents summary statistics for the three member states and the variation in the LMH cluster.

Table 3.20: Summary statistics for Sweden, Italy and Poland

	Sweden	Italy	Poland	LMH cluster for Sweden, Italy and Poland
Region cluster	West	South	East	.
Size (proportion of EU population)	1.86%	12.04%	7.62%	M-H-H
Letter volume per capita	287	96	48	H-M-L
Urbanisation	20.9%	35.4%	28.3%	L-M-M
USO	3.1	1.6	2.0	H-L-M
Perception of affordability	74%	86%	76%	L-L-L
Market experience (letters)	9.3	7.0	0.0	H-M-L
Market experience (parcel)	*	11.0	25.0	H-H-H
Digital penetration	32.5%	18.1%	9.6%	H-M-L
E-commerce	66.0%	15.0%	29.0%	H-L-M
State ownership	100.0%	65.0%	100.0%	H-M-H

3.10 Pilot testing the questionnaire in the member states

Cognitive and pilot tests of the draft questionnaire were undertaken in all three member states (Sweden, Italy and Poland). The findings from these tests are discussed below.

3.10.1 Cognitive testing

Cognitive testing of the questionnaire was undertaken in the week commencing 18 April 2011. In these tests interviewers administered the questionnaire with genuine respondents to:

- test respondents’ comprehension and ability to answer the questions
- investigate how respondents interpret the meaning of specific terms
- investigate whether there are any missing questions.

Different approaches such as asking the respondent to “think aloud” and describe what they are thinking as they consider and answer the question or more detailed probing of responses given were used to assess respondents’ understanding of the questionnaire. Cognitive testing also allowed alternative wording or phrasing to be explored. This is especially important when we are working with a questionnaire which has been translated, as is the case in this study.

The result is to produce a higher quality questionnaire with more reliable data as any ambiguities have been eliminated before the questionnaire is used.

We had aimed to undertake 20 cognitive interviews in each country with the following spread of respondent types:

- five vulnerable consumers
- five non-vulnerable consumers
- five SMEs
- five large businesses.

Table 3.21 shows the number of cognitive interviews undertaken in each country. From this table it is observed that we met our aims in Sweden, that we obtained nearly enough interviews in Poland (although no interviews were undertaken with large businesses) and that we were short of interviews in Italy.

Table 3.21: Numbers of cognitive interviews by country and type

	Sweden	Poland	Italy	Total
Vulnerable	5	3	1	9
Not vulnerable	5	7	5	17
SMEs	5	9	6	20
Large businesses	5	0	2	7
Total	20	19	14	53

The cognitive tests indicated that overall the questionnaire worked well. Specifically, respondents had a good understanding of the questions, although the SP choice experiments were felt to be complex and the overall questionnaire length was felt to be too long. Minor changes to the questionnaire were made as a result of the cognitive interview findings (and additional minor changes were made at the client's suggestion).

3.10.2 Pilot surveys

Formal pilot surveys were then undertaken with the revised questionnaires. We aimed to undertake 30 pilot interviews in each country, including:

- 15 consumer interviews
- six interviews with vulnerable users
- six SMEs and three large businesses.

The pilot surveys exactly replicated the phone-post/e-mail/fax-phone methodology to be used in the main surveys.

The pilot surveys were used to assess:

- the recruitment process
- survey response rates
- the clarity and flow of the questionnaire
- the appropriateness of the language used

- the accuracy of all routings
- the SP experimental design and understanding of the choice exercises
- the interview duration.

The pilot study showed that in general the survey was working as planned. Recruitment rates were reasonable, the survey questions were largely understood and we obtained decent quality data. However, the pilot survey identified a number of issues.

First, the questionnaire was found to be too long. We therefore dropped a number of the longer background questions, including importance questions, ranking questions of importance and satisfaction questions.

We also moved the SP choice exercises so they were undertaken earlier in the questionnaire, after the background questions about use of postal services, so that respondents were less fatigued when they participated in the choice experiments.

We also made the following improvements to the choice exercises:

- The presentation of the SP choice exercises was enhanced, so that when attributes were the same for both alternatives they were shown in a lighter font.
- The Saturday delivery option was dropped from the first and second choice exercises, to simplify the choice tasks.
- The text in the choice exercises was reduced as much as possible. Already the text was quite concise, but reductions in text could be made for the attributes that incorporated percentages. For these, we dropped the percentage descriptions and presented the quantity values only, e.g. "85 out of 100 letters delivered on time".
- The range of the reliability and loss attributes was extended to make the choices "more different" to respondents (reliability to include 80 out of 100 letters delivered on time, 90 out of 100 letters delivered on time, 95 out of 100 letters delivered on time; 0 out of 100 letters lost, 5 out of 100 letters lost, 10 out 100 letters lost).
- The definition of uniform pricing was clarified. In the pilot survey the uniform pricing level was presented as "Same price to deliver to all locations" for both letters and parcels. There was some question as to whether this included international post, and how this might work, so we changed the text to "Same price to deliver letters/packages to any destination within Poland/Sweden/Italy". Also for non-uniform pricing options an example was included, e.g. "For example, it might be cheaper for local deliveries and more expensive for more distant destinations".
- The range of price adjustments was increased to include: -30%, current price, +30%, +50%, +100% and +150%.
- The definition of a secure box was clarified. In the pilot survey the description was "Delivered to a secure box 100m from your home". This was extended to say "Delivered to a secure box 100m from your home where you can collect your letters/parcels at any time".
- Visual aids were included in Experiments 1 and 2 to emphasise that these are related to letters and parcels, respectively.
- The experimental design was amended by assuming that all attributes are categorical to ensure more choices between intermediate levels and that the design was checked to

ensure that the number of dominant choices was small (a dominant alternative is an alternative where everything is better (or worse) than the other alternative).

3.11 **Main surveys**

The main surveys were conducted from 25 May 2011 to 27 June 2011. It is important to allow a generous fieldwork period for this type of study for several reasons. The three stage process (initial recruitment, sending choice sets to respondents and the recontacting to complete the survey) can be a lengthy process. In some countries, sending the material by post can add up to a week to the process and this time lag can result in respondents being less willing to take part. In order to ensure that the sample is not therefore biased towards those who take part using email, the survey period needs to allow for recruitment and interviewing of those without internet access.

Furthermore it may be difficult to anticipate willingness to take part within different countries; cultural differences may make different nationalities more or less inclined to take part in research and attitudes towards the postal service in that country will also have an impact on willingness to take part. For example, we found high levels of cooperation in Sweden and very positive views of the postal service.

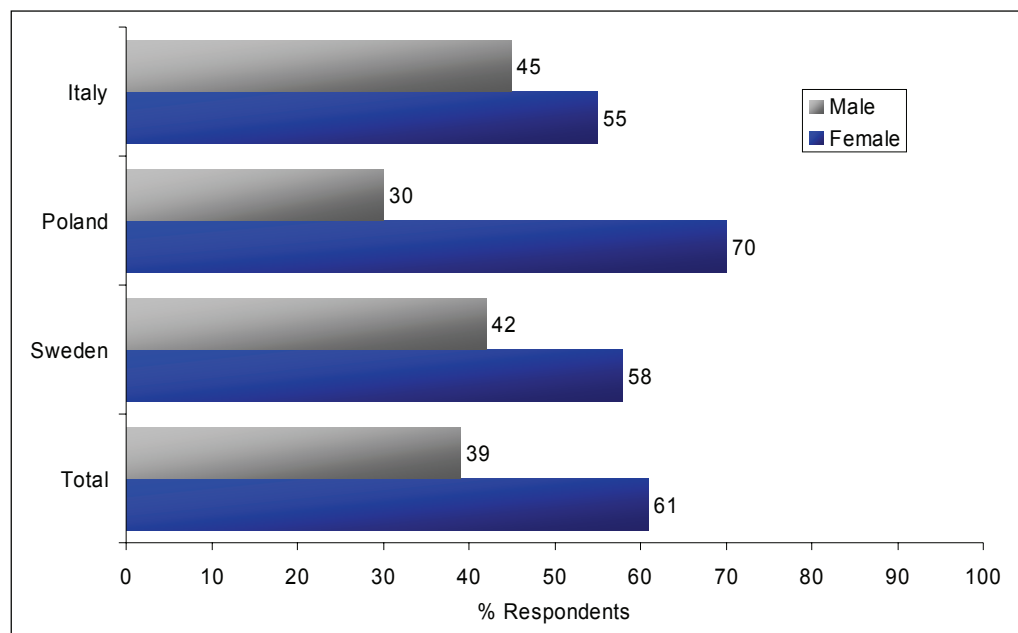
It is also important to take into account national holidays within the different countries as it is generally not possible to interview on public holidays and this reduces the effective fieldwork period.

3.11.1 **Characteristics of the achieved sample**

In total 1,438 interviews were undertaken in three countries; 1,055 among residential consumers and 383 among businesses.

The breakdown of interviews by different sample characteristics is shown in the following tables.

The aim was to interview at least 40% of each gender in each country. This was achieved in Sweden and Italy but not in Poland where it proved difficult to interview men. However, 30% of respondents in Poland were male.



Base: Italy 350; Poland 351; Sweden 354; Total 1,055

Figure 3.7: Gender distribution of achieved sample by country

A good spread of ages of respondents was achieved in the main survey (see Table 3.22). In Sweden, the age profile was older where only 15% were aged under 35 years compared with 25% and 26% in Poland and Italy respectively.

Table 3.22: Age distribution of achieved sample by country

	Total	Country			Consumer user type	
		Sweden	Poland	Italy	Vulnerable	Non-vulnerable
Total	1,055	354	351	350	292	763
	100%	100%	100%	100%	100%	100%
18–24	102	17	42	43	16	86
	10%	5%	12%	12%	5%	11%
25–34	131	34	47	50	6	125
	12%	10%	13%	14%	2%	16%
35–44	219	74	60	85	23	196
	21%	21%	17%	24%	8%	26%
45–54	217	59	64	94	20	197
	21%	17%	18%	27%	7%	26%
55–59	103	30	47	26	18	85
	10%	8%	13%	7%	6%	11%
60–64	91	40	31	20	20	71
	9%	11%	9%	6%	7%	9%
65+	188	100	56	32	188	
	18%	28%	16%	9%	64%	
Refused	4		4		1	3
	0%		1%		0%	0%

Minimum targets for each age group had been set for each country (see Table 3.23). These were achieved in all countries except for the under-35 year category in Sweden, which fell short of the target of 70. However, the total number of 18–35 year olds exceeded the minimum specification.

Table 3.23: Number of interviews meeting age targets by country

Age	Total		Sweden		Poland		Italy	
	Minimum target	Achieved sample	Minimum target	Achieved sample	Minimum target	Achieved sample	Minimum target	Achieved sample
18–34	212	233	70	51	80	89	62	93
35–54	266	436	88	133	80	124	98	179
55–64	122	194	42	70	40	78	40	46

The target of interviewing 100 vulnerable respondents per country was achieved in Sweden and Poland but not in Italy (see Figure 3.8).

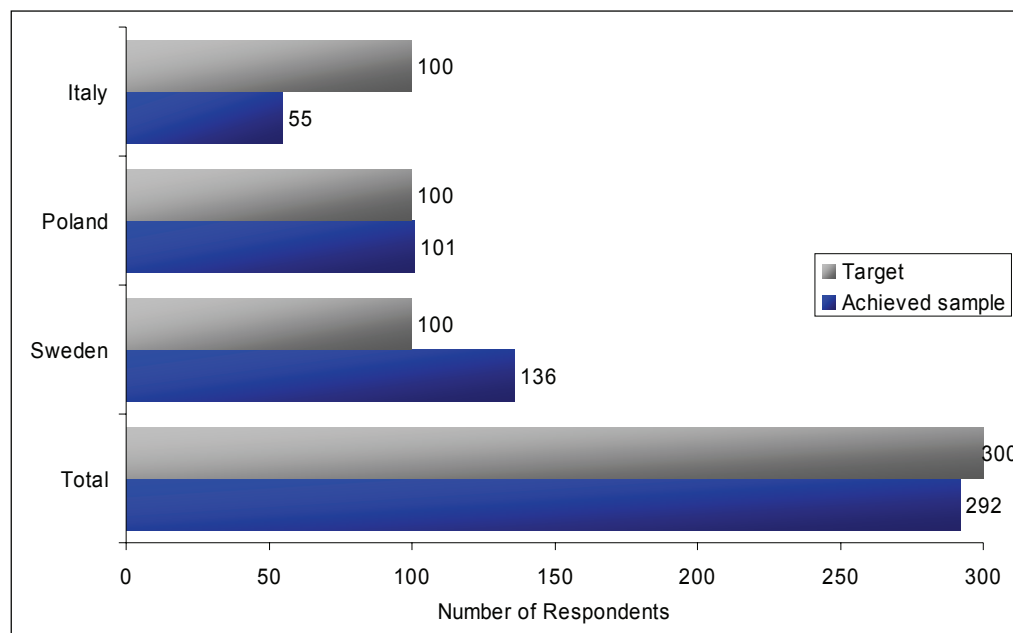


Figure 3.8: Number of interviews meeting vulnerability targets by country

All over 65s were classified as vulnerable and in fact seven out of ten vulnerable respondents were aged 60 or over.

In total, 8% of consumers said they had a longstanding health problem or disability affecting their ability to travel or get about. This varied widely between country, accounting for 11% of the sample in Poland, 9% in Sweden but just 3% in Italy. All respondents who responded positively to this question were categorised as vulnerable. In total, 28% of vulnerable respondents had a health problem.

We observed a significant spread of household income levels in the survey sample (see Figure 3.9). We also observed higher incomes, on average, in Sweden than in Italy and Poland. Also, in Poland and Italy the proportion of respondents who either did not know or preferred not to reveal the household income was especially high (44% and 52% respectively compared with 22% in Sweden).

Those with a low household income – defined as below 111,875 SEK in Sweden, below 9,000 Euros in Italy and below 11,880 PLN in Poland – were counted as vulnerable.

Overall 28% of respondents were vulnerable (either aged over 65, with a longstanding health problem or disability, or with a low household income). This ranged across the three countries as follows: 38% in Sweden, 29% in Poland and 16% in Italy (where the target of 100 vulnerable respondents was not achieved although the overall total of 292 vulnerable respondents was just short of the target of 300).

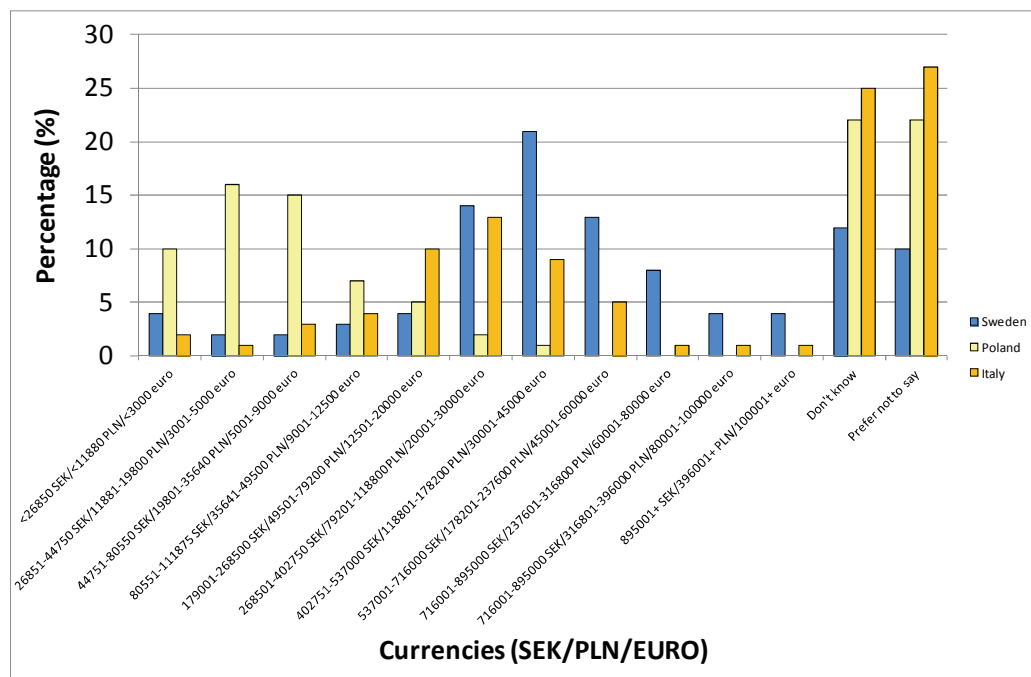


Figure 3.9: Distribution of annual total household income before tax, by country

Three in ten respondents were located in rural locations. The Swedish sample had the highest proportion of rural dwellers, with almost half of those in Sweden saying they lived or worked in a rural location. This is consistent with the urbanisation ranking of countries. Overall half of the interviews were located in urban areas and one in five in city centres, the latter rising to 34% among large businesses and 28% of Polish respondents.

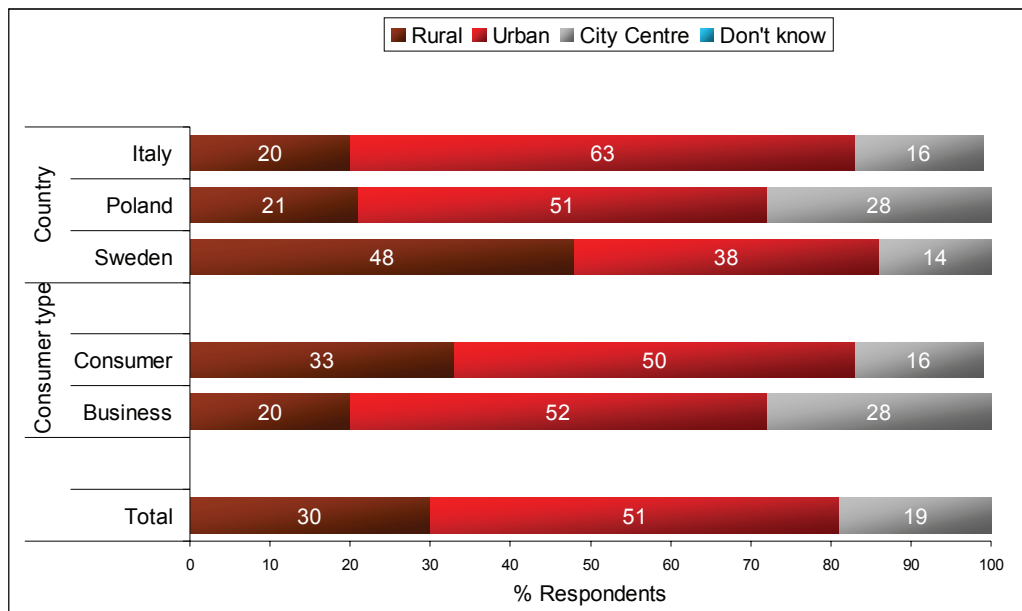


Figure 3.10: Household location (rural, urban, city centre) by country

The targets for SMEs and large businesses were achieved in all countries.

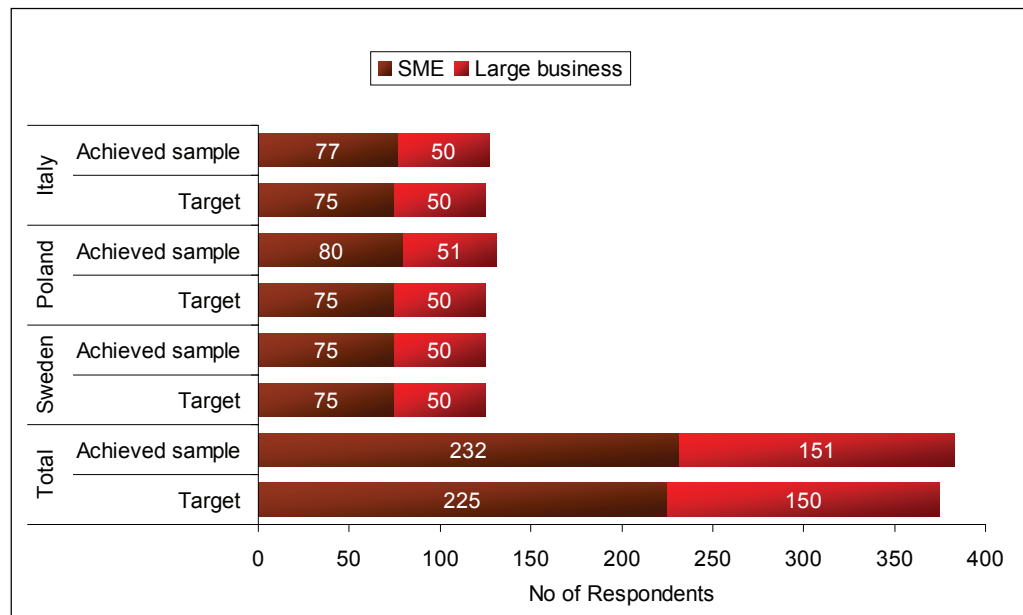


Figure 3.11: Number of SMEs and large business interviews by country

We interviewed 50 large businesses (defined as 250 or more employees) in each country (see Table 3.24). In the Swedish sample 22% of companies were very large (with 1,000 or more employees) compared with 12% in Poland and 8% in Italy.

Table 3.24: Company size by country

	Total	Country		
		Sweden	Poland	Italy
Total	383	125	131	127
	100%	100%	100%	100%
<5	53	18	15	20
	14%	14%	11%	16%
6 to 9	32	9	10	13
	8%	7%	8%	10%
10 to 49	79	25	25	29
	21%	20%	19%	23%
50 to 99	22	11	6	5
	6%	9%	5%	4%
100 to 249	46	12	24	10
	12%	10%	18%	8%
250 to 499	65	12	26	27
	17%	10%	20%	21%
500 to 999	33	11	9	13
	9%	9%	7%	10%
1000 or more	53	27	16	10
	14%	22%	12%	8%

Overall half of the businesses interviewed were unable to provide their turnover. Company turnover was lowest in Poland but fairly similar in Sweden and Italy (see Table 3.25).

Table 3.25: Company turnover by country

	Total	Country		
		Sweden	Poland	Italy
Total	383	125	131	127
	100%	100%	100%	100%
18 million SEK or less/8 million PLN or less/2 million Euros or less	23	23	27	22
	6%	18%	21%	17%
Between 18 and 90 million SEK/ Between 8 and 40 million PLN/ Between 2 and 10 million Euros	24	24	10	23
	6%	19%	8%	18%
Between 90 and 450 million SEK/ Between 40 and 200 million PLN/Between 10 and 50 million Euro	13	13	3	4
	3%	10%	2%	3%
More than 450 million SEK/ More than 200 million PLN/ More than 50 million Euros	16	16	4	16
	4%	13%	3%	13%
Don't know	198	49	87	62
	52%	39%	66%	49%

3.12 Summary of key implementation issues

In this chapter we have described the implementation of the recommended valuation methodology in three member states, including:

- recommending the postal service attributes to be tested in the choice experiments, using a economic behavioural framework, as well as taking into account findings from other studies, information regarding specification of USO conditions and stakeholders views
- considering other design issues such as altruism and the treatment of an “as now” baseline alternative
- designing the choice experiments and background questions for the SP surveys
- identifying key market segments and specifying survey sample sizes
- specifying the survey methodology, and specifically recommending the use of a phone–post/Email/Fax–phone approach
- choosing the member states for testing the methodology such that we chose states with a wide range of variation in dimensions, which may influence consumers’ preferences and WTP for postal services
- pilot testing and amending the questionnaire
- undertaking the main surveys in the member states.

CHAPTER 4 **Postal service preferences for customers in Italy, Poland and Sweden**

4.1 **Background findings**

Below we summarise the key findings from analysis of the background questions in the survey.

4.1.1 **Mail sending and receipt**

Letter sending

Overall, close to half of consumers were low senders of letter mail, either never sending letters or sending them less than once a month (see Table 4.1). Those consumers who were more frequent letter senders tended to send between one and five items a month.

Businesses did not tend to be low senders with the exception of Italy, where 3% claimed never to send letters. Half of all businesses sent between 21 and 500 letters per month.

In line with EC and UPU¹⁵ data, sending was highest in Sweden where only around one in four respondents either never sent letters or sent less than one per month (24%). This compares with 39% of those in Poland and 43% of those in Italy being low senders. In particular, more than a third (35%) of consumers in Italy claimed never to send letters.

¹⁵ The Universal Postal Union (UPU) is the primary forum for cooperation between postal sector players, helping to ensure a universal network of up-to-date products and services. It was established in 1874 and has 192 member countries. The organisation fulfils an advisory, mediating and liaison role, and provides technical assistance where needed. It sets the rules for international mail exchanges and makes recommendations to stimulate growth in mail, parcel and financial services volumes and improve quality of service for customers.

Table 4.1: Letters sent per month

	Consumer type		Consumer type and country					
	Busines s	Consum er	Sweden Busines s	Sweden Consum er	Poland Busines s	Poland Consum er	Italy Busines s	Italy Consum er
Total	383 100%	1,055 100%	125 100%	354 100%	131 100%	351 100%	127 100%	350 100%
None; I never send letters	4 1%	209 20%		27 8%		59 17%	4 3%	123 35%
None; I send letters less than once a month	1 0%	293 28%		87 25%	1 1%	129 37%		77 22%
Between 1 and 5	18 5%	448 42%	1 1%	202 57%	4 3%	130 37%	13 10%	116 33%
Between 6 and 10	17 4%	57 5%	2 2%	18 5%	8 6%	17 5%	7 6%	22 6%
Between 11 and 20	26 7%	30 3%	1 1%	14 4%	12 9%	12 3%	13 10%	4 1%
Between 21 and 100	85 22%	15 1%	25 20%	3 1%	29 22%	4 1%	31 24%	8 2%
101–500	106 28%	3 0%	39 31%	3 1%	34 26%		33 26%	
501–1,000	44 11%		16 13%		16 12%		12 9%	
1,001–10,000	65 17%		29 23%		25 19%		11 9%	
More than 10,000	17 4%		12 10%		2 2%		3 2%	

When we look at letter sending by size of business, there is a marked difference between large businesses and SMEs: 61% of large businesses send more than 500 letters per month compared with 14% of SMEs and none of the SMEs sending over 10,000 letters per month, while at least one in ten large businesses sent this volume (see Table 4.2). Most of this very high volume sending was from large businesses in Sweden.

Table 4.2: Letters sent per month by SMEs and large businesses

	Business type		Business type by country					
	SME	Large businesses	SME Sweden	Large business Sweden	SME Poland	Large business Poland	SME Italy	Large business Italy
	232	151	75	50	80	51	77	50
	100%	100%	100%	100%	100%	100%	100%	100%
None; I never send letters	4						4	
	2%						5%	
None; I send letters less than once a month	1				1			
	0%				1%			
Between 1 and 5	17	1	1		4		12	1
	7%	1%	1%		5%		16%	2%
Between 6 and 10	16	1	2		8		6	1
	7%	1%	3%		10%		8%	2%
Between 11 and 20	25	1	1		12		12	1
	11%	1%	1%		15%		16%	2%
Between 21 and 100	65	20	24	1	20	9	21	10
	28%	13%	32%	2%	25%	18%	27%	20%
101–500	69	37	33	6	19	15	17	16
	30%	25%	44%	12%	24%	29%	22%	32%
501–1,000	17	27	7	9	6	10	4	8
	7%	18%	9%	18%	8%	20%	5%	16%
1,001–10,000	17	48	6	23	10	15	1	10
	7%	32%	8%	46%	13%	29%	1%	20%
More than 10,000	1	16	1	11		2		3
	0%	11%	1%	22%		4%		6%

The likelihood that consumers were low senders of mail decreased with age: 56% of those aged 18–34 years were low or non-senders of letters, compared with 49% of 35–54 year olds, 44% of 55–64 year olds and 36% of those aged 65 years or older.

Earlier research has shown that a person's mail usage correlates with its economic activity. According to Jimenez et al. (2006), people aged between 45 and 54 are most strongly involved in mail, closely followed by the people aged between 55 and 64. In this view, the last percentage (36% of those aged 65+) is counter-indicative and may indicate a general downward shift of mail usage from people who are under 65. As a result, over time letter volumes may reduce simply as a function of demographic change.

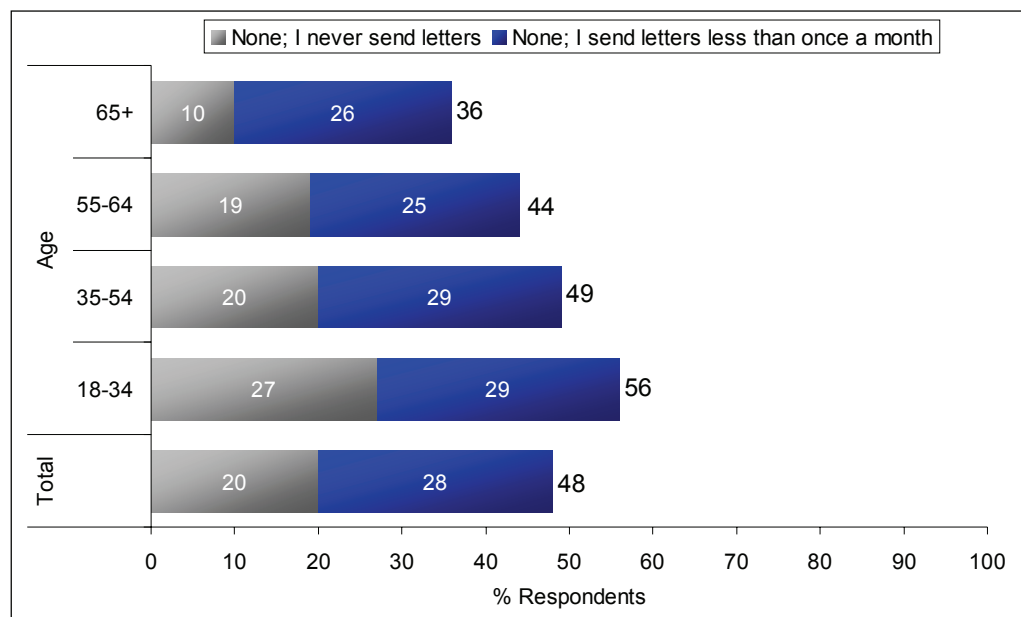


Figure 4.1: Low and non-senders of letters by age, consumers

Letter receipt

As expected, consumers were more likely to be regular receivers of mail than senders of mail (the vast majority of them receiving between 20 and 100 items per month and just 1% of respondents receiving more than 100 items). Around one in six (17%) received more than 20 letters per month. However, the majority of consumers (63%) received ten or fewer letters per month.

Two-thirds of businesses reported receiving more than 100 letters per month.

The level of letter receipt (as with sending) was highest in Sweden, with 31% of consumers reporting they receive more than 20 letters per month. This compares with 15% of consumers in Italy and just 5% of those in Poland. For businesses, again, receipt of letters was highest for businesses in Sweden, with 82% receiving more than 100 letters per month (compared with 60% of those in Poland and 54% of those in Italy). The figures are shown in Table 4.3.

Table 4.3: Letters received per month

	Total	Consumer type		Consumer type and country				
		Business	Consumer	Sweden Business	Sweden Consumer	Poland Business	Poland Consumer	Italy Business
	1,438 100%	383 100%	1,055 100%	125 100%	354 100%	131 100%	351 100%	127 100%
Less than 5	387 27%	6 2%	381 36%		59 17%	2 2%	192 55%	4 3%
Between 6 and 10	301 21%	11 3%	290 27%		91 26%	3 2%	104 30%	8 6%
Between 11 and 20	223 16%	19 5%	204 19%	2 2%	96 27%	13 10%	39 11%	4 3%
Between 21 and 100	262 18%	94 25%	168 16%	21 17%	102 29%	32 24%	16 5%	41 32%
More than 100	259 18%	248 65%	11 1%	102 82%	6 2%	78 60%		68 54%
Don't know	6 0%	5 1%	1 0%			3 2%		2 2%

Nine out of ten large businesses received at least 100 letters a month compared with half of SMEs who received this volume of letter mail (see Table 4.4).

Table 4.4: Letters received per month by SMEs and large businesses

	Business type		Business type by country					
	SME	Large businesses	SME Sweden	Large business Sweden	SME Poland	Large business Poland	SME Italy	Large business Italy
	232 100%	151 100%	75 100%	50 100%	80 100%	51 100%	77 100%	50 100%
Less than 5	4 2%	2 1%			1 1%	1 2%	3 4%	1 2%
Between 6 and 10	11 5%				3 4%		8 10%	
Between 11 and 20	18 8%	1 1%	2 3%		13 16%		3 4%	1 2%
Between 21 and 100	84 36%	10 7%	20 27%	1 2%	28 35%	4 8%	36 47%	5 10%
More than 100	111 48%	137 91%	53 71%	49 98%	33 41%	45 88%	25 32%	43 86%
Don't know	4 2%	1 1%			2 3%	1 2%	2 3%	

Parcel sending

Two in five consumers were low senders of parcels, either never sending parcels (28%) or sending them less than once a year (12%). Those consumers who were more frequent parcel senders tended to send between one and five items a year.

Businesses were asked about parcel sending monthly rather than annually: 16% of businesses reported that they never sent parcels, while over half of all businesses sent six or more parcels per month. There was no apparent difference in levels of parcel sending between those who sell online and those who don't. However, there were only a comparatively small number of online retailers in the sample (45).

The sending of parcels varied considerably by country: consumers in Sweden were notably more likely to send parcels than those in Poland and Italy: 15% of residents in Sweden reported they never sent parcels, compared with 32% in Poland and 38% in Italy. Similarly, just 4% of businesses in Sweden reported never sending parcels compared with 16% of those in Poland and 27% of those in Italy. This may be linked to higher levels of internet penetration in Sweden leading to more online trading or higher GDP per capita (as a measure for economic activity). There are also many more letters sent, per person, in Sweden.

Unlike with the sending of letters, the sending of parcels was similar among respondents of different ages (see Table 4.5). While postal communication tends to be lower among younger people as they are more likely to use electronic forms of communication, parcel sending does not have an electronic substitute. In fact, using the internet to buy and sell is prevalent among younger age groups and they are therefore as likely as older people to send parcels. If this trend continues, there is no reason to believe that parcel volumes will decrease over time as the population is aging. In fact the opposite may be true and as internet penetration increases and online retailing becomes more prevalent, packet and parcel volumes may increase accordingly.

Table 4.5: Parcels sent per year (residents)

	Total Consumer	Country		
		Sweden	Poland	Italy
Total (number of respondents)	1,055 100%	354 100%	351 100%	350 100%
None; I never send parcels	300 28%	53 15%	113 32%	134 38%
None; I send parcels less than once a year	131 12%	43 12%	52 15%	36 10%
Between 1 and 5	502 48%	205 58%	148 42%	149 43%
Between 6 and 10	76 7%	36 10%	23 7%	17 5%
Between 11 and 20	23 2%	12 3%	6 2%	5 1%
Between 21 and 100	22 2%	5 1%	9 3%	8 2%
101–500	1 0%			1 0%
501–1000				
More than 1000				
Don't know				

Overall fewer large businesses than SMEs never send parcels (one in ten large businesses versus one in five SMEs) (see Table 4.6). However, the difference in volumes sent is much less marked than for letter sending: 15% of SMEs and 17% of large businesses send 100+ parcels per month. The profile was slightly different in Italy where four in ten SMEs sent no parcels and no SME sent more than 500 parcels in a month.

Table 4.6: Parcels sent per month by SMEs and large businesses

	Business type		Business type by country					
	SME	Large businesses	SME Sweden	Large business Sweden	SME Poland	Large business Poland	SME Italy	Large business Italy
	232	151	75	50	80	51	77	50
	100%	100%	100%	100%	100%	100%	100%	100%
None; I never send parcels	46	14	5		14	7	27	7
	20%	9%	7%		18%	14%	35%	14%
None; I send parcels less than once a month/year	18	4	3		10	2	5	2
	8%	3%	4%		13%	4%	6%	4%
Between 1 and 5	47	18	8	6	20	8	19	4
	20%	12%	11%	12%	25%	16%	25%	8%
Between 6 and 10	24	17	8	10	9	4	7	3
	10%	11%	11%	20%	11%	8%	9%	6%
Between 11 and 20	13	17	7	10	3	4	3	3
	6%	11%	9%	20%	4%	8%	4%	6%
Between 21 and 100	44	40	17	15	17	13	10	12
	19%	26%	23%	30%	21%	25%	13%	24%
101–500	23	14	16	5	2	4	5	5
	10%	9%	21%	10%	3%	8%	6%	10%
501–1000	4	5	2	2	2			3
	2%	3%	3%	4%	3%			6%
More than 1000	6	7	4	1	2	2		4
	3%	5%	5%	2%	3%	4%		8%
Don't know	7	15	5	1	1	7	1	7
	3%	10%	7%	2%	1%	14%	1%	14%

Parcel receipt

As with letters, consumers were more likely to be regular receivers of parcels than senders of parcels: 17% of consumers received more than ten parcels per year. However, the majority of consumers (58%) received five or fewer parcels per year.

Businesses received more parcels than consumers; again monthly, one in five businesses received more than 100 parcels per month and more than half received more than ten parcels per month.

As with letters, the receipt of parcels for resident consumers was highest for consumers in Sweden (see Table 4.7). Half of consumers in Sweden (50%) reported receiving fewer than five parcels per year. Consumers in Poland had just slightly lower levels of parcel receipt than Sweden (56% received fewer than five per year) and in Italy two-thirds received fewer than five parcels per year.

For businesses, again, receipt of parcels was highest for businesses in Sweden, with one in three (34%) receiving more than 100 parcels per month. This compares with 13% of businesses in Poland and 9% of businesses in Italy receiving this number each month.

Table 4.7: Parcels received per year (residents)

	Total Consumers	Country		
		Sweden Consumer	Poland Consumer	Italy Consumer
Total	1,055 100%	354 100%	351 100%	350 100%
Less than 5	610 58%	176 50%	198 56%	236 67%
Between 5 and 10	265 25%	110 31%	87 25%	68 19%
Between 11 and 20	109 10%	40 11%	40 11%	29 8%
Between 21 and 100	58 5%	25 7%	20 6%	13 4%
More than 100	6 1%	3 1%	2 1%	1 0%
Don't know	7 1%		4 1%	3 1%

Parcel receipt was higher among large businesses; 52% of large businesses received at least 20 parcels a month compared with 32% of SMEs receiving this volume (see Table 4.8), but 12% of large business respondents were unable to estimate how many parcels they received.

Table 4.8: Parcels received per month by SMEs and large businesses

	Business type		Business type by country					
	SME	Large businesses	SME Sweden	Large business Sweden	SME Poland	Large business Poland	SME Italy	Large business Italy
	232	151	75	50	80	51	77	50
	100%	100%	100%	100%	100%	100%	100%	100%
Less than 5	82	21	12	2	34	10	36	9
	35%	14%	16%	4%	43%	20%	47%	18%
Between 5 and 10	35	14	7	2	14	6	14	6
	15%	9%	9%	4%	18%	12%	18%	12%
Between 11 and 20	28	19	13	3	8	7	7	9
	12%	13%	17%	6%	10%	14%	9%	18%
Between 21 and 100	45	39	17	22	14	10	14	7
	19%	26%	23%	44%	18%	20%	18%	14%
More than 100	31	40	21	21	7	10	3	9
	13%	26%	28%	42%	9%	20%	4%	18%
Don't know	11	18	5		3	8	3	10
	5%	12%	7%		4%	16%	4%	20%

4.1.2 Paying for postage

The majority of consumers (92%) use postage stamps to pay for postage of letters or parcels. A small number (7%) of consumers also reported buying postage online; and 4% mentioned using prepaid letters, parcels or boxes (the latter was especially likely in Sweden).

For businesses, postage stamps are the most common means of paying for postage overall (41%), with meter franking machines (38%) or an account or bulk mail (27%) also used by large numbers of businesses. There were notable differences by country: for businesses in Sweden the majority paid for postage using a meter franking machine (63%); in Italy postage stamps were the primary means of payment (58%); and in Poland half paid through an account or bulk mail (51%).

4.1.3 Internet access

Overall only 2% of business respondents had no internet access at work and 6% of consumers had no internet access at all, with nine out of ten having access at home. This varied somewhat across the countries (see Table 4.9). In Sweden 96% of consumers had internet access at home, in Italy the figure was 91% and in Poland much lower at 86%. In Poland 13% of consumers had no internet access at all (including at work or elsewhere); the corresponding figure for Sweden and Italy was 3%.

Vulnerable respondents were much less likely to have internet access: 81% compared with 96% of non-vulnerable respondents. Internet access at home also decreases with age: 99% of under 35s had home internet access while only 78% of over 65s did so. The difference

was most acute in Poland where only 66% of vulnerable respondents had internet access compared with 94% of non-vulnerable respondents. Looking at the component parts that define a respondent as vulnerable (age, health and household income), it is those with poor health who appear least likely to have internet access, 72% overall.

Nine out of ten respondents with internet access at home had broadband, falling to eight out of ten in Poland.

There was little difference in internet access at work for businesses; it ranged only from 97% in Italy to 99% in Sweden.

Table 4.9: Internet access by consumer type and country

	Consumer type and country					
	Sweden Business	Sweden Consumer	Poland Business	Poland Consumer	Italy Business	Italy Consumer
	125 100%	354 100%	131 100%	351 100%	127 100%	350 100%
Yes, at home	64 51%	339 96%	102 78%	302 86%	41 32%	319 91%
Yes, at work	124 99%	100 28%	129 98%	129 37%	123 97%	134 38%
Yes, elsewhere	1 1%	2 1%		10 3%	2 2%	2 1%
No, I don't have access to the internet		11 3%		46 13%		10 3%

Consumers' use of the internet for purchases

Two-thirds of consumers with internet access (66%) used the internet to purchase products or items that then needed to be delivered, including 19% who regularly did so (see Table 4.10). Use of the internet to purchase such products or items varied notably by country, however: just 17% of consumers with internet in Sweden said they never purchased these types of products or items, compared with 39% of those in Poland and 48% of those in Italy.

Unsurprisingly, purchase of such products or items decreased with age: just one in five (21%) of those aged 18–34 years did not use the internet for this sort of purchase, compared with almost half (46%) of those aged 65 years or older. This was consistent across all countries. We would therefore expect as the proportion of the population using the internet grows over time, there will be an increase in usage of the internet to purchase products needing a delivery and this in turn will impact on postal volumes.

Vulnerable respondents with internet access were less likely than the non-vulnerable to use it for purchasing products or items that needed to be delivered: 57% did so, compared with 68% of non-vulnerable respondents. As all over 65s were classified as vulnerable and only 54% of that age group (with internet access) purchase online, it would appear to be age rather than income or health which is most influencing this result. Men and those in

rural areas were more likely to use the internet for purchasing than were women and those in urban or city centre areas.

Table 4.10: Consumers use of the internet to purchase products or items which need to be delivered

	Total	Country			Age			
		Sweden	Poland	Italy	18–34	35–54	55–64	65+
Total (number of respondents)	988 100%	343 100%	305 100%	340 100%	233 100%	425 100%	178 100%	149 100%
Yes, regularly	184 19%	80 23%	48 16%	56 16%	58 25%	76 18%	28 16%	22 15%
Yes, occasionally	286 29%	116 34%	103 34%	67 20%	85 36%	133 31%	41 23%	27 18%
Yes, but rarely	177 18%	87 25%	35 11%	55 16%	40 17%	65 15%	40 22%	32 21%
No	341 35%	60 17%	119 39%	162 48%	50 21%	151 36%	69 39%	68 46%

Business reliance on the internet

Just 12% of businesses said that they use the internet to sell products or services which are then delivered by post. The majority of the businesses that do sell via the internet (58%) reported that they use the internet as a means of selling but other means are equally important. Around one in four (27%) stated that they are very dependent on the internet as a means of selling, while 16% reported that the internet is particularly important for their organisation. However, it should be noted that these results are based on just 45 respondents.

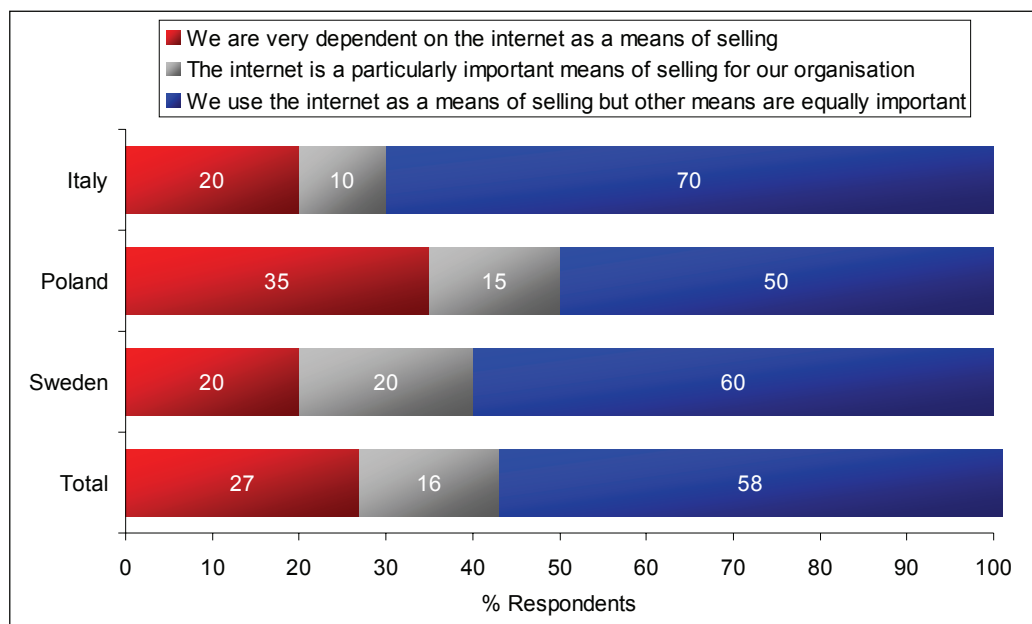


Figure 4.2: Business reliance on the internet for selling

4.1.4 Use of competitors

While the majority of consumers only used their postal administration, around one in four consumers (27%) on occasion use a competitor to the postal administration to send parcels (24%) or letters (6%) (see Table 4.11).

Younger people are more likely to have experience of postal services other than the postal administration. Just 15% of those aged 65 years or older also use a competitor to send parcels or letters, compared with 20% of those aged 55–64 years, 32% of those aged 35–54 years and 33% of those aged 18–34 years.

Businesses were notably more likely to use a competitor than consumers. Around four in five businesses (82%) mentioned that they use a competitor to send letters and/or parcels, including 77% who used a competitor to send parcels and 29% who used a competitor to send letters.

Table 4.11: Use of competitors

	Total	Consumer type		Country		
		Business	Consumer	Sweden	Poland	Italy
Total (number of respondents)	1,438 100%	383 100%	1,055 100%	479 100%	482 100%	477 100%
Yes, letters	174 12%	110 29%	64 6%	30 6%	67 14%	77 16%
Yes, parcels	547 38%	296 77%	251 24%	139 29%	216 45%	192 40%
No, only use Sweden Post/Poczta Polska/Poste Italiane	841 58%	70 18%	771 73%	329 69%	243 50%	269 56%
Don't know	17 1%	1 0%	16 2%	1 0%	9 2%	7 1%

In Sweden where the postal market has been completely liberalised since 1993 there was much less consumer experience with alternative operators than in the other countries: 85% only used Sweden Post compared with two-thirds of Polish and Italian consumers who only used Poczta Polska or Poste Italiane. By comparison, 90% of businesses in Poland used a competitor to send parcels or letters. This share dropped to 78% of businesses in Sweden and 76% of businesses in Italy. The use of competitors for letter sending was twice as prevalent among large businesses as among SMEs; this was consistent across all three countries.

Data on the PTS (Swedish regulator) website shows Sweden Post having a gradually declining share of the letter mail market (see Table 4.12).¹⁶ In 2009 their share was just under 89% while Citymail's share was increasing.

¹⁶ <http://www.pts.se/upload/Ovrigt/Post/antal-brevforsandelser-i-miljoner-1993-.pdf>.

Table 4.12: Sweden: number of mail items in millions*

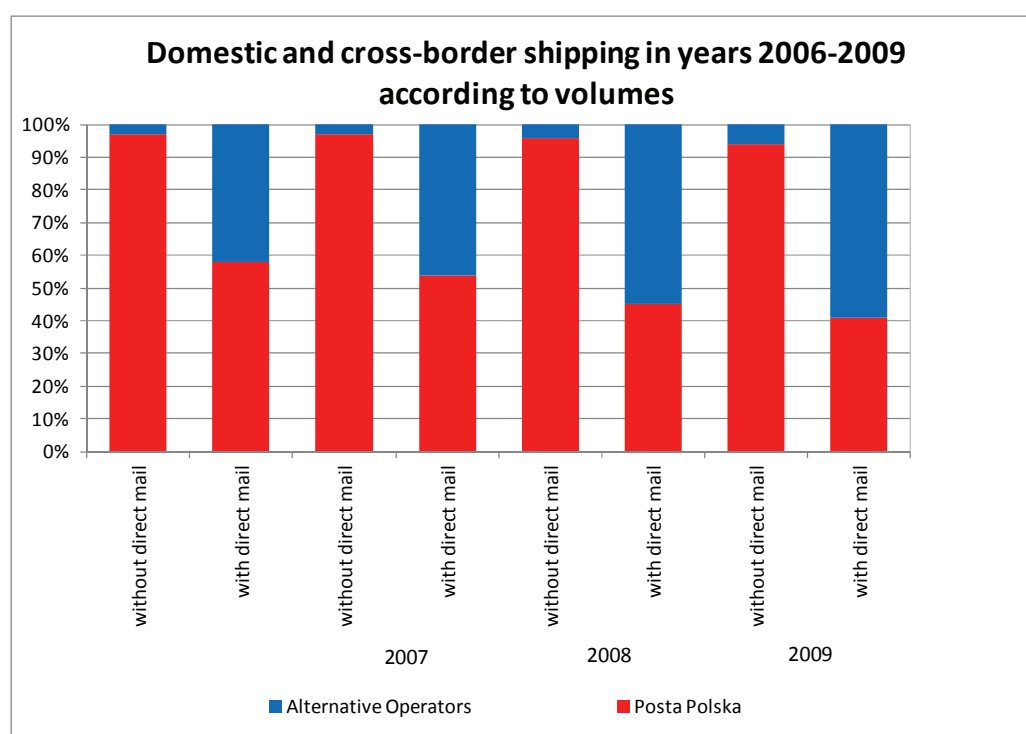
Year	Posten AB	% of total	Bring Citymail	% of total	Other operators	% of total	Total
1993	3,283	100.00%					3,283
1994	3,339	100.00%					3,339
1995	3,369	100.00%					3,369
1996	3,361	98.22%	52	1.52%	9	0.26%	3,422
1997	3,311	97.76%	56	1.65%	20	0.59%	3,387
1998	3,275	95.01%	152	4.41%	20	0.58%	3,447
1999	3,247	94.80%	164	4.79%	14	0.41%	3,425
2000	3,266	95.25%	149	4.35%	14	0.41%	3,429
2001	3,148	94.34%	175	5.24%	14	0.42%	3,337
2002	3,100	93.74%	193	5.84%	14	0.42%	3,307
2003	3,037	92.87%	223	6.82%	10	0.31%	3,270
2004	2,996	91.96%	251	7.70%	11	0.34%	3,258
2005	2,950	91.76%	254	7.90%	11	0.34%	3,215
2006	2,926	91.12%	276	8.60%	9	0.28%	3,211
2007	2,858	90.62%	287	9.10%	9	0.29%	3,154
2008	2,750	89.03%	330	10.68%	9	0.29%	3,089
2009	2,584	88.64%	324	11.11%	7	0.24%	2,915

* Refers to addressed items, excluding packages.

Similarly, information on the website of UKE, the Polish regulator, shows Poczta Polska to have a share of over 90% of the addressed letter market and showing a declining share between 2006 and 2009 (see Figure 4.3).¹⁷

¹⁷

http://www.uk.gov.pl/uke/index.jsp?place=Lead24&news_cat_id=247&news_id=5380&layout=8&page=text.



Reproduced from information provided on the UKE website:
http://www.uke.gov.pl/uke/index.jsp?place=Lead24&news_cat_id=247&news_id=5380&layout=8&page=text

Figure 4.3: Share of postal market in Poland by volume 2006–2009

4.1.5 Improvements to postal services

Respondents were asked to specify what improvements they would most like to see in the postal services available to them.

The most frequently mentioned improvements from consumers were faster delivery (23%), cheaper prices (13%), earlier delivery to home or premises (11%), less lost mail (11%) and reduced queuing times at post offices (11%). One in seven consumers (14%) specifically mentioned they were happy with the services provided to them and 12% did not mention any improvements. Vulnerable consumers were less likely than the non-vulnerable to suggest improvements. Under 35 year olds were particularly likely to want to see faster delivery and it was the 35–54 year olds who were most likely to feel that prices should be cheaper.

Improvements mentioned by businesses were consistent with those mentioned by consumers. One in three business respondents (34%) said they would like to see faster delivery (36% of SMEs versus 32% of large businesses). Other improvements mentioned included cheaper prices (21%, but 22% of SMEs and 19% of large businesses), earlier delivery to premises (13%) and less lost mail (13%). One in six business respondents (17%) was happy with the services currently provided, but larger businesses were more likely to be happy with the service and perhaps enjoy a higher quality of service than SMEs. One in five (20%) of large businesses said they were happy and 11% could not suggest any improvements, compared with 16% and 6% respectively for SMEs.

There were notable differences in improvements suggested by country. Almost two in five consumers in Italy (37%) would like to see faster delivery, compared with 28% of those in Poland and just 4% of those in Sweden. The figures for Sweden and Italy are consistent with the incumbent product structure: Posten AB (Sweden) offers a J+1 product, whereas Poste Italiane (Italy) does not. The results for Poland are more unexpected, as here a J+1 product is offered as well. However, published quality of service data shows that in Poland in 2010 just 53.4% of priority mail was delivered in J+1 whereas the corresponding figure in Sweden in 2010 was 93.7% by J+1.¹⁸¹⁹ When asked about time of delivery, 21% of those in Italy suggested they would like earlier delivery to their home or premises, compared with just 6% of those in Sweden and 4% of those in Poland.

For consumers in Sweden, the most frequently mentioned improvements were:

- a closer post office (10%)
- cheaper prices (8%)
- earlier delivery to home or premises (6%)
- more post offices available – against closures (6%)
- more and larger mailboxes, more conveniently located (6%).

The interest in closer post offices by Swedes is likely because of the more rural nature of the population (21% living in predominantly urban areas in Sweden compared with 28% in Poland and 35% in Italy – see Table 3.15). In Sweden, cheaper prices were much less likely to be mentioned than in the other two countries – again this coincides with data on perceptions of the affordability of postal services: in Sweden 74% of persons indicated that they found postal services to be affordable (Table 3.17). Moreover, looking at the real cost of postage in Sweden (see purchase price parity comparison in Table 4.13) postage costs in Sweden are cheaper than in Poland.

Note that 37% of those in Sweden specifically mentioned they were happy with the current service and 7% had no improvements to suggest.

For consumers in Poland, the most frequently mentioned improvements were:

- faster delivery (28%)
- reduced queuing times at the post office (18%)
- cheaper prices (15%)
- less lost mail (8%)
- easier to buy stamps or other postage (8%)
- closer post office (8%).

A desire for faster delivery is understandable in the context of Poland's quality of service mentioned above i.e. only 53.4% of priority mail was delivered in Poland in J+1 in 2010 against a target of 82%. It would also appear that this proportion is falling over time (68% in 2006).

One in five (21%) of those in Poland had no improvements to suggest.

¹⁸ <http://www.pts.se/upload/Rapporter/Post/Service%20and%20competition%202011.pdf>.

¹⁹ <http://www.gazzettaufficiale.biz/allegati/201/2011050611A056450001006/>.

For consumers in Italy, the most frequently mentioned improvements were:

- Faster delivery (37%)
- Earlier delivery to my home/premises (21%)
- Reduced queuing times at the post office (16%)
- Cheaper prices (16%)
- Improved track and trace service (15%)
- Improve customer service – more responsible staff, better training etc (14%).

Only 7% of those in Italy had no improvements to suggest and 3% were happy with the services currently provided.

As with consumers, suggestions for improvement made by business respondents differed by country. More than three in five businesses in Italy (62%) would like to see faster delivery, compared with 37% of those in Poland and just 4% of those in Sweden. Businesses in Italy were also more likely to suggest cheaper prices (33%, compared with 22% of businesses in Poland and 8% in Italy). Similarly, 25% of those in Italy suggested earlier delivery to their home or premises, compared with just 10% of those in Sweden and 5% of those in Poland.

The most frequently mentioned improvements wanted by businesses in Sweden were:

- earlier delivery to premises (10%)
- cheaper prices (8%)
- introduce or improve collection service (from customer) – times, payment options (6%)
- increased efficiency – punctual, accurate, reliable deliveries (5%).

Nearly half (48%) of businesses in Sweden specifically mentioned they were happy with the current service and 1% had no improvements to suggest.

The most frequently mentioned improvements wanted by businesses in Poland were:

- faster delivery (37%)
- cheaper prices (22%)
- reduced queuing times at the post office (13%)
- less lost mail (8%)
- more choice of service (7%).

The finding regarding faster delivery ties in with consumers' view and again would appear to be related to the actual achieved quality of delivery in Poland compared with the target. Just over one in ten (13%) of businesses in Poland had no improvements to suggest and 2% specifically mentioned they were happy with the current service provided.

The most frequently mentioned improvements wanted by businesses in Italy were:

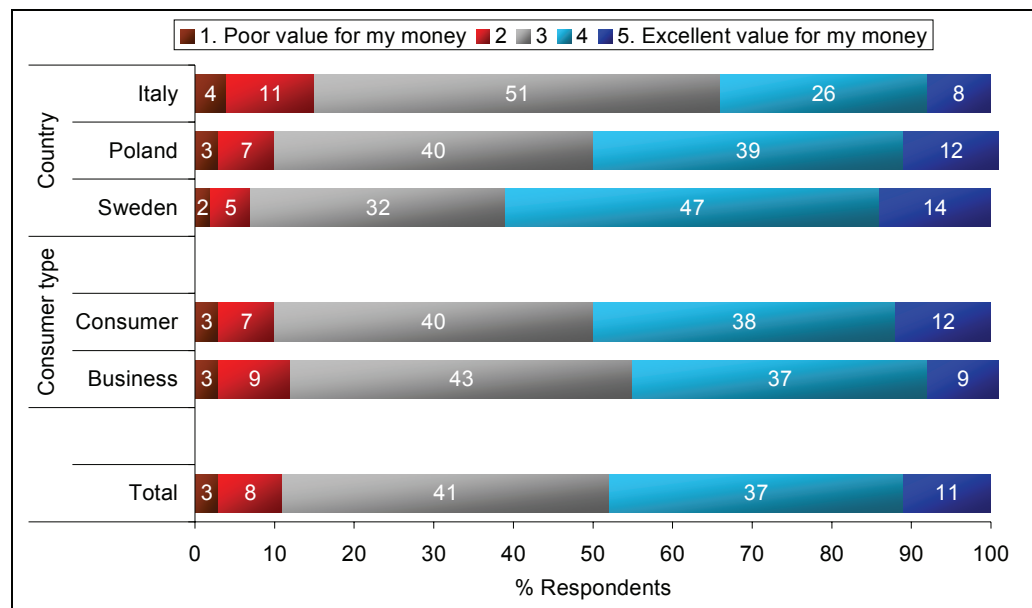
- faster delivery (62%)
- cheaper prices (33%)
- less lost mail (27%)
- earlier delivery to my premises (25%)
- improved track and trace service (24%)
- more choice of service (16%)
- less damaged mail (16%).

Again, just over one in ten (11%) of businesses in Italy had no improvements to suggest and 3% were happy with the services currently provided. The high level of desired improvements suggests that businesses in Italy have a range of concerns regarding the quality of the postal service.

4.1.6 Value for money

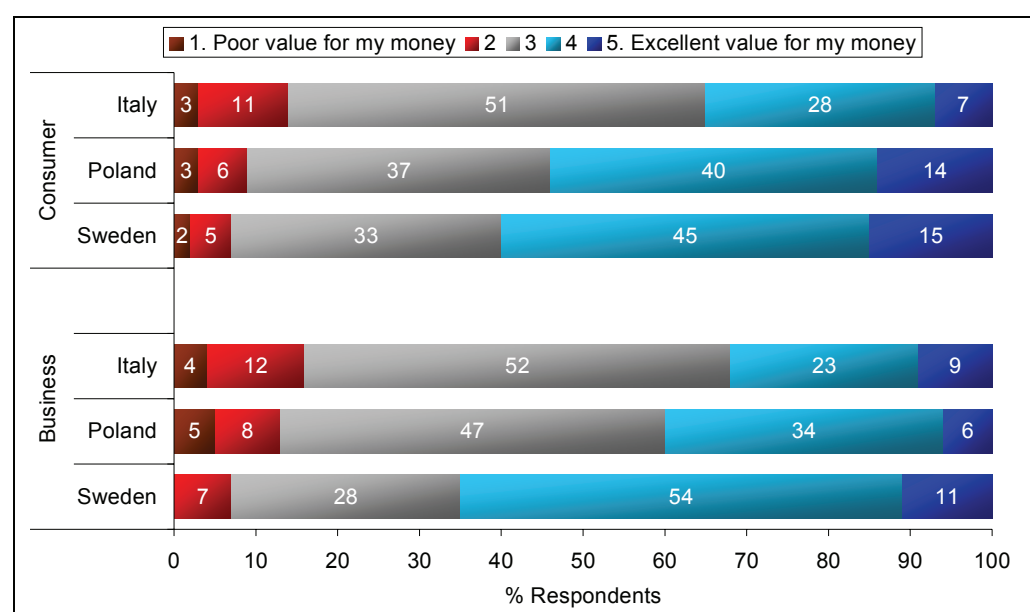
Half of all consumers gave a rating of at least four out of five for the value for money they receive for the postal services they use (see Figure 4.4). A large share gave a neutral rating of three out of five, while just one in ten gave a rating of one or two out of five. Business respondents were only slightly less positive, with 46% giving a rating of four or five out of five and 12% giving a rating of less than three. The mean score for businesses was 3.39 compared to 3.49 for consumers.

Perceptions of value for money differed between country for consumers and business respondents (see Figure 4.5). Three in five consumers in Sweden gave a rating of four or five out of five for the value for money they receive for the postal services they use, compared with 54% of those in Poland and 35% of those in Italy. Similarly, businesses in Sweden were the most positive about the value for money they received; two-thirds (65%) gave a rating of at least four out of five. This compares with 40% of consumers in Poland and 32% of consumers in Italy. The biggest discrepancy between businesses and consumers was in Poland where 40% of businesses gave a value for money score of four or five compared with 54% of consumers. The overall mean scores per country were 3.67 for Sweden, 3.48 for Poland and 3.24 for Italy.



Base: all respondents (1,438 total; 383 business; 1,055 consumer; 479 Sweden; 482 Poland; 477 Italy)

Figure 4.4: Perceived value for money of postal services by country and consumer type (across countries)



Base: all respondents (125 Sweden business; 131 Poland business; 127 Italy business; 354 Sweden consumer; 351 Poland consumer; 350 Italy consumer)

Figure 4.5: Perceived value for money of postal services, by country and consumer type

If we compare the priority letter price in each country in Euros and adjust it to take account of purchasing power parity we see that postal prices in Poland are the most expensive while the actual price in Sweden and Italy is similar albeit for a service which is up to J+3 in Italy (see Table 4.13). These figures, along with the comparative quality of service figures for Sweden and Poland, help to explain why value for money is rated so much more highly in Sweden than in Poland. The lower rating for value for money in Italy would appear to be due to the fact that the service provided is J+3.

Table 4.13: Letter prices in Sweden, Poland and Italy adjusted for purchase price parity

	Letters (20 g)			
	J+1 service price	J+1 service adjusted price	J+3 service price	J+3 service adjusted price
Sweden	€0.68	€0.60	€0.62	€0.55
Poland	€0.49	€0.90	€0.39	€0.72
Italy*	€0.60	€0.56	€0.60	€0.56

* Italy does not differentiate between J+1 and J+3 services.

4.1.7 Mail and postal services

Respondents were read a list of statements and asked to specify the extent to which they agreed with each (see Table 4.14 and Table 4.15).

The highest level of agreement among consumers was with the statement “I prefer to send email rather than to post letters”, which received a mean rating of 3.97 out of 5. In particular, consumers in Italy were the most likely to agree with this statement on average, with a mean rating of 4.33 compared with 3.89 for Sweden and 3.68 for Poland. This higher preference for electronic communication in Italy ties in with the more critical view of the Italian postal service expressed by respondents, particularly with regard to speed of delivery and value for money. Respondents in Italy were also more likely than the other

countries to agree that they send less mail today than they did five years ago. By comparison, consumers in Sweden and Poland were more likely to agree with the statement “I prefer to use online services rather than the post, for example to pay bills” (mean ratings of 4.32 and 3.71 respectively). Agreement was high with all statements to do with decreasing usage of the post and increasing usage of electronic alternatives suggesting that consumers themselves foresee a decline in the use of postal services. Agreement was lowest with the statement “I will probably post more packets/parcels and fewer letters in the future”, which had a mean rating of 2.51. This was consistent across all three countries.

Table 4.14: Agreement with statements about mail and postal services, mean scores, consumers

	Total	Country		
		Sweden	Poland	Italy
I prefer to send email rather than to post letters	3.97	3.89	3.68	4.33
I prefer to use on-line services rather than the post, for example to pay bills	3.84	4.32	3.71	3.46
I rarely need to go to the post office	3.56	3.96	3.44	3.28
I purchase more items online than I did five years ago	3.49	3.74	3.54	3.19
I send less mail today than I did five years ago	3.45	3.57	3.11	3.65
I will probably receive less mail over the next two years than I do today	3.10	3.07	2.93	3.28
I will probably send less mail over the next two years than I do today	3.06	2.84	2.90	3.45
I receive less mail today than I did five years ago	3.04	3.09	2.91	3.12
I will probably post more packets/parcels and fewer letters in the future	2.51	2.43	2.45	2.64

The highest level of agreement among businesses was with the statement “My business prefers to use online services rather than the post, for example to pay bills”, which received a mean rating of 3.82 out of 5 (3.98 for businesses in Sweden and 3.94 for those in Poland). Agreement among businesses was also high with the statement “My business prefers to send email rather than to post letters”. The mean rating for this statement was 3.68; however, agreement was notably higher among businesses in Italy (4.09) than businesses in Sweden (3.59) and Poland (3.37). While overall the mean scores were lower for businesses than for consumers, there was again a majority view that electronic substitution is now preferred to physical post. Most feel that mail receipt and sending has dropped over the past few years and most (although with slightly less confidence) believe that usage will decline in the coming two years. As with consumers, agreement was lowest with the statement “My business will probably post more packets/parcels and fewer letters in the future”, which had a mean rating of 2.58. Again this was consistent across all three countries.

Table 4.15: Agreement with statements about mail and postal services, mean scores, businesses

	Total	Country		
		Sweden	Poland	Italy
My business prefers to use online services rather than the post, for example to pay bills	3.82	3.98	3.94	3.55
My business prefers to send email rather than to post letters	3.68	3.59	3.37	4.09
I rarely need to go to the post office on behalf of my business	3.41	3.71	3.37	3.16
My business sends less mail today than it did five years ago	3.25	3.18	2.89	3.69
My business receives less mail today than it did five years ago	3.20	3.22	2.84	3.56
My business will probably receive less mail over the next two years than it does today	3.16	3.14	2.72	3.62
My business will probably send less mail over the next two years than it does today	3.14	2.90	2.69	3.85
My business purchases more items online than it did five years ago	3.07	3.43	3.15	2.63
My business will probably post more packets/parcels and fewer letters in the future	2.58	2.80	2.35	2.61

4.1.8 Post office usage

One in three consumers (34%) reported that they visit a post office at least once a fortnight on average with little difference in frequency between vulnerable and non-vulnerable respondents.

Business respondents were more frequent visitors to a post office, with almost half (47%) visiting at least once per week. One in four large businesses and one in eight SMEs said that they never visited a post office or did so less than once a year.

Overall, those in Sweden visited a post office less frequently than those in Poland or Italy. Nearly one in five (18%) consumers visited at least once a fortnight, compared with 39% of consumers in Poland and 45% of consumers in Italy. Almost two in five (37%) people running businesses in Sweden visited a post office once a fortnight or more often, compared with 58% of those businesses in Poland and almost three-quarters (73%) of businesses in Italy. Table 4.16 shows a breakdown of these results.

Table 4.16: Frequency of visit to a post office

	Total	Consumer type		Country		
		Business	Consumer	Sweden	Poland	Italy
Total	1,438 100%	383 100%	1,055 100%	479 100%	482 100%	477 100%
Once a week or more	339 24%	179 47%	160 15%	56 12%	136 28%	147 31%
Once a fortnight	235 16%	35 9%	200 19%	58 12%	76 16%	101 21%
Once a month	365 25%	54 14%	311 29%	100 21%	146 30%	119 25%
Several times a year	292 20%	33 9%	259 25%	144 30%	63 13%	85 18%
Once a year	83 6%	16 4%	67 6%	36 8%	37 8%	10 2%
Less often than once a year	57 4%	21 5%	36 3%	42 9%	11 2%	4 1%
Never	67 5%	45 12%	22 2%	43 9%	13 3%	11 2%

Priority versus economy service usage

Approximately two in five consumers (37%) use only or predominantly a first class or priority service. A slightly lower share use priority and economy (second class) equally (32%) and a similar share use only or predominantly an economy service (32%).

Findings were similar for business respondents; 38% use only or predominantly a priority service, 35% use priority and economy equally and 27% use only or predominantly an economy service.

However, the use of priority and economy services varies substantially by country. Almost half (45%) of those in Sweden use only a priority service, including 42% of businesses and 46% of consumers, but the differential between the costs of J+1 and J+3 are not large. By comparison, only 6% of respondents from Poland and 10% of respondents from Italy use a priority service exclusively. Table 4.17 shows a breakdown of these results.

Table 4.17: Use of priority and economy services

	Total	Consumer type		Country		
		Business	Consumer	Sweden	Poland	Italy
Total	1,438 100%	383 100%	1,055 100%	479 100%	482 100%	477 100%
I only use a priority service	289 20%	70 18%	219 21%	214 45%	28 6%	47 10%
I predominantly use a priority service	245 17%	78 20%	167 16%	78 16%	107 22%	60 13%
I use priority and economy equally	474 33%	134 35%	340 32%	62 13%	226 47%	186 39%
I predominantly use an economy service	296 21%	79 21%	217 21%	80 17%	93 19%	123 26%
I only use an economy service	134 9%	22 6%	112 11%	45 9%	28 6%	61 13%

4.1.9 Rural delivery

When asked if mail sent to rural areas should be delivered as quickly as mail sent to urban areas, the majority of respondents, 64% of consumers and 72% of businesses, stated mail should be delivered as quickly (see Table 4.18).

Respondents in Poland were more likely to say mail to rural areas should be delivered as quickly (81%; 85% of businesses and 80% of consumers), notably higher than respondents in Italy (62%) and Sweden (56%).

The majority of postal customers are accustomed to having a basic postal service, which aims for one standard of delivery across most of the country, and there is evidently resistance to moving away from that standard although it would be less of an issue in Sweden and Italy.

Table 4.18: Delivery of mail in rural areas

	Total	Consumer type		Country		
		Business	Consumer	Sweden	Poland	Italy
Total	1,438 100%	383 100%	1,055 100%	479 100%	482 100%	477 100%
It should be delivered as quickly	957 67%	277 72%	680 64%	267 56%	392 81%	298 62%
It could be delivered more slowly	439 31%	96 25%	343 33%	197 41%	72 15%	170 36%
No opinion	42 3%	10 3%	32 3%	15 3%	18 4%	9 2%

4.2 Findings from analysis of the choice experiments

This section sets out the findings from the SPDCEs. First we discuss general issues, including respondents' understanding of the choice exercises. We then present the findings from the choice exercises for business and resident respondents.

4.2.1 Respondent's understanding of the choice exercises

Respondents participated in three SPDCEs, all of which were reasonably complex. We have therefore examined respondents' self-reported understanding of the SPDCE exercises before undertaking any modelling analysis (these are reported in Table 4.19). In total, less than 15% of respondents indicated that they could not undertake the choice exercises, which is an improvement from the pilot surveys where around 20% of respondents indicated that they couldn't undertake the exercises. In our experience, this level of reported inability to undertake the choice exercises is still quite high, but not unreasonably so. Interestingly, on average, consumers had higher levels of understanding than businesses, particularly large businesses. We also see differences in reported levels of understanding across countries and age groups (with older respondents being less able to understand the exercises).

Table 4.19: Respondent's self-reported understanding of the choice exercises*

Segment	Number who could undertake the choice exercises	Number who could not undertake the choice exercises	Total
All Surveys	1241 (86.3%)	197 (13.7%)	1438 (100.0%)
Sweden	376 (78.5%)	103 (21.5%)	479 (100.0%)
Poland	411 (85.3%)	71 (14.7%)	482 (100.0%)
Italy	454 (95.2%)	23 (4.8%)	477 (100.0%)
Business	318 (83.0%)	65 (17.0%)	383 (100.0%)
Consumers	923 (87.5%)	132 (12.5%)	1055 (100.0%)
Male	359 (88.0%)	49 (12.0%)	408 (100.0%)
Female	564 (87.2%)	83 (12.8%)	647 (100.0%)
Aged 18–54	607 (90.7%)	62 (9.3%)	669 (100.0%)
Aged 55–65	166 (85.6%)	28 (14.4%)	194 (100.0%)
Aged 65+	146 (77.7%)	42 (22.3%)	188 (100.0%)
Refused	4 (100.0%)	0 (0.0%)	4 (100.0%)
Disability that affects ability to travel	74 (91.4%)	7 (8.6%)	81 (100.0%)
Not disabled	849 (87.2%)	125 (12.8%)	974 (100.0%)
SME	198 (85.3%)	34 (14.7%)	232 (100.0%)
Large businesses	120 (79.5%)	31 (20.5%)	151 (100.0%)

* Answer to: "Were you able to make the comparisons in the choices we presented to you?"

At the completion of the interview, interviewers were also asked whether they felt that respondents understood the survey questions, how much effort they put into the interview and the degree of respondent fatigue. Interviewers felt that:

- around 4% of respondents did not understand what they were being asked to do in the survey questions
- approximately 95% of respondents gave the questions reasonable, careful or very careful consideration

- less than 5% of respondents did not maintain concentration throughout the survey.

In the model analysis, we excluded respondents who the interviewer judged did not understand the SP questions or did not give the questions much consideration (less than 5% of the data for business and 5.1% for Italian residents, 6.6% for Polish residents and 0.6% for Swedish residents).

4.2.2 **Trading in the choice exercises: the influence of cost**

Given the importance of cost sensitivity in measuring WTP, we have looked at respondents' sensitivity to cost in the choice exercises, specifically the extent to which the number of choices of an alternative declines as cost increases. The intention is to investigate whether respondents appear to trade on price, and whether the range covered in the experiments is appropriate to stimulate trading for most respondents while remaining within a credible price range. The following graphs show the influence of cost on respondents' choices (for business and consumer segments) by experiment and by country.

In general we see a tailing off in the proportion of choices as prices increase (as expected), although the pattern varies by country. However, it appears that there are still a reasonable proportion of choices being made at the higher cost levels, particularly for Experiment 3. This suggests that respondents are willing to choose the options at the highest prices in order to obtain good service levels and that higher price levels could be tested. It is noted that we saw this same pattern after analysis of the pilot surveys and increased the price range tested in the experiments for the main surveys (from +100% to +150% of current prices).

This means that the resulting cost sensitivity of the model may be too low with a risk that the resulting WTP valuations are then too high.

On the basis of these findings, we recommend that larger cost differences are tested in future experiments of this kind.

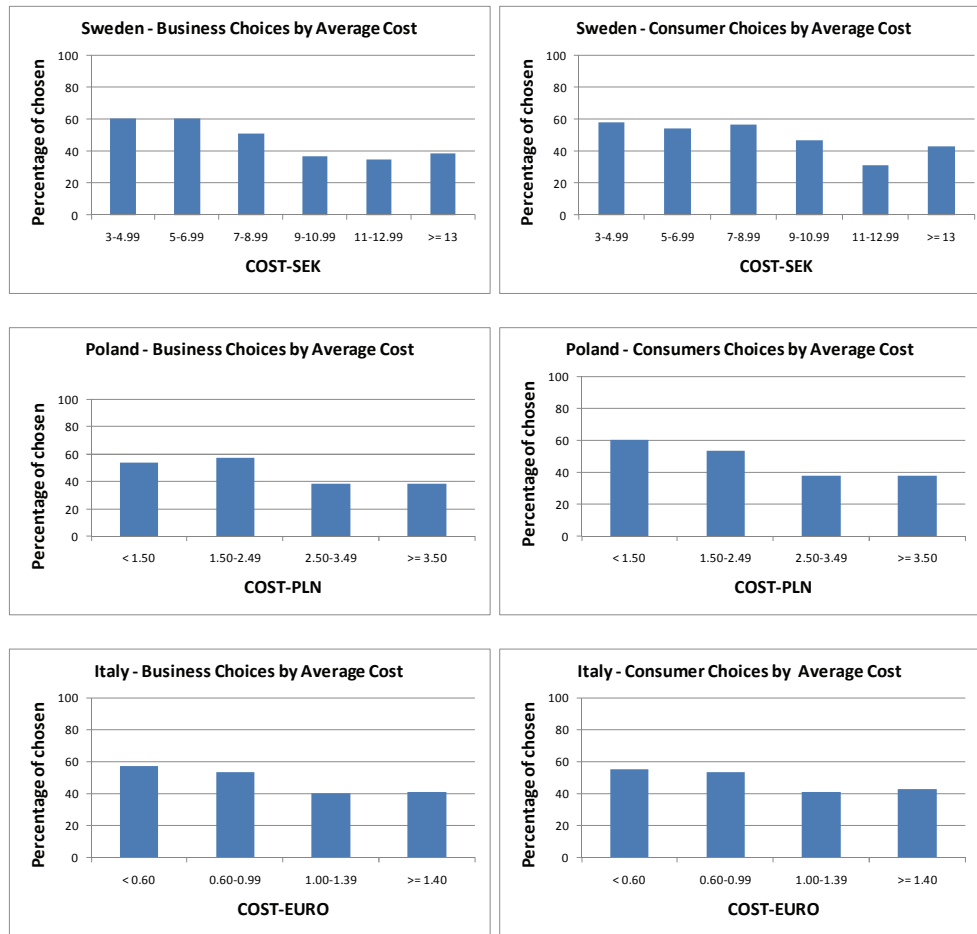


Figure 4.6: SP Experiment 1: percentage of choices by cost

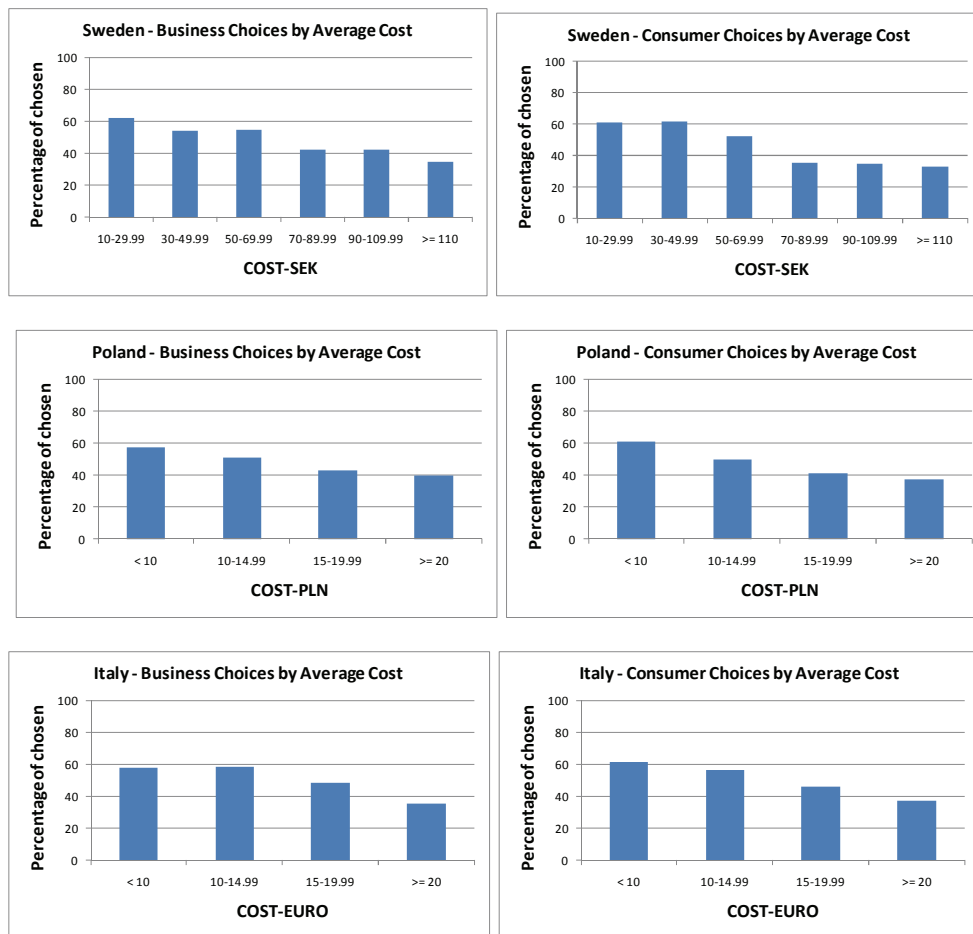


Figure 4.7: SP Experiment 2: percentage of choices by cost

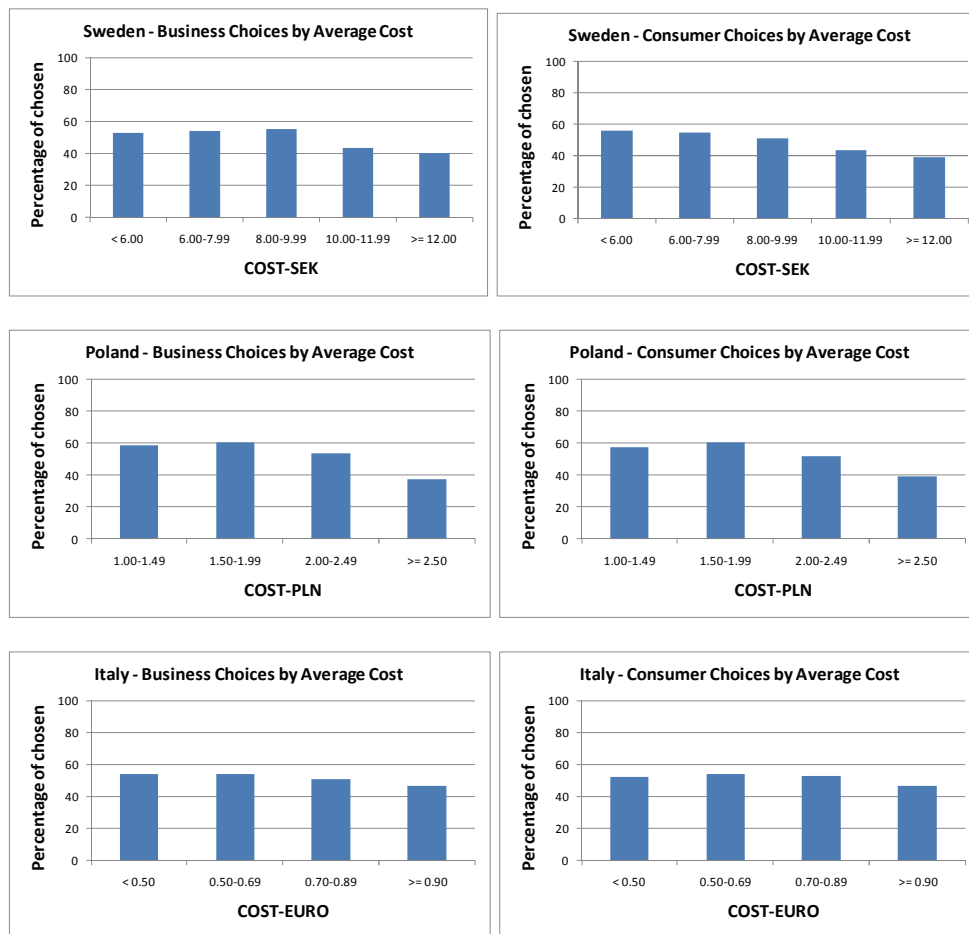


Figure 4.8: SP Experiment 3: percentage of choices by cost

4.2.3 Developing discrete choice models from the SP choice data

Discrete choice models have been developed using the data from the choice experiments (see Box 2.2 for the theoretical background on discrete choice modelling). The models developed from the SPDCE data are logit models, with two choice alternatives, described by attributes and levels as illustrated in Figure 3.4–Figure 3.6.

The estimation procedure assumes that respondents choose the alternatives with the highest utility. The outputs from the estimation procedure are attribute coefficients that best represent the choices made by the respondents. Both the values of the coefficients (in utility terms) and the significance of the coefficients are calculated and reported.

The ratio of coefficients quantifies the marginal rate of substitution between the attributes – the trade-off rate between one attribute and another. The ratios of the service coefficients and the cost coefficient provide an estimation of consumers' WTP for service attributes, measured as the WTP additional money for increased stamp or parcel prices. WTP values and their significance are calculated and reported.

The following process was used in the development of the models:

- Separate models were developed for businesses and residents, for each choice experiment.
- Likelihood ratio tests were undertaken for businesses to examine whether differences in preferences were observed between respondents in the different member states and between SMEs and large businesses; we found that merging the data across countries did not reduce the fit of the model across the choices significantly, so the pooling of data across countries was justified, but retaining separate models for SMEs and large businesses significantly improved the fit of the model and therefore separate models have been developed for SMEs and large businesses.
- Likelihood ratio tests were undertaken for residents to examine whether significant differences in preferences were observed between respondents in the different member states and between vulnerable and non-vulnerable residents; we found that retaining separate models across countries significantly improved the fit of the model, but merging vulnerable and non-vulnerable respondents did not reduce the model fit significantly; thus we pooled the data for vulnerable and non-vulnerable residents, retaining significant differences where warranted, but retained separate models for the different member states.

In pooling the data across countries for businesses, we converted the costs presented in the exercise into a common standard using purchase power standards (using the latest adjustments published for 2010).²⁰ The models are set up as multinomial logit models, pooling data across the countries but allowing for different error variance across countries, where the error variance for responses from Poland and Italy are measured relative to Sweden (Bradley and Daly, 1991).

For residents, we pooled the vulnerable and non-vulnerable responses for each country, assuming a multinomial logit model structure but allowing for different error variance between these groups (the error variance for vulnerable responses is measured relative to that for non-vulnerable responses). We have also translated the costs into one comparable unit using purchase power standards, so that we can compare findings across countries.

For resident and business models, in cases where two cost levels were presented for two-class service options we used the average cost to represent the cost of the option.

For businesses and residents we also present the final findings in the local currency of the member state.

For business and resident models we have excluded respondents who the interviewer judged did not understand the SP questions or who did not give the questions much consideration (less than 5% of the data for business and 5.1% for Italian residents, 6.6% for Polish residents and 0.6% for Swedish residents).

A key part of the model analysis was to investigate how preferences of the sample regarding the importance of different postal attributes vary as a result of socio-economic characteristics, business characteristics, mail usage and internet provision of respondents. The characteristics that were examined in this investigation included:

²⁰ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_ppp_ind&lang=en.

for residents:

- gender
- age
- presence of longstanding health problems
- annual household income
- vulnerable or not
- access to internet or broadband access at home or elsewhere
- use of internet to buy products.

for businesses:

- country
- number of employees
- annual turnover of company
- sales by internet and deliver by post
- description of the organisation's use of the internet
- industrial sector.

For both residents and businesses:

- volume of letters sent
- volume of letters received
- volume of parcels sent
- volume of parcels received
- letters or parcels sent using other services than the country's main provider
- type of mail sent
- frequency visiting the post office
- access to internet or broadband access at home or elsewhere
- location: city centre, rural or urban area.

Tests were undertaken comparing the predicted probabilities of choosing alternatives against the observed frequencies of choices, across each of these different respondent characteristics. Where these tests indicated significant differences in the value of attributes, the model specification was developed to take explicit account of this difference. In general, we have found little significant variation in preferences for the postal service attributes tested in this study across these dimensions. These findings are discussed in detail in the following sections.

We have also examined variations in cost sensitivity by income and vulnerability status for residents. Again, we found little significant variation in cost sensitivity across these dimensions and the results are discussed in the following sections.

During the development of the models the repeated nature of the data was not taken into account; it was assumed that each observation was independent, even though each respondent provided multiple responses. This assumption is incorrect as each respondent participated in three SPDCEs and provided multiple choice observations in each. Naïve models that do not take account of the repeated choice nature in SP datasets underestimate the standard errors on the coefficient estimates finding higher levels of statistical significance than would be judged once the repeated measured property of the data is taken

into account. Therefore, as a final step in the estimation procedure, a bootstrap re-sampling procedure was applied to the models to correct for model misspecification and take into account the repeated nature of the SP data. This procedure ensures that the t-ratios produced by the models are a realistic statement of the true errors of the model parameters.

The best final bootstrapped models are presented in Appendix B.

4.2.4 Business preferences for postal services

The resulting valuations for the service attributes and levels tested in the choice experiments, in purchase power standard units, are presented in Figure 4.9, Figure 4.10, and Figure 4.11. Separate values are presented for SMEs and big businesses (BBs). Values to the left of the zero on the x-axis of the graph reflect the compensation required (per stamp) for the attribute service level relative to the base level; values to the right reflect WTP (per stamp). The base level for each service attribute is also shown first (and labelled as base). It has a value of zero. The value of all other attributes is measured relative to this base value. Therefore, a value of zero for other attributes indicates that the service level is valued the same as the base service level.

It is emphasised that these valuations for business respondents have been obtained by pooling the data across member states and that we have not identified any significant differences in the value for specific service attributes for any member state. We have, however, found significant differences in valuations of services between SMEs and large businesses, and therefore the values for these are presented separately. The 95% confidence levels for the valuations are also presented.

In general we observe that the resulting valuations for businesses have substantial standard errors, once we have taken account that each individual provided multiple responses, even though we have pooled the business responses across countries. The reason for these relatively large standard errors may be manifold, including:

- The business sample was smaller than that for residents (there were 2.75 times more observations from residents than from businesses).
- Business preferences for SMEs and large businesses may be more heterogeneous in nature than those of consumers.
- The cost sensitivity is not well estimated (this may be because stamp costs are a relatively unimportant cost for businesses and therefore larger cost differences could be tested, particularly for big businesses – as discussed below).
- The values that businesses place on postal service attributes are relatively small – thus requiring more data to estimate the values significantly, or a combination of all of these aspects.

We note that the standard errors for the valuations by SMEs are generally smaller than those for the large businesses, which may be a result of the larger SME sample (232 SMEs compared with 151 big businesses) or that the SMEs are a more homogenous segment than large businesses. We also note that cost sensitivity is much more reliably estimated for SMEs, suggesting that the cost levels tested were more appropriate for SMEs, and will lead to better estimation of WTP. The cost sensitivity for large businesses is less well estimated,

and the examination of cost trading suggests that larger cost differences could have been presented to big businesses. The resulting valuations may therefore be underestimated for large businesses.

Also, the size of the standard errors may explain why we haven't been able to identify significant differences in valuations across countries or within each business segment.

In general, we observe that big businesses value letter services more than SMEs or residents. They also are more likely to be senders of large volumes of mail – over 60% of businesses in our sample send over 500 pieces of mail per month compared with 14% of SMEs. Thus they appear to have a vested interest in good letter services and are willing to pay for those services. Differences in parcel sending between big businesses and SMEs are much less marked, with 15% of SMEs and 17% of big businesses sending over 100 parcels per month, and here we see much more similar valuations of specific service attributes.

Regarding the valuations for specific attributes we observe the following (see Figure 4.9–Figure 4.11).

For service attributes related to letters (from the outputs from the first experiment, see Figure 4.9 for the detailed values):

- Big businesses appear to be more time sensitive, preferring a next day delivery option, or the two-class alternative, with a next day option. Specifically, they require compensation of €0.55 and €0.90 per item of mail for a two-day or three-day delivery option, based on the results converted into Euros (of course, stamps may not cost this much, but the results could also be interpreted to mean that respondents from large businesses would be willing to pay €0.55 for a next day service relative to a two-day service and €0.90 for a next day service relative to a three-day service). They also prefer a single next day service over a non-uniform delivery option, where they would require around €0.35 compensation on a stamp price.
- SMEs appear to place less value on speed of delivery, with no observable difference in value between next day or two-day service delivery options, but they do require compensation for a three-day service (around €0.20 compared with a next-day service). They also prefer a single next day service over a non-uniform delivery option, where they would require around €0.16 compensation on a stamp price (half of the value required by big businesses).
- Both big businesses and SMEs prefer to have their post delivered to their work location, with increasing dislike for delivery options 100m or 1km from their work – again, SMEs have lower levels of dislike for these options than big businesses.
- Both big businesses and SMEs prefer to have their post delivered by 9:00 with increasingly lower levels of preferences for deliveries at 13:00 or 17:00 for SMEs and big businesses disliking delivery at 17:00, although the relative compensation levels for these service reductions is relatively low.
- Big businesses are also willing to pay for increased reliability of delivery, in the order of €0.65 to €0.75 for 90% and 95% of letters to be delivered on time, relative to a base of 80% – of course, a base level of 80% may be considered to be far too low for businesses; SMEs place a much lower value on reliability of delivery.
- Both big businesses and SMEs place a high value on reducing loss of letters, with big businesses being willing to pay substantial amounts – between €1 and €2.5 per item –

to reduce letter loss. Again, these values reflect values for extreme levels of loss. We also higher levels of compensation required for higher levels of loss for items which are not newspapers and magazines. SMEs also view letter loss importantly and are willing to pay to avoid lost letter items.

For service attributes related to parcels (from the outputs of the second experiment, see Figure 4.10 for the detailed values):

- In general, we see much higher absolute valuations than for letters; we also see more consistency in the values for SMEs and big businesses, as discussed above.
- We see a stronger preference for next day delivery options (and two-class services with a next day delivery option), compared with two or three-day or non-uniform delivery options, by SMEs and big businesses, compared to letter services.
- We see preferences for delivery of advertising material by 17:00, but do not see a need for compensation for delivery by 13:00 compared with 9:00.
- We don't observe preferences for higher levels of delivery reliability, but we see substantial, very high WTP to avoid parcel loss by SMEs and big businesses, particularly for those who rarely visit post offices (with compensation of around nine PPS units required for a 5% loss of parcels and between 13 and 21 PPS units for a 10% loss).

Regarding the postal service more generally we see surprisingly consistent valuations for SMEs and big businesses (from outputs of the third experiment, see Figure 4.11 for details), specifically:

- There are preferences for post office services to be located near the business location – with compensation of around 1.40 PPS units required for services 10km from the business location – and for longer hours of opening – they are willing to pay around 1.70 PPS units for post offices to be open eight hours per day compared with two hours per day. Interestingly respondents from SMEs with no internet access at home place a higher value on longer opening hours than those with internet access, which may mean that opening hours may be less important in future with higher levels of internet access.
- Both SMEs and big businesses place a smaller value on having a full range of postal services available and additional financial services (respondents from big businesses who visit post offices less frequently place a value on additional financial services).
- Both SMEs and big businesses value fuller coverage of the network, with SMEs requiring 0.85 PPS units compensation compared with the 0.66 PPS units compensation required by big businesses, if only 95% of the postal network was served.
- Both SMEs and big businesses place a small but positive value on uniform pricing: around 0.25PPS units per letter.

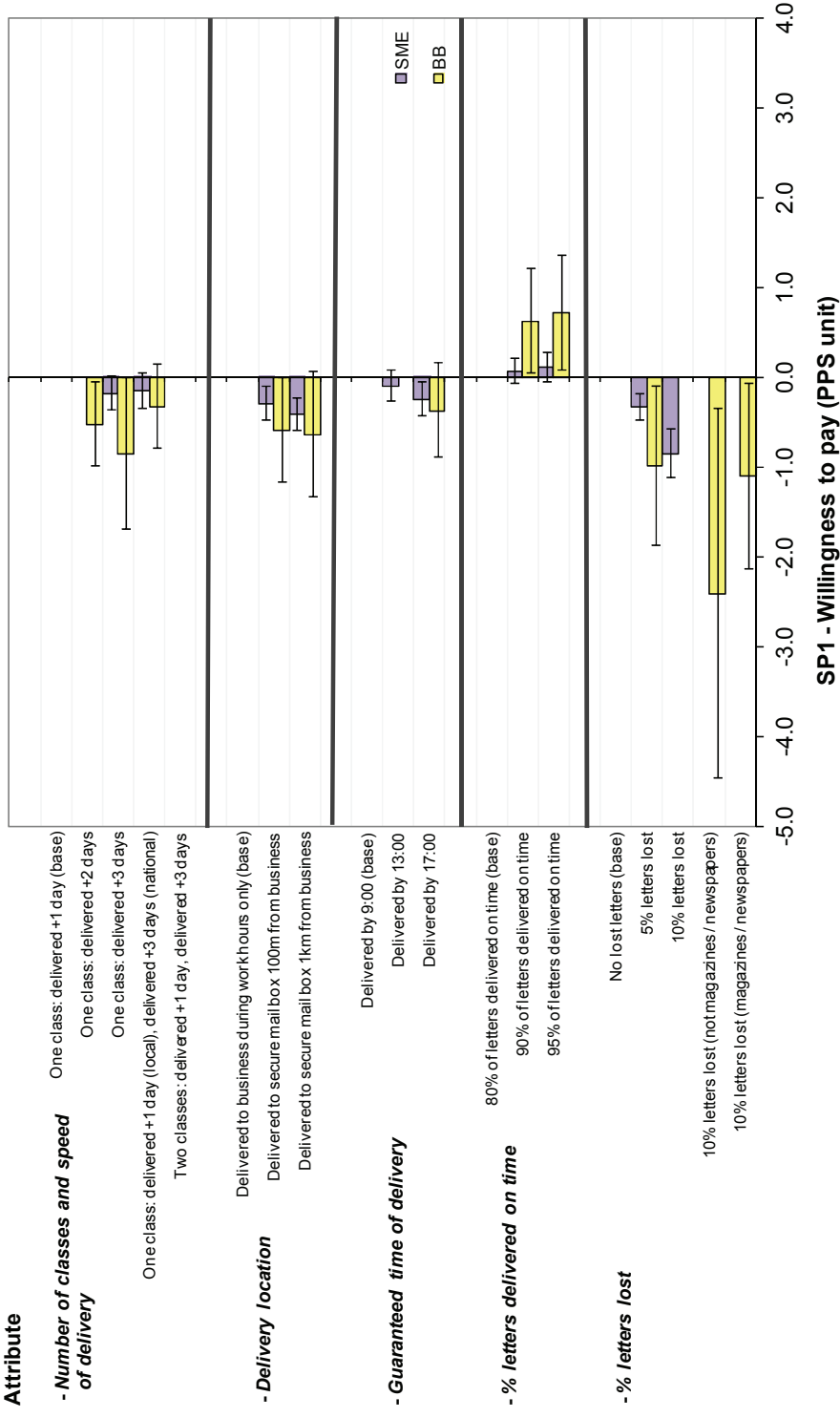


Figure 4.9: Business valuations of postal service options from Experiment 1 (in PPS units; 95% confidence intervals presented)

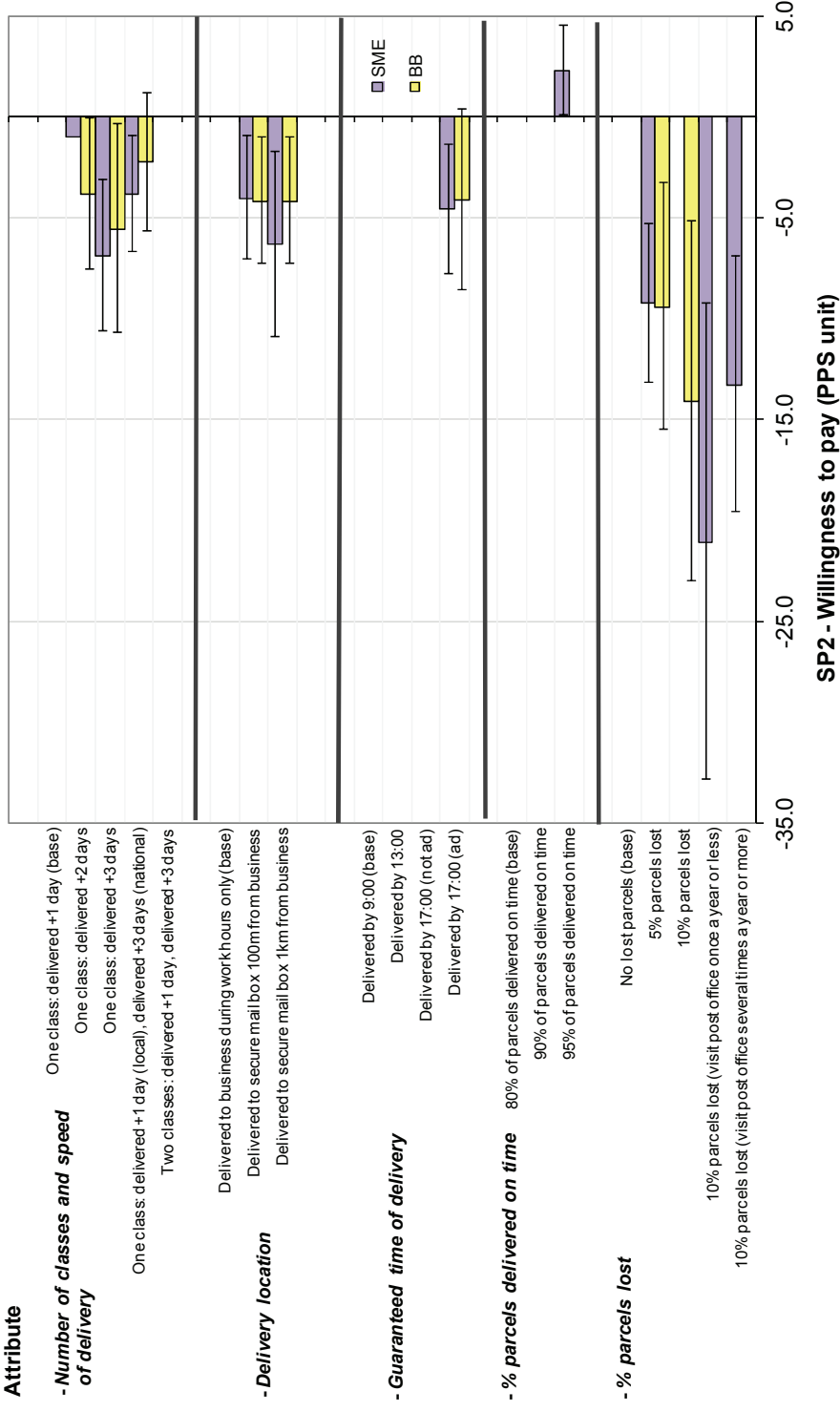


Figure 4.10: Business valuations of postal service options from Experiment 2 (in PPS units; 95% confidence intervals presented)

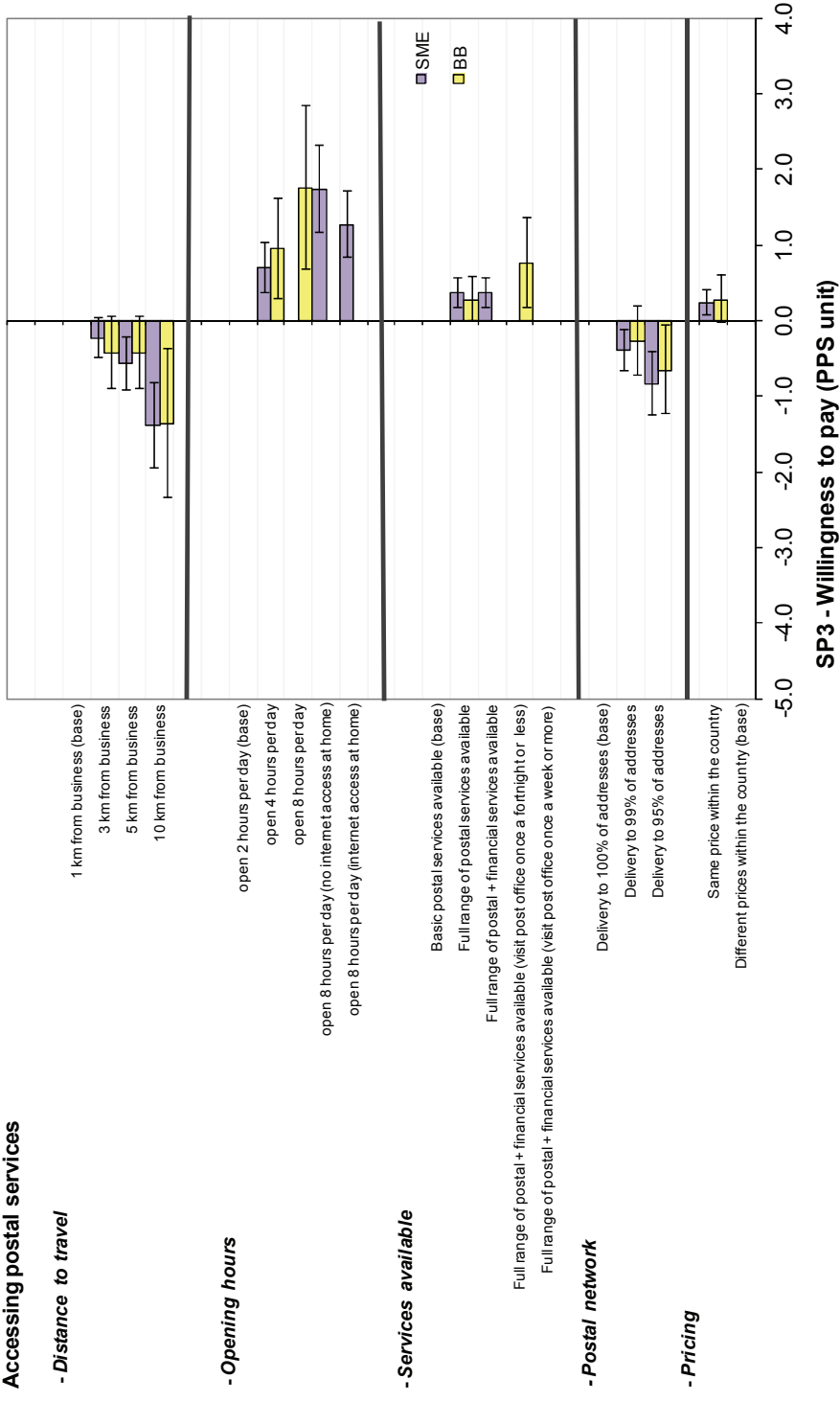


Figure 4.11: Business valuations of postal service options from Experiment 3 (in PPS units; 95% confidence intervals presented)

Below we present the service attribute valuations, in member state local currencies (again measured as changes in stamp prices). Separate tables present the outputs from each experiment and for SMEs and big businesses (BBs), presenting values and their t-ratios. The base level for each attribute is presented first (for these the coefficient is set to be equal to zero, and the standard error is not defined). Values of zero for other levels reflect cases where the resulting coefficients were very small and not different from zero, meaning that they were not valued differently from the base service level. Values presented in light grey are not significantly different from zero at the 95% level of significance.

Table 4.20: Values that SMEs place on postal preferences for letter delivery (in local currencies)

SME	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Domain level						
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 3 working days	-2.18	1.9	-0.45	1.9	-0.20	1.9
One class: local deliveries by next working day; national deliveries within 3 working days	-1.78	-1.5	-0.37	-1.5	-0.16	-1.5
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to business during work hours only (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure mail box 100m from business	-3.44	-3.0	-0.71	-3.0	-0.31	-3.0
Delivered to secure mail box 1 km from business	-4.84	-4.5	-1.00	-4.5	-0.43	-4.5
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	-1.24	-1.2	-0.26	-1.2	-0.11	-1.2
Delivered by 17:00	-2.90	-2.5	-0.60	-2.5	-0.26	-2.5
Percentage of mail delivered on time						
80% of letters delivered on time (base)	0.00	n/a	0.00	n/a	0.00	n/a
90% of letters delivered on time	0.75	0.9	0.16	0.9	0.07	0.9
95% of letters delivered on time	1.27	1.3	0.26	1.3	0.11	1.3
Percentage of letters lost						
No lost letters (base)	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 letters lost	-3.91	-4.5	-0.81	-4.5	-0.35	-4.5
10 out of 100 letters lost	-9.94	-6.2	-2.06	-6.2	-0.89	-6.2
10 out of 100 letters lost (not magazines/new spapers)						
10 out of 100 letters lost (magazines/new spapers)						

Table 4.21: Values that big businesses place on postal preferences for letter delivery (in local currency)

BB Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	-6.16	-2.2	-1.28	-2.2	-0.55	-2.2
One class: delivery within 3 working days	-10.01	-2.0	-2.08	-2.0	-0.90	-2.0
One class: local deliveries by next working day; national deliveries within 3 working days	-3.92	-1.4	-0.81	-1.4	-0.35	-1.4
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to business during work hours only (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure mail box 100m from business	-6.93	-2.0	-1.44	-2.0	-0.62	-2.0
Delivered to secure mail box 1 km from business	-7.49	-1.8	-1.55	-1.8	-0.67	-1.8
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 17:00	-4.37	-1.4	-0.91	-1.4	-0.39	-1.4
Percentage of mail delivered on time						
80% of letters delivered on time (base)	0.00	n/a	0.00	n/a	0.00	n/a
90% of letters delivered on time	7.27	2.1	1.51	2.1	0.65	2.1
95% of letters delivered on time	8.34	2.2	1.73	2.2	0.75	2.2
Percentage of letters lost						
No lost letters (base)	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 letters lost	-11.63	-2.2	-2.41	-2.2	-1.04	-2.2
10 out of 100 letters lost						
10 out of 100 letters lost (not magazines/newspapers)	-28.20	-2.3	-5.85	-2.3	-2.53	-2.3
10 out of 100 letters lost (magazines/newspapers)	-12.97	-2.1	-2.69	-2.1	-1.16	-2.1

Table 4.22: Values that SMEs place on postal preferences for parcel delivery (in local currencies)

SME	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Domain level						
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	-11.41	-0.7	-2.37	-0.7	-1.02	-0.7
One class: delivery within 3 working days	-80.71	-3.6	-16.73	-3.6	-7.25	-3.6
One class: local deliveries by next working day; national deliveries within 3 working days	-45.03	-2.6	-9.34	-2.6	-4.04	-2.6
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to business during work hours only (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure box 100m from business	-47.33	-2.6	-9.81	-2.6	-4.25	-2.6
Delivered to secure box 1 km from business	-74.05	-2.7	-15.35	-2.7	-6.65	-2.7
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 17:00 (not advertising material)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 17:00 (advertising material)	-53.54	-2.8	-11.10	-2.8	-4.81	-2.8
Percentage of mail delivered on time						
80% of parcels delivered on time (base)	0.00	n/a	0.00	n/a	0.00	n/a
90% of parcels delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
95% of parcels delivered on time	26.66	2.0	5.53	2.0	2.39	2.0
Percentage of parcels lost						
No lost parcels (base)	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 parcels lost	-108.27	-4.6	-22.45	-4.6	-9.72	-4.6
10 out of 100 parcels lost						
10 out of 100 parcels lost (visit post office once a year or less)	-246.88	-3.5	-51.18	-3.5	-22.17	-3.5
10 out of 100 parcels lost (visit post office several times a year or more)	-155.54	-4.1	-32.24	-4.1	-13.97	-4.1

Table 4.23: Values that big businesses place on postal preferences for parcel delivery (in local currencies)

BB Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	-45.09	-2.0	-9.35	-2.0	-4.05	-2.0
One class: delivery within 3 working days	-65.13	-2.1	-13.50	-2.1	-5.85	-2.1
One class: local deliveries by next working day; national deliveries within 3 working days	-26.56	-1.3	-5.51	-1.3	-2.39	-1.3
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to business during work hours only (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure box 100m from business	-48.91	-2.6	-10.14	-2.6	-4.39	-2.6
Delivered to secure box 1 km from business	-48.91	-2.6	-10.14	-2.6	-4.39	-2.6
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 17:00 (not advertising material)	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 17:00 (advertising material)	-48.28	-1.8	-10.01	-1.8	-4.34	-1.8
Percentage of mail delivered on time						
80% of parcels delivered on time (base)	0.00	n/a	0.00	n/a	0.00	n/a
90% of parcels delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
95% of parcels delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
Percentage of parcels lost						
No lost parcels (base)	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 parcels lost	-110.19	-3.0	-22.84	-3.0	-9.89	-3.0
10 out of 100 parcels lost	-165.15	-3.1	-34.24	-3.1	-14.83	-3.1
10 out of 100 parcels lost (visit post office once a year or less)						
10 out of 100 parcels lost (visit post office several times a year or more)						

Table 4.24: Values that SMEs place on general postal preferences (in local currencies)

SME	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Domain level						
Accessing postal services						
- Distance to travel						
1 km from home / business (base)	0.00	n/a	0.00	n/a	0.00	n/a
3 km from home / business	-2.73	-1.7	-0.57	-1.7	-0.25	-1.7
5 km from home / business	-6.72	-3.2	-1.39	-3.2	-0.60	-3.2
10 km from home / business	-16.31	-4.9	-3.38	-4.9	-1.46	-4.9
- Opening hours						
open 2 hours per day (base)	0.00	n/a	0.00	n/a	0.00	n/a
open 4 hours per day	8.11	4.2	1.68	4.2	0.73	4.2
open 8 hours per day						
open 8 hours per day (no internet access at home)	20.23	5.9	4.19	5.9	1.82	5.9
open 8 hours per day (internet access at home)	14.86	5.7	3.08	5.7	1.33	5.7
- Services available						
Basic postal services available (base)	0.00	n/a	0.00	n/a	0.00	n/a
Full range of postal services available	4.24	3.5	0.88	3.5	0.38	3.5
Full range of postal services and additional financial services such as banking available	4.24	3.5	0.88	3.5	0.38	3.5
Full range of postal services and additional financial services such as banking available (visit post office once a fortnight or less)						
Full range of postal services and additional financial services such as banking available (visit post office once a week or more)						
Postal network						
Delivery to 100% of addresses (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivery to 99% of addresses	-4.64	-2.9	-0.96	-2.9	-0.42	-2.9
Delivery to 95% of addresses	-9.84	-3.9	-2.04	-3.9	-0.88	-3.9
Pricing						
Same price to deliver to any destination	2.78	2.9	0.58	2.9	0.25	2.9
Different prices to deliver to different destinations within the country (base)	0.00	n/a	0.00	n/a	0.00	n/a

Table 4.25: Values that big businesses place on general postal preferences (in local currencies)

BB Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Accessing postal services						
- Distance to travel						
1 km from home / business (base)	0.00	n/a	0.00	n/a	0.00	n/a
3 km from home / business	-5.10	-1.8	-1.06	-1.8	-0.46	-1.8
5 km from home / business	-5.10	-1.8	-1.06	-1.8	-0.46	-1.8
10 km from home / business	-15.89	-2.7	-3.29	-2.7	-1.43	-2.7
- Opening hours						
open 2 hours per day (base)	0.00	n/a	0.00	n/a	0.00	n/a
open 4 hours per day	11.10	2.8	2.30	2.8	1.00	2.8
open 8 hours per day	20.58	3.2	4.27	3.2	1.85	3.2
open 8 hours per day (no internet access at home)						
open 8 hours per day (internet access at home)						
- Services available						
Basic postal services available (base)	0.00	n/a	0.00	n/a	0.00	n/a
Full range of postal services available	3.28	1.9	0.68	1.9	0.29	1.9
Full range of postal services and additional financial services such as banking available						
Full range of postal services and additional financial services such as banking available (visit post office once a fortnight or less)	8.85	2.5	1.83	2.5	0.79	2.5
Full range of postal services and additional financial services such as banking available (visit post office once a week or more)	0.00	n/a	0.00	n/a	0.00	n/a
Postal network						
Delivery to 100% of addresses (base)	0.00	n/a	0.00	n/a	0.00	n/a
Delivery to 99% of addresses	-3.27	-1.2	-0.68	-1.2	-0.29	-1.2
Delivery to 95% of addresses	-7.69	-2.2	-1.59	-2.2	-0.69	-2.2
Pricing						
Same price to deliver to any destination	3.28	1.8	0.68	1.8	0.29	1.8
Different prices to deliver to different destinations within the country (base)	0.00	n/a	0.00	n/a	0.00	n/a

4.2.5 Resident preferences for postal services

Below we present the resulting valuations for the different postal service attributes tested in the experiment, for residents, in PPS units. Differently from the business analysis, our tests suggested that it was not appropriate to pool together the resident data across member states and therefore separate values are presented for each attribute level for each member state. Again, we observe quite large standard errors for the resulting values, particularly for responses from Italy, but in general not as large as are observed for resulting business valuations. The larger standard errors for Italy are probably explained by the larger confidence intervals on the cost sensitivity attribute, implying that larger cost differences could have been tested in Italy, particularly for the experiments using letter stamp prices (Experiments 1 and 3). However, as discussed in Section 4.2.2, larger cost differences could have been tested in all countries, which could improve the estimate of cost sensitivity and resulting valuations. We would expect smaller standard errors than in the business sample, because of the larger sample sizes for resident consumers (around 350 resident interviews per country, compared with 125 business interviews). However, even larger sample sizes would lead to reductions in the resulting standard errors, and it is noteworthy that the Accent (2008) study contained around 550 resident interviews and 350 business interviews. These relatively large standard errors may explain why we don't see significant differences in valuations across different market segments, for example by age. The valuations, for each attribute level, are presented relative to a base level (shown in the

figures with no value attached). The 95% confidence levels for the valuations are also presented.

In general, we observe the following.

For letters (from the outputs from the first experiment; see Figure 4.12 for the detailed values):

- Generally, we observe that resident consumers are not so sensitive to speed of delivery for letter products, although there is some evidence that Polish respondents have higher levels of dissatisfaction with two-day and three-day service levels, particularly vulnerable respondents who are dissatisfied with a three-day service, compared with a single-class next day service. This may be because vulnerable people are more reliant on postal services. Generally, the non-uniform delivery option is not considered worse than the next day delivery service. These results are generally consistent with the qualitative findings. In the qualitative findings only 4% of Swedish consumers indicated that they would like to see faster delivery – and we see little evidence of WTP for these services from the choice experiments. For Polish consumers, just over a quarter of resident respondents indicated that they would like faster services and we observe some WTP for faster services in the experiments. There is less consistency in the results for Italy, where we observe only a small WTP for faster services (or WTA compensation for two- or three-day services) compared with the qualitative findings where 37% of resident respondents indicated that they would like faster delivery. It may be that the Italian respondents were much more concerned with lost letters in the experiment, which they valued very highly.
- Home delivery is important to resident consumers, and there is surprisingly level of consistency in values across the three member states. As with businesses, Polish and Italian residents prefer delivery at home and require compensation for delivery to secure locations away from their home (with larger compensation required for distances further away); in Sweden we see some evidence that delivery location matters to vulnerable people over 44 years of age (where travelling may be more difficult) and non-vulnerable people, although vulnerable people less than 44 years of age did not see this as an important issue.
- It appears that residents in Sweden and Poland prefer later time deliveries – which is opposite from what was found for businesses. Perhaps residents prefer to be at home when their post is delivered. Later time deliveries do not seem to matter to Italian residents.
- Residents in all countries valued improvements in reliability (percentage of mail delivered on time), although the relative valuations are fairly small and with residents in Poland and Italy not differentiating between the 90% and 95% levels.
- As with businesses, residents in all countries were willing to pay substantial amounts to reduce the levels of lost letters. Specifically, we see that residents require compensation in the order of 0.66 PPS units to 1.63 PPS units for a loss level of 10% compared with no lost letters. We see some evidence that non-vulnerable residents may be more sensitive to the level of lost letters (for example in Sweden and Poland), although this doesn't seem to be the case in Italy.

We see a similar pattern, but with higher valuations for the parcels market (from the outputs of the second experiment; see Figure 4.13 for the detailed values):

- Again, we observe that residents are also not so sensitive to speed of delivery for parcel products, although there is some evidence that Italian and Polish residents dislike the single three-day class of service, and vulnerable residents in Italy have a strong dislike of the non-uniform service delivery option. As was observed for letters, there doesn't seem to be a substantial preference for a two-class service.
- Again, we see a preference for delivery for parcels directly to their homes by all residents (residents require compensation of between 1.8 and 3.8 PPS units, depending on the member state). In Sweden, there is some evidence that vulnerable respondents place a higher value on home delivery.
- It appears that residents in Poland and Italy prefer later time deliveries for parcels – again the opposite from what was found for businesses. Time of delivery of parcels does not seem to matter to Swedish residents.
- As with businesses, reliability (percentage of parcels delivered on time) is not so important for parcels for Swedish and Polish residents, with vulnerable residents placing a lower value on reliability compared with non-vulnerable respondents. Italian residents do, however, value reliability for parcels (Italian residents are willing to pay five PPS units to increase the percentage of mail delivered on time from 80% delivered on time to 95% delivered on time).
- Again, residents in all countries place a high value on low levels of lost parcels (in the order of ten to 20 PPS units, depending on the loss level). In Sweden those under the age of 60 seem to place a higher value on lower levels of lost parcels; we also see that vulnerable residents returning goods place a higher value on lower levels of lost parcels. In Poland, we see higher valuations for non-vulnerable respondents compared with vulnerable respondents.

Regarding the postal service more generally (from outputs of the third experiment; see Figure 4.14 for the detailed values):

- We see strong preferences for post office services to be located near respondents' homes, with higher levels of compensation required for distances further from home – there is surprising levels of consistency in the estimates for Swedish and Polish residents – in the order of 1.5 PPS units compensation required for postal services 10km from home. For Italy we see similar values, but with higher valuations for vulnerable residents (2.2 PPS units) compared with non-vulnerable residents (1.6 PPS units).
- Residents have preferences for longer opening hours – again, there is a surprising level of consistency in the values for Swedish and Polish residents and evidence of differences between vulnerable and non-vulnerable residents in Italy (with non-vulnerable residents valuing longer opening hours more).
- Residents in all countries place a small but positive value on having both a full range of postal services available and having financial services available too.
- Residents value 100% coverage of addresses in the postal network and require compensation for reductions in coverage – we see some evidence that non-vulnerable residents place more value on coverage than vulnerable residents at the 95% level of coverage.

- Residents in Sweden and Poland and vulnerable residents in Poland place a small value on having uniform pricing (around 0.20 PPS units); however, non-vulnerable residents in Poland do not see value in uniform pricing (and have a small preference for a system with different pricing), although vulnerable residents do place a small (but insignificant) value on uniform pricing.

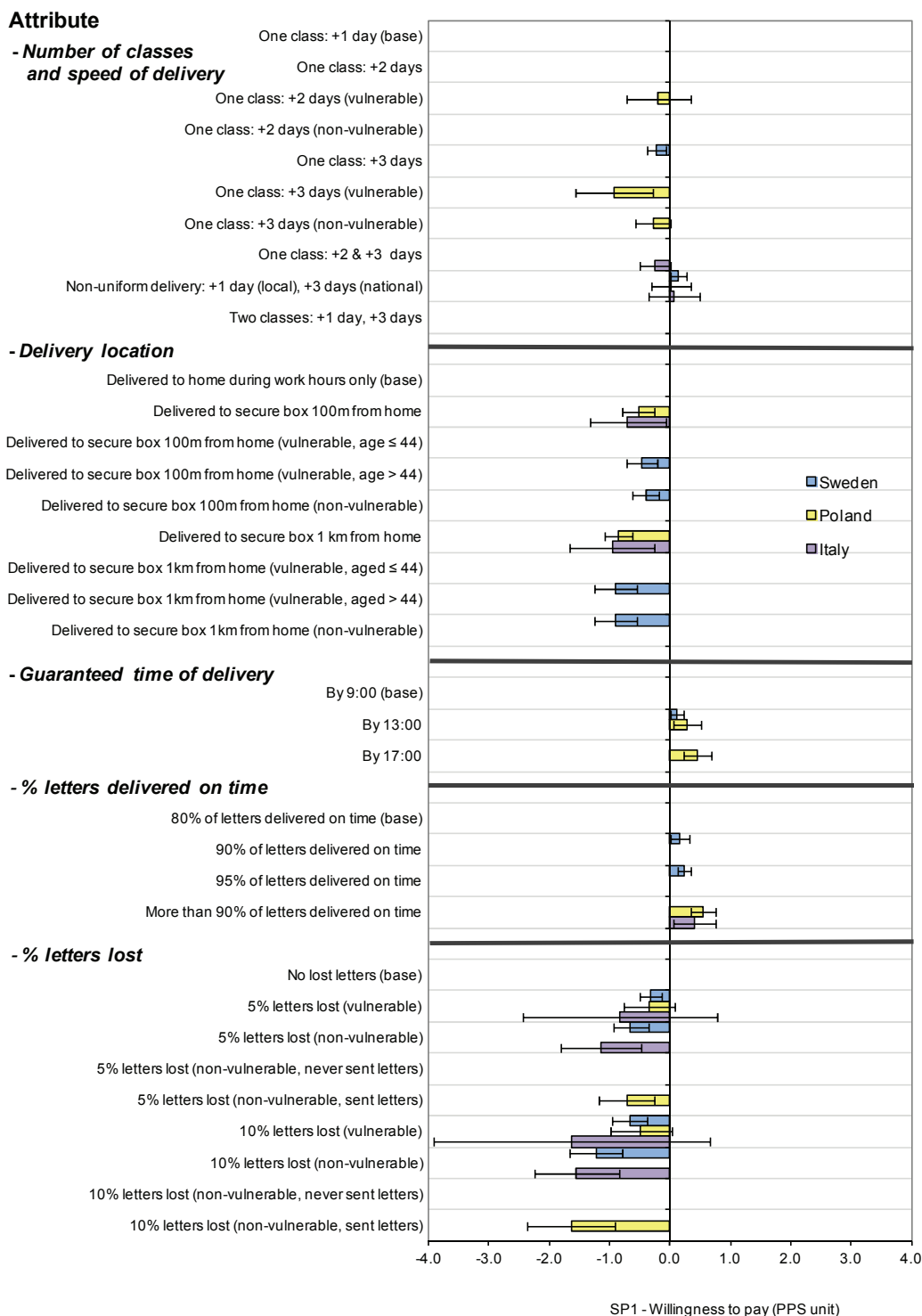


Figure 4.12: Resident valuations of postal service options from Experiment 1 (in PPS units)

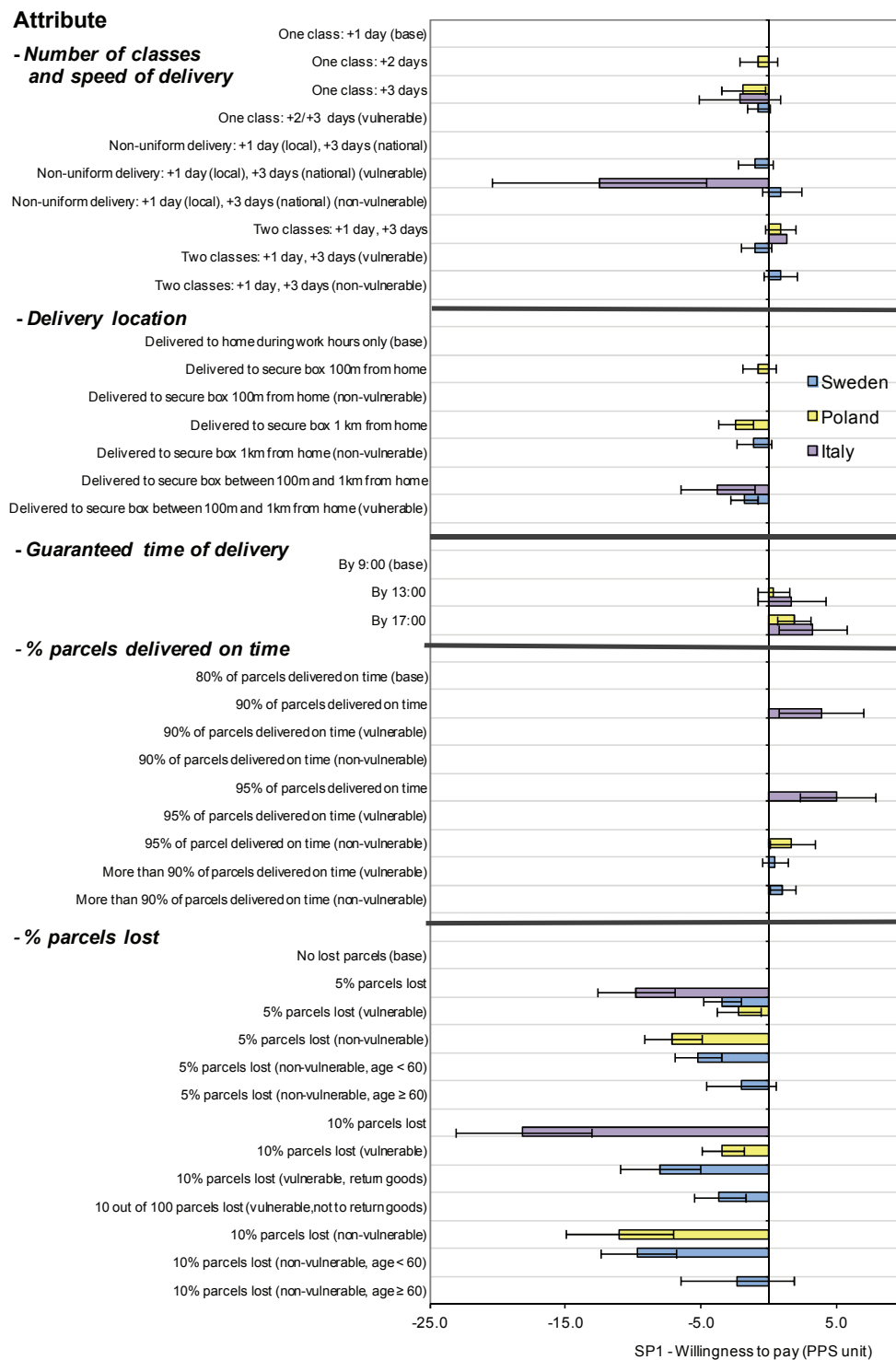
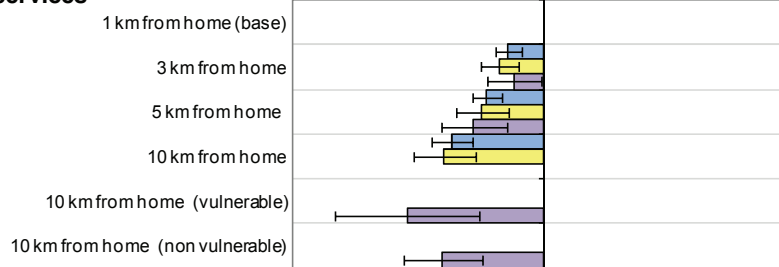


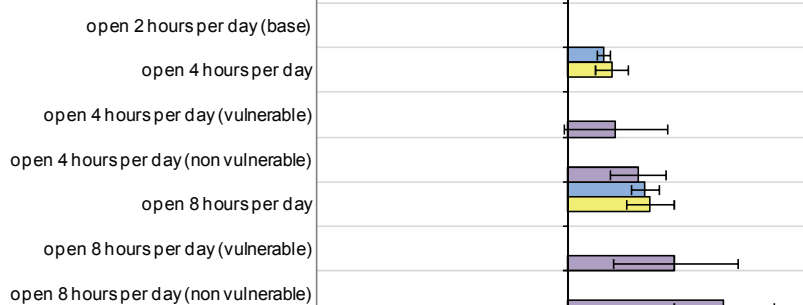
Figure 4.13: Resident valuations of postal service options from Experiment 2 (in PPS units)

Accessing postal services

- Distance to travel



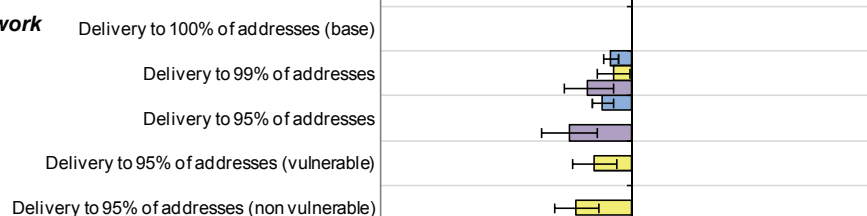
- Opening hours



- Services available



- Postal network



- Pricing



-4.0 -3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0

SP3 - Willingness to pay (PPS unit)

Figure 4.14: Resident valuations of postal service options from Experiment 3 (in PPS units)

Below we present the resulting service attribute valuations for resident consumers, in member state local currencies, measured as changes in stamp prices. Separate tables are presented for the outputs from each experiment and for each member state. Both the values and their t-ratios are presented. The base level for each attribute is presented first (for these the coefficient is set to be equal to zero). Values of zero for other levels reflect cases where the resulting coefficients were very small and not different from zero, so that they were not valued differently from the base service level. Values presented in light grey are not significantly different from zero at the 95% level of significance.

Table 4.26: Values that residents place on postal preferences for letter delivery (in local currencies)

Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Number of classes and speed of service						
One class: delivery by next working day	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	0.00	n/a				
One class: delivery within 2 working days (vulnerable)			-0.46	-0.7		
One class: delivery within 2 working days (non-vulnerable)			0.00	n/a		
One class: delivery within 3 working days	-2.58	-2.8				
One class: delivery within 3 working days (vulnerable)			-2.24	-2.8		
One class: delivery within 3 working days (non-vulnerable)			-0.67	-1.9		
One class: delivery within 2-3 working days					-0.24	-1.6
One class: local deliveries by next working day; national deliveries within 3 working days	1.68	2.1	0.04	-0.1	0.13	-0.6
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to home during work hours only	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure box 100m from home			-1.26	-3.9	-0.81	-3.1
Delivered to secure box 100m from home (vulnerable) * age ≤ 44 years	0.00	n/a				
Delivered to secure box 100 m from home (vulnerable) * age > 44 years	-5.39	-3.6				
Delivered to secure box 100m from home (non-vulnerable)	-4.71	-3.6				
Delivered to secure box 1 km from home			-2.08	-7.4	-1.13	-2.9
Delivered to secure box 1km from home (vulnerable) * age ≤ 44 years	0.00	n/a				
Delivered to secure box 1km from home (vulnerable) * age > 44 years	-10.51	-5.0				
Delivered to secure box 1km from home (non-vulnerable)	-10.62	-5.0				
Guaranteed time of delivery						
Delivered by 9:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	1.47	2.3	0.68	2.4	0.00	n/a
Delivered by 17:00	0.00	n/a	1.11	3.8	0.00	n/a
Percentage of mail delivered on time						
80% of letters delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
90% of letters delivered on time	1.86	2.0				
95% of letters delivered on time	2.70	4.1				
More than 90% of letters delivered on time			1.32	5.2	0.48	2.2
Percentage of letters lost						
No lost letters	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 letters lost (vulnerable)	-3.66	-3.4	-0.85	-1.6	-1.47	-0.7
5 out of 100 letters lost (non-vulnerable)	-7.64	-4.5			-1.28	-3.2
5 out of 100 letters lost (non-vulnerable, never sent letters)			0.00	n/a		
5 out of 100 letters lost (non-vulnerable, sent letters)			-1.74	-3.1		
10 out of 100 letters lost (vulnerable)	-7.77	-4.5	-1.16	-1.8	-2.68	-0.8
10 out of 100 letters lost (non-vulnerable)	-14.30	-5.5			-1.70	-3.9
10 out of 100 letters lost (non-vulnerable, never sent letters)			0.00	n/a		
10 out of 100 letters lost (non-vulnerable, sent letters)			-3.96	-4.4		

Table 4.27: Values that residents place on postal preferences for parcel delivery (in local currencies)

Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Number of classes and speed of service						
One class: delivery by next working day	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2 working days			-4.03	-1.3	0.00	n/a
One class: delivery within 3 working days			-8.95	-2.3	-2.27	-1.4
One class: delivery within 2-3 working days (vulnerable)	-9.19	-1.8				
One class: local deliveries by next working day; national deliveries within 3 working days			0.00	n/a		
One class: local deliveries by next working day; national deliveries within 3 working days (vulnerable)	-11.52	-1.5			-13.19	-3.1
One class: local deliveries by next working day; national deliveries within 3 working days (non-vulnerable)	10.53	1.2			0.00	n/a
Two classes: next working day and within 3 working days			4.00	1.5	1.43	-1.1
Two classes: next working day and within 3 working days (vulnerable)	-11.83	-1.8				
Two classes: next working day and within 3 working days (non-vulnerable)	9.62	1.3				
Delivery location						
Delivered to home during work hours only	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure box 100m from home			-3.58	-1.2		
Delivered to secure box 100m from home (non-vulnerable)	0.00	n/a				
Delivered to secure box 1 km from home			-11.75	-4.0		
Delivered to secure box 1 km from home (non-vulnerable)	-13.09	-1.7				
Delivered to secure box between 100m and 1 km from home					-3.97	-2.7
Delivered to secure box between 100m and 1 km from home (vulnerable)	-21.60	-3.6				
Guaranteed time of delivery						
Delivered by 9:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	1.40	0.6	1.76	1.3
Delivered by 17:00	0.00	n/a	8.74	3.1	3.39	2.5
Percentage of mail delivered on time						
80% of parcels delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
90% of parcels delivered on time					4.03	2.4
95% of parcels delivered on time					5.29	3.5
90% of parcels delivered on time (non-vulnerable)			0.00	n/a		
95% of parcels delivered on time (non-vulnerable)			7.93	2.0		
90% of parcels delivered on time (vulnerable)			0.00	n/a		
95% of parcels delivered on time (vulnerable)			0.00	n/a		
More than 90% of parcels delivered on time (non-vulnerable)	11.49	2.1				
More than 90% of parcels delivered on time (vulnerable)	5.00	0.9				
Percentage of parcels lost						
No lost parcels	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 parcels lost					-10.37	-6.8
5 out of 100 parcels lost (non-vulnerable)			-33.52	-6.6		
5 out of 100 parcels lost (vulnerable)	-40.78	-5.0	-10.64	-3.0		
5 out of 100 parcels lost (non-vulnerable, age ≥ 60)	-24.16	-1.6				
5 out of 100 parcels lost (non-vulnerable, age < 60)	-61.28	-5.9				
10 out of 100 parcels lost (non-vulnerable, age ≥ 60)	-27.65	-1.1				
10 out of 100 parcels lost (non-vulnerable, age < 60)	-113.11	-6.7				
10 out of 100 parcels lost (vulnerable, do not use parcel service to return goods)	-42.70	-3.8				
10 out of 100 parcels lost (vulnerable, use parcel service to return goods)	-94.13	-5.3				
10 out of 100 parcels lost (non-vulnerable)			-52.20	-5.5		
10 out of 100 parcels lost (vulnerable)			-16.27	-4.4		
10 out of 100 parcels lost					-19.06	-7.1

Table 4.28: Values that residents place on postal preferences (in local currencies)

Domain level	Sweden (Krona)		Poland (Zloty)		Italy (Euro)	
	WTP	t-ratio	WTP	t-ratio	WTP	t-ratio
Accessing postal services						
- <i>Distance to travel</i>						
1 km from home	0.00	n/a	0.00	n/a	0.00	n/a
3 km from home	-6.57	-5.1	-1.72	-4.7	-0.49	-2.1
5 km from home	-10.58	-7.4	-2.40	-4.6	-1.18	-4.2
10 km from home	-17.15	-8.7	-3.85	-6.2		
10 km from home (vulnerable)					-2.30	-3.7
10 km from home (non vulnerable)					-1.70	-5.0
- <i>Opening hours</i>						
open 2 hours per day	0.00	n/a	0.00	n/a	0.00	n/a
open 4 hours per day	6.73	10.0	1.71	5.0		
open 4 hours per day (vulnerable)					0.80	1.8
open 4 hours per day (non vulnerable)					1.19	5.0
open 8 hours per day	14.57	10.8	3.20	6.8		
open 8 hours per day (vulnerable)					1.82	3.4
open 8 hours per day (non vulnerable)					2.62	6.1
- <i>Services available</i>						
Basic postal services available	0.00	n/a	0.00	n/a	0.00	n/a
Full range of postal services available, e.g. including registered and insured items	3.34	5.1	0.76	3.0	0.26	1.4
Full range of postal services and additional financial services such as banking available	3.34	5.1	0.97	3.2	0.45	2.4
Postal network						
Delivery to 100% of addresses	0.00	n/a	0.00	n/a	0.00	n/a
Delivery to 99% of addresses	-4.00	-5.4	-0.70	-2.2	-0.73	-3.5
Delivery to 95% of addresses	-5.55	-5.5			-1.05	-4.4
Delivery to 95% of addresses (vulnerable)			-1.45	-3.3		
Delivery to 95% of addresses (non vulnerable)			-2.14	-4.9		
Pricing						
Same price to deliver to any destinations within the country	2.58	4.0			0.19	2.0
Same price to deliver to any destinations within the country (vulnerable)			0.60	1.3		
Same price to deliver to any destinations within the country (non vulnerable)			-0.65	-2.0		
Different prices to deliver to different destinations within the country	0.00	n/a	0.00	n/a	0.00	n/a

CHAPTER 5 **Conclusions and considerations for future studies**

The aim of this study was to set out an appropriate methodology for measuring consumer preferences for postal services. As a result of developing the methodology and testing it in three member states, we are able to make observations about consumers' preferences for postal services in Sweden, Poland and Italy as well as making recommendations about the methodology. Specifically we conclude this chapter by setting out a toolkit for others who are considering undertaking such a study.

5.1 **Consumers' preferences for postal services**

The results from the SP discrete choice exercises provide monetary values for the different service levels tested in the choice experiments for Swedish, Italian and Polish business and resident consumers.

We note that for letter services, the valuations are measured relative to the price of a stamp (20 g), and therefore to obtain the total WTP for service improvements (or compensation required for service decrement) the total volume of letter mail has to be considered. For example, if consumers are willing to pay €0.1 on the stamp price for a service improvement, then the total WTP within the market will be €0.1 multiplied by the total volume of mail. For parcel services, the valuations are measured relative to the price of a 1 kg parcel. *In order to compute the total WTP for service improvements (or compensation required for service reductions), the total volume of parcel mail has to be considered.*

5.1.1 **How consumer postal service attributes in Sweden, Poland and Italy**

Our general findings on consumers' preferences for postal services are summarised below.

Big businesses value letter services more than SMEs or residents whereas all consumers value parcel services

We observe that big businesses value letter services more than SMEs or residents – and this is not surprising because big businesses are more likely to be senders of large volumes of mail – over 60% of big businesses compared with 14% of SMEs in our sample send over 500 pieces of mail per month. Thus they appear to have a vested interest in good letter services and are willing to pay for those services. However, differences in parcel sending between big businesses and SMEs are much less marked – with 15% of SMEs and 17% of big businesses sending over 100 parcels per month – and here we see more similar valuations of postal service attributes between big businesses and SMEs.

Both big businesses and residents tend to place higher valuations, absolutely and relative to base prices, on parcel services than on letter services.

When we look at specific service attributes, we see the following.

Reductions in the number of lost letters or parcels has been identified as the most important service attribute for both business and resident consumers

The experiments tested three levels of loss for letters and parcels: no lost letters or parcels, 5% loss and 10% loss. We recognise that these are very large loss levels. However, 5% and 10% loss levels require very large levels of compensation, particularly for parcels, by all consumers. These findings are inconsistent with the qualitative findings, where reduction of lost items was not ranked as highly as improvements in speed of service – but perhaps respondents were not considering loss levels of 10% when considering the qualitative questions.

All consumers also value reliability

All consumers valued improvements in reliability (measured as percentage of letters or parcels delivered on time). Big businesses placed the highest value on reliability for letter services. Both SMEs and residents placed high values on reliability for parcel services.

Businesses, particularly big businesses, value speed of delivery for letter services

We observe that businesses, particularly big businesses, value speed of delivery for letter services, whereas SMEs and resident consumers seem to place less value on this postal service attribute. We find that a single service with a two-day delivery may be acceptable to SMEs and residents, but would be less acceptable to large businesses. Alternatively, a non-uniform speed of delivery option, where local letter deliveries are made by the next day but national deliveries are made within three days, may be an acceptable compromise to business and resident consumers, although this contradicts findings from the qualitative findings, where two-thirds of respondents indicated that mail should be delivered as quickly to rural locations as to urban locations. The non-uniform option seems to be less acceptable for parcels, particularly for businesses. We do not observe any preference for a two-class service offering both next day and within three-day deliveries, compared with a single next day service.

Generally, speed of delivery is perceived to be more valuable for parcels than letters, particularly for businesses.

Delivery to the home or work location is important for businesses and residents

Business and resident consumers required compensation for letter and parcel delivery to secure boxes away from their work or home locations. In Sweden we see some evidence that delivery location matters to vulnerable people over 44 years of age (where travelling may be more difficult) and non-vulnerable people, although vulnerable people less than 44 years of age did not see this as an important issue.

Early morning guaranteed time of delivery was not highly valued by consumers

The evidence from this work suggests that businesses would be willing to accept a 13:00 guaranteed time of delivery without much compensation relative to a 09:00 guaranteed time of delivery; although, they would require substantial compensation for a move to a guaranteed time of delivery at 17:00. Resident consumers seemed to value later deliveries more positively in general, which was counter-intuitive to what we were expecting but may

be because many respondents do not require delivery during the day when they are not at home.

Regarding general characteristics of the postal service, we find the following.

All consumers want to access services nearer their home or work and with longer opening hours

Businesses and resident consumers are willing to pay for having postal services nearer their work or home, and there are surprising levels of consistency in the valuations across businesses and resident consumers, and across countries. Consumers also value service locations with longer opening hours. In this study we observed lower levels of WTP for a wider range of postal services or financial services.

Consumers value higher levels of coverage of the postal network

We observe that both business and resident consumers value full coverage of the network – delivery to all addresses in a country – with SMEs valuing this more than larger business. We see relatively high valuations for both residents and consumers.

Consumers have a preference for uniform pricing for letter and parcels within the country, but the value is relatively small compared with other postal service attributes

Generally, we observe that business and resident consumers have a small preference for uniform pricing for letter and parcels within a country, although the value attached to uniform pricing is relatively small (non-vulnerable residents in Poland are the exception here, as they do not value uniform services positively).

The following tables summarise the resulting values for each attribute level, for the business and consumer segments. All valuations are measured relative to a base attribute level (which is explicitly labelled) and are measured in PPS units, for comparison purposes. Positive values indicate WTP for service improvements; negative values are WTA compensation for service deteriorations. A value of zero indicates that the service level is valued the same as the base service level. Values in light grey are not significantly different from zero at the 95% confidence level.

Table 5.1: SME and large business valuations for letter and parcel services (PPS units)

Domain level	Letters		Parcels	
	SME WTP (PPS)	BB WTP (PPS)	SME WTP (PPS)	BB WTP (PPS)
Number of classes and speed of service				
One class: delivery by next working day (base)	0.00	0.00	0.00	0.00
One class: delivery within 2 working days	0.00	-0.53	-0.97	-3.85
One class: delivery within 3 working days	-0.19	-0.85	-6.89	-5.56
One class: local deliveries by next working day; national deliveries within 3 working days	-0.15	-0.33	-3.84	-2.27
Two classes: next working day and within 3 working days	0.00	0.00	0.00	0.00
Delivery location				
Delivered to business during work hours only (base)	0.00	0.00	0.00	0.00
Delivered to secure mail box 100m from business	-0.29	-0.59	-4.04	-4.17
Delivered to secure mail box 1 km from business	-0.41	-0.64	-6.32	-4.17
Guaranteed time of delivery				
Delivered by 9:00 (base)	0.00	0.00	0.00	0.00
Delivered by 13:00	-0.11	0.00	0.00	0.00
Delivered by 17:00	-0.25	-0.37		
Delivered by 17:00 (not advertising material)			0.00	0.00
Delivered by 17:00 (advertising material)			-4.57	-4.12
Percentage of mail delivered on time				
80% of letters / parcels delivered on time (base)	0.00	0.00	0.00	0.00
90% of letters / parcels delivered on time	0.06	0.62	0.00	0.00
95% of letters / parcels delivered on time	0.11	0.71	2.28	0.00
Percentage of letters lost				
No lost letters / parcels (base)	0.00	0.00	0.00	0.00
5 out of 100 letters / parcels lost	-0.33	-0.99	-9.24	-9.40
10 out of 100 letters / parcels lost	-0.85			-14.10
10 out of 100 letters lost (not magazines / new papers)		-2.41		
10 out of 100 letters lost (magazines / new papers)		-1.11		
10 out of 100 parcels lost (visit post office once a year or less)			-21.07	
10 out of 100 parcels lost (visit post office several times a year or more)			-13.28	

Table 5.2: Resident valuations for letter and parcel services (PPS units)

Domain level	Letters			Parcels		
	Sweden WTP (PPS)	Poland WTP (PPS)	Italy WTP (PPS)	Sweden WTP (PPS)	Poland WTP (PPS)	Italy WTP (PPS)
Number of classes and speed of service						
One class: delivery by next working day (base)	0.00	0.00	0.00	0.00	0.00	0.00
One class: delivery within 2 working days	0.00				-0.85	0.00
One class: delivery within 2 working days (vulnerable)		-0.19				
One class: delivery within 2 working days (non-vulnerable)		0.00				
One class: delivery within 2-3 working days			-0.25			
One class: delivery within 2-3 working days (vulnerable)				-0.78		
One class: delivery within 3 working days	-0.22				-1.90	-2.16
One class: delivery within 3 working days (vulnerable)		-0.92				
One class: delivery within 3 working days (non-vulnerable)		-0.28				
One class: local deliveries by next working day; national deliveries within 3 working days	0.14	0.02	0.06		0.00	
One class: local deliveries by next working day; national deliveries within 3 working days (vulnerable)				-0.98		-12.54
One class: local deliveries by next working day; national deliveries within 3 working days (non-vulnerable)				0.90		0.00
Two classes: next working day and within 3 working days	0.00	0.00	0.00		0.85	1.36
Two classes: next working day and within 3 working days (vulnerable)				-1.01		
Two classes: next working day and within 3 working days (non-vulnerable)				0.82		
Delivery location						
Delivered to home during work hours only (base)	0.00	0.00	0.00	0.00	0.00	0.00
Delivered to secure mail box 100m from home		-0.52	-0.70		-0.76	
Delivered to secure mail box 100m from home (vulnerable * age ≤ 44 years)	0.00					
Delivered to secure mail box 100m from home (vulnerable * age > 44 years)	-0.46					
Delivered to secure mail box 100m from home (non-vulnerable)	-0.40			0.00		
Delivered to secure mail box 1 km from home		-0.86	-0.96		-2.49	
Delivered to secure mail box 1 km from home (vulnerable * age ≤ 44 years)	0.00					
Delivered to secure mail box 1 km from home (vulnerable * age > 44 years)	-0.90					
Delivered to secure mail box between 100m and 1 km from home						-3.77
Delivered to secure mail box between 100m and 1 km from home which you can access at any time (vulnerable)				-1.84		
Delivered to secure mail box 1 km from home (non-vulnerable)	-0.91			-1.12		
Guaranteed time of delivery						
Delivered by 9:00 (base)	0.00	0.00	0.00	0.00	0.00	0.00
Delivered by 13:00	0.13	0.28	0.00	0.00	0.30	1.67
Delivered by 17:00	0.00	0.46	0.00	0.00	1.85	3.22
Percentage of mail delivered on time						
80% of letters / parcels delivered on time (base)	0.00	0.00	0.00	0.00	0.00	0.00
90% of letters / parcels delivered on time	0.16					3.83
90% of parcels delivered on time (vulnerable)					0.00	
90% of parcels delivered on time (non-vulnerable)					0.00	
95% of letters / parcels delivered on time	0.23					5.03
95% of parcels delivered on time (vulnerable)					0.00	
95% of parcels delivered on time (non-vulnerable)					1.68	
More than 90% of letters / parcels delivered on time		0.54	0.40	0.43		
More than 90% of parcels delivered on time (vulnerable)				0.43		
More than 90% of parcels delivered on time (non-vulnerable)				0.98		
Percentage of letters lost						
No lost letters / parcels (base)	0.00	0.00	0.00	0.00	0.00	0.00
5 out of 100 letters / parcels lost						-9.85
5 out of 100 letters / parcels lost (vulnerable)	-0.31	-0.35	-0.82	-3.48	-2.25	
5 out of 100 letters / parcels lost (non-vulnerable)	-0.65		-1.14		-7.10	
5 out of 100 letters / parcels lost (non-vulnerable, never sent letters)		0.00				
5 out of 100 letters / parcels lost (non-vulnerable, sent letters)		-0.72				
5 out of 100 parcels lost (non-vulnerable, age < 60 years)				-5.23		
5 out of 100 parcels lost (non-vulnerable, age ≥ 60 years)				-2.06		
10 out of 100 parcels lost						-18.12
10 out of 100 letters / parcels lost (vulnerable)	-0.66	-0.48	-1.63		-3.45	
10 out of 100 parcels lost (vulnerable, use parcel service to return goods)				-8.03		
10 out of 100 parcels lost (vulnerable, do not use parcel service to return goods)				-3.64		
10 out of 100 letters / parcels lost (non-vulnerable)	-1.22		-1.54		-11.05	
10 out of 100 letters lost (non-vulnerable, never sent letters)		0.00				
10 out of 100 letters lost (non-vulnerable, sent letters)		-1.63				
10 out of 100 parcels lost (non-vulnerable, age < 60 years)				-9.65		
10 out of 100 parcels lost (non-vulnerable, age ≥ 60 years)				-2.36		

Table 5.3: Business and resident valuations for general postal service attributes (PPS units)

Domain level	Business		Residents		
	SME WTP (PPS)	BB WTP (PPS)	Sweden WTP (PPS)	Poland WTP (PPS)	Italy WTP (PPS)
Accessing postal services					
- <i>Distance to travel</i>					
1 km from home / business (base)	0.00	0.00	0.00	0.00	0.00
3 km from home / business	-0.23	-0.44	-0.56	-0.71	-0.47
5 km from home / business	-0.57	-0.44	-0.90	-0.99	-1.12
10 km from home / business	-1.39	-1.36	-1.46	-1.58	
10 km from home (vulnerable)					-2.19
10 km from home (non vulnerable)					-1.61
- <i>Opening hours</i>					
open 2 hours per day (base)	0.00	0.00	0.00	0.00	0.00
open 4 hours per day	0.69	0.95	0.57	0.70	
open 4 hours per day (vulnerable)					0.76
open 4 hours per day (non vulnerable)					1.13
open 8 hours per day		1.76	1.24	1.32	
open 8 hours per day (no internet access at home)	1.73				
open 8 hours per day (internet access at home)	1.27				
open 8 hours per day (vulnerable)					1.73
open 8 hours per day (non vulnerable)					2.49
- <i>Services available</i>					
Basic postal services available (base)	0.00	0.00	0.00	0.00	0.00
Full range of postal services available, e.g. including registered and insured	0.36	0.28	0.29	0.31	0.25
Full range of postal services and additional financial services	0.36		0.29	0.40	0.42
Full range of postal services and additional financial services (visit post office once a fortnight or less)		0.76			
Full range of postal services and additional financial services (visit post office once a week or more)		0.00			
Postal network					
Delivery to 100% of addresses (base)	0.00	0.00	0.00	0.00	0.00
Delivery to 99% of addresses	-0.40	-0.28	-0.34	-0.29	-0.69
Delivery to 95% of addresses	-0.84	-0.66	-0.47		-1.00
Delivery to 95% of addresses (vulnerable)				-0.60	
Delivery to 95% of addresses (non vulnerable)				-0.88	
Pricing					
Same price to deliver to any destinations within the country	0.24	0.28	0.22		0.18
Same price to deliver to any destinations within the country (vulnerable)				0.25	
Same price to deliver to any destinations within the country (non vulnerable)				-0.27	
Different prices to deliver to different destinations within the country (base)	0.00	0.00	0.00	0.00	0.00

5.2 What the findings mean for policy and regulation

What do people expect from postal services in Europe today? The methodology developed and applied to Italy, Poland and Sweden reveals a series of important findings and allows for selected conclusions.

5.2.1 Discussion of results

Generally, we have found high values of WTA and WTP for the individual elements of postal services. The values exhibit the expected sign with rather large confidence intervals. In important aspects, consumer preferences overlap among customer segments and countries.

Categorised along the economic framework presented earlier, the main findings can be summarised as follows (WTA and WTP interpreted relative to the price of baseline product):

- On the sender side, it is very important for all customers to be reached within a reasonable distance (not more than 3 km) and to have a postal contact point with opening hours of at least four or, even better, eight hours. This is despite the fact

that most customers agree with the statement that they rarely go to a postal contact point. To a lesser extent, customers care about the scope of services offered in these contact points and prefer the availability of full range of postal services (compared with basic services only). Financial services are valued from some big businesses as well as from households in Poland and Italy.

- On the recipient side, both businesses and households clearly dislike postal services that do not deliver letters or parcels to the doorstep. All customer groups also dislike services that do not deliver to all addresses in the country. Businesses prefer delivery during office hours (before 17:00), whereas households in Italy and Poland favour the latest delivery option, suggesting that respondents prefer to be at home when delivery takes place (after office hours).
- For the service connecting the sender and recipient side, customers value first and foremost a service where no letters or parcels are lost. The attribute can be interpreted as a proxy for the value of the information or goods that are handed over to the postal operators. The very high estimates (up to over 500% of base price in Sweden and Poland) highlight the importance of postal services and indicate that customers indeed trust postal services in delivering valuable items. Moreover, customers reveal important preferences for services that include a next day delivery option (same WTP as long as a next day service is offered). This is in line with the qualitative questions where respondents suggested faster delivery services in countries with slower services (Italy, Poland). The WTP for a next day service is, in absolute and relative terms, generally higher for parcels than for letters. For the latter, a next day option seems to be predominantly important for big businesses. Businesses, and in particular businesses, expect uniform delivery standards throughout the country for letters and parcels, whereas households prefer a priority (J+1) treatment of local letters only. SMEs exhibit an important WTP for uniform prices. To a lesser extent, Swedish and Italian households favour uniform prices. With regards to service quality (percentage of items delivered on time), mainly big businesses care about the punctuality of letters, whereas small businesses prefer punctual parcel services. For households, the WTP for on-time delivery seems to be higher where the actual service levels are lower (Italy, Poland).

Figure 5.1 summarises the key findings.

Overall, the various consumer groups tend to have rather similar preferences on the sender and recipient side or end, whereas there are important differences in the services connecting the two sides or ends. Compared with SMEs and households, big businesses reveal a higher relative WTP for delivery quality (speed, on-time delivery). This may be an indication that big businesses depend much more on letter mail services to communicate with their customers. This is consistent with empirical letter mail volumes originating largely from big businesses.

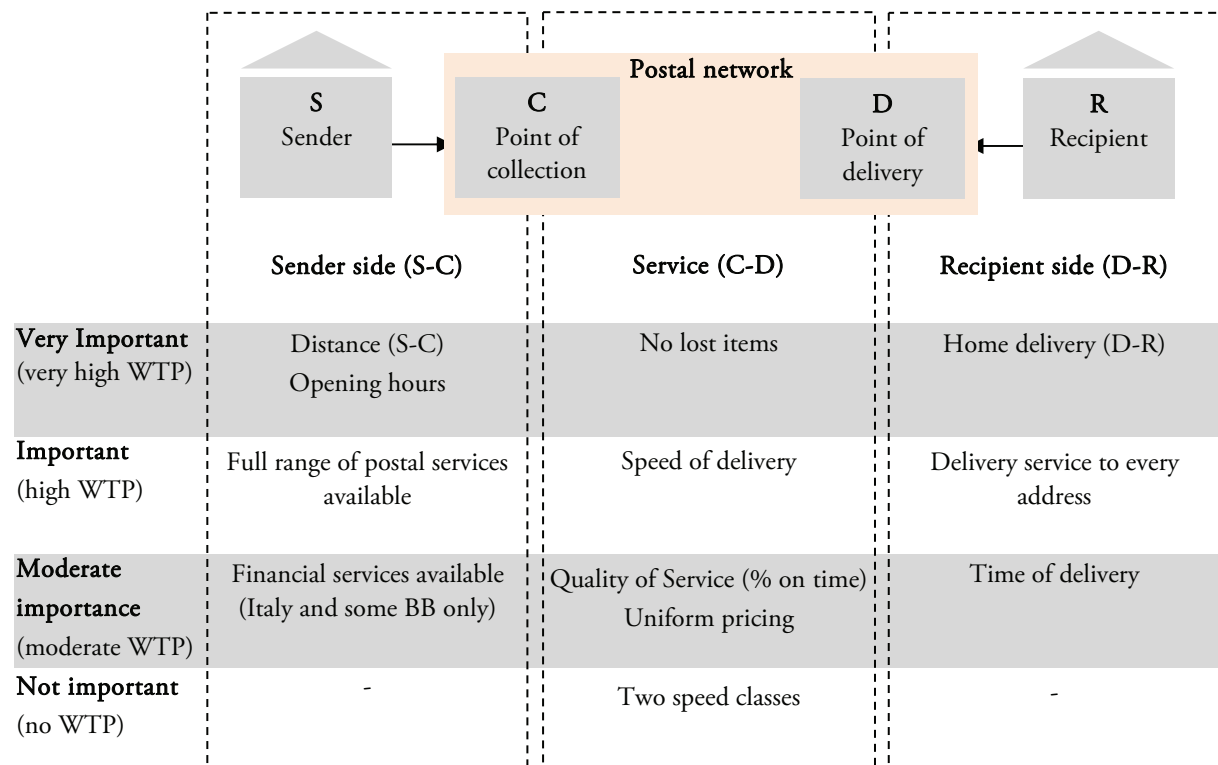


Figure 5.1: Importance of key postal service attributes for consumers

The findings are in line with the prediction of the economic framework. All attributes that provide either direct utility (reduce transaction costs) or indirect utility (network externalities in the two-sided postal market) have revealed substantial WTP estimates. In particular, all output-oriented attributes are valued by the customers. The results thus support the economic framework as a baseline to understand the expectations from postal services. Looking more closely at the data collected from the background questions, two issues deserve special attention.

First, it is of interest that WTP appears to be independent of sending and receiving patterns within consumer groups; net senders have about the same preferences as net recipients. This underpins the view that postal markets are two-sided and that network externalities are very important in this industry. Senders do care about the comfort provided on the recipient side, and the services offered on the sender side are important to recipients. Otherwise, net-senders would set higher priorities for service attributes that are relevant on the sender side and vice versa with net-recipients.

Second, we were interested in understanding whether e-substitution has affected consumer preferences. To account for the different degree of intermodal competition between letters (against electronic communication, “e-substitution”) and parcels (no alternatives) we have presented separate, but otherwise identical choices to the respondents (Experiment 1, letters; Experiment 2, parcels). In addition, we have collected extensive background information. In absolute terms, the WTP is much higher for parcels than for letters. In relative terms (against the price of the baseline product), there are still significant differences, albeit not that accentuated. As highlighted above, traditional letter service

attributes such as speed and on-time delivery remain important for big businesses mainly. This may indicate that SMEs and consumers already use different channels than big business to satisfy their most important communication needs.

Moreover, in our sample only 2% of business respondents and 6% of consumers had no internet access at all. The lowest figures are 19% for vulnerable people and 22% for ages over 65. Hence, a very large majority of every consumer group can use electronic substitutes to communicate. Against these rather high internet penetration rates, the result that big business still exhibit relatively high WTP for letter services is somewhat surprising. If this valuation persists, then this may be interpreted as good news for postal operators, as the substitution potential from sending households is limited (mainly a generational effect within small C2X flows).

A somewhat surprising side result is that e-substitution has not eroded the WTP for next day letter services. This could have been expected since electronic delivery takes place instantaneously. The results are confirmed by the background questions where faster delivery was suggested as a service improvement in the first place, with respondents under 35 being most likely to suggest faster deliveries. It remains open, however, whether respondents had letters or parcels in mind. An interpretation may still be that people who are used to instantaneous electronic delivery expect the same for physical deliveries.

People under 35 from Sweden and living in rural regions are most likely to buy goods online. This is consistent with internet penetration rates (99% under 35, 97% in Sweden) and the high opportunity cost of shopping for residents living in rural regions. We see that Italians are least likely to purchase goods online, which may be because of their relatively low WTA for lost items (low trust in domestic parcel services, see above). Based on our results and anticipated generational shifts, further increases in internet purchases and hence parcel flows are likely to happen.

5.2.2 Regulatory implications

Postal services are to be understood as a platform for the exchange of information and goods between citizens, consumers, businesses and governments. This platform will provide the highest utility for the economy if it ensures ubiquity and adequate accessibility on the sender and recipient side with a quality service connecting the two sides of the market. On the sending side, customers expect postal collection points within reasonable distance with customer oriented opening hours. On the recipient end, the focus is on a service to all addresses, preferably to the doorstep. The quality service should avoid any loss of items and, in a second priority, allow for fast deliveries throughout the country, possibly next day, at uniform prices. It can be expected that such services will be offered in the market place, where the WTP (accept) of customers for a service attribute exceeds the additional (avoided) cost of the postal operator for the foreseeable future. Where this is not the case (e.g. because of too high costs or problematic market forces) policy makers may opt for universal service regulations. Such interventions may be considered in particular in those market segments where the operators do not offer a service element even though its WTP exceeds its cost. As cost considerations are beyond the scope of this study, thus its implications for regulation remain on a high level.

Generally speaking, we have found rather minor differences in the basic valuation of postal service elements between small and medium businesses, and non-vulnerable and vulnerable

households. These are the consumer groups that can expect the least protection from a fully liberalised European postal market. As a consequence, we recommend a postal service policy should be focused on SMEs and households altogether. It is important to note that these two segments overlap in important aspects, with the preferences of big businesses including accessibility and uniformity on the sender and recipient ends of the market. Interestingly, big businesses even exhibit the highest WTP for on-time next day letter services.

This may allow for rather light, generic regulatory requirements.

As all output-oriented attributes exhibit significant and predominantly high WTP estimates, we recommend formulating any regulatory service requirements in an output-oriented way²¹ so the regulations are directly relevant to the customers. Moreover:

- Given the importance of proximity and convenience to customers, on the sender side, regulations may give floors for the distance (or time) of citizens to postal services and opening hours of those services.
- Given the importance of home delivery for recipients, regulators need to be careful when considering derogations on home delivery on the recipient end. Exceptions for home delivery (but not for the delivery per se) may apply where incremental delivery costs of a household exceed a certain ceiling.
- With regards to the service from the point of collection to the point of distribution, our study shows that low levels of lost items are extremely important to consumers. In member states where lost items are an issue, a first priority may be regulations that reflect consumers' needs in this area.
- If regulation to speed of service is required, our findings would suggest that such regulation could focus on one speed class as compared to two or more.

5.3 Methodological successes

Below we consider the methodological successes in the study:

- We felt that it was essential to have an overarching economic framework for understanding consumers' underlying needs for postal services to ensure a coherent study design; this framework was particularly helpful in informing the attributes to be included in the choice exercises, which was particularly challenging, given the range of postal services available to consumers. We believe that it is important to focus on service attributes experienced by consumers, e.g. speed of delivery, rather than input-oriented features which may not impact the service actually experienced by users, e.g. frequency of delivery.
- The survey methodology, using a phone-post/e-mail/fax-phone approach, worked well, ensuring that all respondents, including those without internet access, were able to participate in the study; also it meant that all respondents were able to see the choice exercises and have the support of an interviewer, if required.

²¹ As proposed in Jaag and Trinkner (2011b).

- We found that respondents were able to consider a broad range of postal service attributes in the choice exercises, for both letter and parcel delivery.
- The cognitive and pilot testing were important parts of the survey design process and the resulting questionnaire and choice exercises were improved as a result of the pilot testing process.
- The background information collected in the questionnaire provided useful and interesting supplementary data, which allowed a more nuanced understanding of the resulting valuations in some contexts.
- The results from the choice exercises provide monetary values (and their significance) for each of the different service levels tested in the choice experiments for Sweden, Italy and Polish business and resident consumers, providing detailed information on the value of these attributes for policy makers.

5.4 **Methodological considerations for future studies**

One of the objectives of this study was to develop a methodology and learn lessons from the application of that methodology in at least three member states. The application of the methodology developed in this study has identified a number of issues, which are discussed below.

Were the sample sizes big enough?

The standard errors of the resulting valuations generally are quite large, particularly when we take account that respondents have provided multiple choice observations. In this report we present both the resulting valuations and their 95% confidence interval because these are the usual standards for academic publications, but perhaps this level of confidence is more stringent than what is required by policy makers in this domain. However, even 90% confidence levels would still remain large.

In addition to having a wide range of possible values, having large standard errors also means that we are less likely to observe significant differences in valuations for specific attributes across different market segments. More precise estimates would mean that studies would be more likely to identify differences in preferences for different segments, for example by age or income group, and understanding such differences may be important for policy makers.

We note that the valuation measures would also be improved with better measures of cost sensitivity, which may have occurred with investigation of a larger price range, and this is discussed further below.

We also consider the impact of sample size on the reliability of the valuation estimates. For this study, we aimed to collect (and collected) 125 business interviews and 350 resident interviews per country. We pooled the business observations across the three countries, because we found that pooling the data did not result in a significant reduction in model fit. However, we developed separate models for SMEs (n=225) and big businesses (n=150) because preferences for services differed significantly between these segments. We did not pool the resident interviews across countries, so each resident model was based on information from 350 observations.

Given the importance of businesses in the postal market, particularly because of the volumes of letters they send, we recommend there should be larger sample sizes in future studies. In comparison to this study, the Accent (2008) study for Postcomm in the UK contained 350 business interviews, which we believe would provide a better basis for quantification of business postal preferences. We recommend that separate quota samples for SMEs and big businesses should be specified. The Accent (2008) study also included 550 resident interviews, which again would lead to more reliably estimated valuations for residents. Again, we recommend that quotes for vulnerable and non-vulnerable residents should be specified separately.

Did we test a large enough cost range?

Examination of the trading at different cost levels indicates that a substantial proportion of resident and business respondents are choosing the most expensive options in the SP choice exercises. This means either that the resulting cost sensitivity may be too low, with a risk that the resulting valuations are high, or that other attributes have dominated the choice experiments (e.g. lost items). Better estimated cost sensitivity would also reduce the standard errors of the resulting valuations. In future studies we recommend it is worth considering testing larger price differences as well as looking at the influence of dominant alternatives, which is discussed further below.

Were the respondents able to deal with the two-class options?

The results from the first and second experiments indicate that businesses prefer next day delivery or a two-class service including next day delivery. Businesses, particularly large businesses, place a reasonably negative value on two-day and three-day services where no next day option is in place. However, speed of delivery seems to be less important to residential consumers. Also, we see that large businesses do not favour non-uniform delivery options, whereby letters or parcels in an urban area may be delivered the next day whereas deliveries to more rural areas may take longer, compared with a single class next day service; residential respondents and SMEs are more ambivalent on this issue.

However, we were somewhat surprised to see that neither business nor residential respondents showed a preference for a two-class service including a next day service option, compared with a next day service. One reason may be that respondents found these options more complex than the one-class options. This could be tested in future studies through qualitative research with groups of business and residential consumers. We also saw this pattern in the pilot survey analysis and at that stage amended the calculation of costs for the two-class options to ensure that we presented options where the two-class costs would be both less expensive and more expensive than the one-class options. Reviewing the costs in the main survey confirms that the costs of the two-class options were indeed sometimes cheaper and sometimes more expensive than the one-class costs.

The most successful operators to deal with volume per capita in Europe all have two-class options, so this is an important issue that requires more research.

Was the percentage of lost letters and parcels dominant in the choice exercises?

The most important service attribute in the first and second experiments is the percentage of letters and parcels which are lost. We increased the range of lost letters and parcels tested in the choice experiments after the pilot survey to make the choices “more different” after comments from respondents that too many of the choices looked the same. Perhaps in future smaller ranges could again be tested (because we made other changes after the pilot survey, including dropping the Saturday delivery attribute). Alternatively, increasing the prices in the experiments may help to make the lost letters and parcels less dominant, but they will still be important when compared to other attributes.

Do consumers value guaranteed time of delivery?

We see evidence that businesses value delivery by 13:00 (or not later than 17.00) for letters and parcels. In contrast, time of delivery for letters did not seem to matter to residents, except in Poland where residents seemed to prefer deliveries during the day compared with early deliveries. We also see preferences for delivery of packages during the day, in Poland and Italy – in retrospect it would have been interesting to collect information on whether the respondents worked or were at home during the day and if they purchased parcel items where they had these delivered to their home (or perhaps to their work).

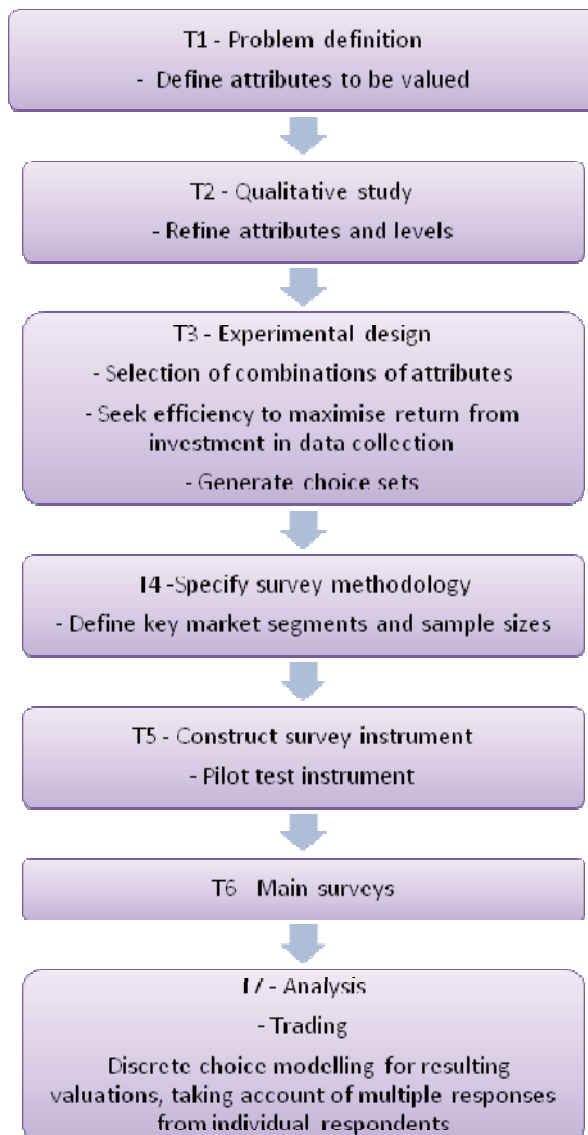
Did the survey collect enough respondents who did not have internet access?

Although as part of the model analysis we looked to examine whether internet access influenced consumers’ preferences for postal services, we did not find any significant differences between those respondents with internet access and those without.

However, we also observe that only 2% of business respondents did not have access to the internet at work and 6% of consumers had no internet access at all, with nine out of ten having access at home. Although this varied somewhat across the countries, e.g. in Sweden 96% of consumers had internet access at home, in Italy the figure was 91% and in Poland much lower at 86%, in general the levels of internet access was higher than we were expecting, particularly in Poland and Italy. This may have been because people with internet access were more amenable to undertaking the surveys (because it could be done within one single telephone call). Therefore, if using a phone-fax/post/e-mail-phone approach in future we recommend specifying a quota for respondents who do not have access to internet, which would allow a better chance of identifying differences in postal needs between those with and without internet access.

5.5 Toolkit for measuring consumers' preferences for postal services in other member states

In this section we provide a summary of the steps required to measure consumers' preferences for postal services using SP choice methods, and provide insight into the key learning for each stage that has resulted from this study. This assumes that the key area of interest is valuation of components of the postal service.



T1 – Problem definition

The first step is to define the valuation problem – what aspects of the postal service need to be understood and valued and for what purpose. The potential uses of the study need to be borne in mind in designing the study and this can help to concentrate resource on the more essential elements. This study, like many others, focused on measuring consumers' preference for postal service attributes. Others, for example as undertaken by Accent (2008), aimed to quantify the value of regulating the service level in the USO. Moreover, one can separate out (as in this study) letter and parcel mail services. Services offered by post offices may also need to be considered.

T2 – Qualitative study

The second, and maybe the most important, step is to define the attributes and levels to be tested. In the current study we felt that it was essential to have an overarching economic framework for understanding consumers' needs for postal services to ensure a coherent

study design. This framework was particularly helpful in informing the attributes to be included in the choice exercises. It is often helpful to review other studies to examine what work has been carried out in the area in the past. We also recommend that views from stakeholders should be incorporated and qualitative research undertaken with respondents to verify the importance of the attributes, to investigate the range of attribute levels that can be tested and ensure that the descriptions used in the choice exercises are clear.

We note that this study did not contain a separate qualitative stage with consumers, for example focus groups, but previous studies from a range of countries were examined and stakeholders from all three countries were consulted to ensure that the design encompassed all relevant areas. Furthermore detailed cognitive testing with respondents was undertaken as part of the pilot survey process. The amount of interaction between all parties in the study indicates clearly how critical it is to ensure that *all* the relevant attributes are included and that the levels of each provide a sufficient difference in offering that respondents can understand. The design work needs to carefully appraise the attribute and level descriptions to ensure they are unambiguous to respondents.

In this regard, a key challenge for this study was the specification of price levels. The cost vehicle in the choice exercises was the price of a stamp, which is how most consumers pay for postal services. We note, however, that other cost vehicles have been used, for example NERA (2009) used additional taxation as the price vehicle. We tested six price levels in the design, including price reductions (–30%) and increases (up to 150%), to ensure a wide range of costs were tested in the experiment. It is noted that the range of price levels was increased after the pilot, where we observed a large proportion of respondents choosing the highest cost alternatives. However, detailed analysis during the main survey indicated that a large proportion of respondents were still choosing the highest cost alternative and therefore we recommend considering even larger price changes in future studies.

T3 – Experimental design

Once the attributes have been defined it is possible to develop the experimental design. Key considerations at this stage are: how to group attributes (if more than one experiment is required), and how many alternatives and choice exercises to present to respondents. We recommend the use of efficient experimental designs to maximise the return of investment in data collection. It is important to ensure that the choice sets are understandable and clear, and not too difficult for respondents. This is something that should be investigated as part of the pilot testing of the choice experiments. It is also essential to develop introductions to the choice exercises to help respondents understand and frame the task. It may be necessary to deal with issues of altruism and so on in the introduction to the choice tasks. For example in this study we specifically asked respondents to consider their own needs, not those of other more vulnerable members of society, as the study included representation from vulnerable citizens. Lastly, the design needs to ensure that combinations of attribute levels will appear sensible to respondents.

T4 – Specify survey methodology

The survey methodology needs to be a cost-effective way of collecting data from a sample that is representative of the target audience, be they consumers or businesses.

A range of data collection methodologies is available; from self-completion approaches such as postal or online to interviewer administered such as telephone or face-to-face. The choice of approach for any specific study will depend on a number of factors such as:

- budget (face-to-face being typically the most expensive method)
- the need for interviewer administration (especially useful if the study is complex or includes more vulnerable people who may need help)

- the need for respondents to look at choices (in this study we used a telephone approach but sent choice material to respondents by post or email)
- internet penetration (in countries where internet penetration is low this methodology will not provide a representative sample).

If the study is taking place across more than one country it is recommended that the approach is consistent in order to allow data to be compared and pooled if necessary.

The sample sizes need to allow for all cells of interest to be analysed separately. On the basis of this study, we recommend there should be 300–400 interviews with businesses and 500–600 interviews with residents in order to obtain robust valuations. We recommend that quotas be set for SMEs and big businesses, and for vulnerable and non-vulnerable residents, and that quotas be specified for internet access, to ensure that those with and without internet access are included in the study. Other examples of groups which may need to be represented explicitly in the sample include:

- different age groups
- different socio-economic groups
- people living in different regions
- urban and rural locations
- different industry sectors.

T5 – Construct survey instrument

The next step is to develop the survey instrument, ensuring that all necessary background data is collected during the survey. Background information may include questions of usage of postal services (frequency, volume, sending and receipt, post office visits, services used and so on), attitudes toward the services provided, demographic information, urban or rural location, and classification of business. Any background data can be used in analysis and interpretation of the choice experiment results. We also recommend including questions on respondents' understanding of the choice exercises, which can be used in the analysis to exclude those who didn't understand the choice exercise. We also recommend obtaining information on the interviewers' view of each respondent's ability to undertake the exercise for the same reason.

It is essential to pilot test the survey. Pilot surveys may be conducted through face-to-face interviews, cognitive interviews and formal pilot surveys. Cognitive testing (before a pilot survey) is becoming increasingly advocated for the detailed more qualitative assessment that it can provide of the questionnaire and the attribute level descriptions. The formal pilot surveys should test:

- the recruitment process
- survey response rates
- the clarity and flow of the questionnaire
- the appropriateness of the language used
- the accuracy of all routings

- the SP experimental design and understanding of the choice exercises
- the interview duration.

Data from the pilot tests should be used to develop choice models to ensure that all coefficients can be identified. Detailed analysis of trading against cost levels and so on should be analysed. Recommendations on any changes to the methodology and questionnaire can then be made.

T6 – Main surveys

The main surveys will be collected using the questionnaire (T5) and survey methodology (T4). It is important to ensure that the respondent is an appropriate person to take part in the survey. It may, for example, be sensible to exclude those who work in the postal sector. In business interviews, screening questions should be included to ensure that the person answering has responsibility for post within their company. It is important to allow adequate time for data collection especially where a phone-post/email/fax-phone methodology is being used and to ensure that account is taken of any national holidays during the fieldwork period that may impact on completion of interviewing. It is recommended that quotas are set to ensure that the sample population is representative against key metrics.

T7 – Analysis

Once the data is collected the main analysis can begin. Analysis of the background questions will provide an understanding of the characteristics of the sample, which is helpful when developing the discrete choice models.

We also recommend examining respondents' understanding of the choice tasks and trading patterns, the latter to understand to what extent respondents are making trade-offs at the different attribute levels.

Discrete choice models can be developed from the choice data (see Box 2.2). One of the key issues when developing the choice models is how to treat different market segments, specifically whether separate models should be developed for the different segments or whether the data should be pooled. In this study we developed models for the key market segments and then examined the differences in model fit when pooling data, incorporating segment-specific model parameters if warranted (using the likelihood ratio test – see Train (2003)). If significantly different coefficients are not observed between segments we recommend pooling the data to improve the reliability of the valuation estimates. When pooling datasets account should be taken of differences in error variation between the datasets (see Bradley and Daly, 1991).

It may be important for policy makers to understand how the service attribute values vary depending on the respondent's characteristics and situation. We also believe that it is important to examine how cost sensitivity varies across the sample, for example in relation to income.

When the best models have been identified it is important to take account of the repeated nature of the choice data – that a single respondent has provided multiple observations which cannot be considered independent. Jack-knife and bootstrap methods are practical

solutions to this problem, ensuring that the t-ratios produced by the models are a realistic statement of the true errors of the model parameters.

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APPENDICES

Appendix A: Description of USO in the EU and member states

The International Post Corporation (IPC) publishes an annual report providing a view of the regulatory and legislative environment in the European Union and in each of the member states of the European Union (IPC, 2010). The following tables are descriptions for each element of the USOs, as defined by IPC.

Table A.1: Definition and products of USO

EU and member state	Description
EU	The national regulatory authorities may increase the weight limit of universal service coverage for postal parcels to any weight not exceeding 20 kg and may lay down special arrangements for the door-to-door delivery of such parcels.
Austria	The USO comprises the clearance, transport, sorting and delivery of postal items up to 2 kg, of post packages up to 20 kg and services for registered and insured items.
Belgium	The collection, sorting, transport and distribution of postal items up to 2 kg and parcels up to 10 kg (domestic and international). Delivery of postal parcels received from other EU member states up to 20 kg. Insured mail and registered mail service.
Bulgaria	Items of correspondence up to 2 kg, small parcels up to 2 kg, direct mail up to 2 kg, printed matter up to 5 kg, cecogrammes up to 7 kg, parcels and money transfers.
Cyprus	Postal items up to 2 kg and parcels up to 20 kg.
Czech Republic	Letter mail up to 2 kg, parcels up to 15 kg, and money orders, registered and insured items.
Denmark	Addressed mail up to 2 kg, newspapers, magazines, registered and insured – except business-to-business -up to 20 kg, items for the blind up to 7 kg (defined in Executive Order No. 1312 of 14 December 2004).
Estonia	According to the Postal Act, which was adopted in 6 April 2006 amended in 10 December 2008 and in force from 1 April 2009, the USO contains collection and distribution of domestic and cross-border letter mail items up to 2 kg, domestic and cross-border parcels up to 20 kg and forwarding of registered and insured items domestically and internationally.
Finland	Domestic, cross-border and international service. Addressed letter mail (1st class) up to 2 kg, parcels up to 10 kg (postal parcel 16), international parcels (economy parcel) up to 20 kg (arriving in the country up to 30 kg) including registered and insured items.

EU and member state	Description
France	<p>La Poste will provide all users across the whole of the national territory with permanent postal services that meet established quality standards and that these services shall be offered at affordable prices for all users. Universal postal service shall cover provision of domestic and cross-border postal services for items of correspondence weighing up to 2 kg, including:</p> <ul style="list-style-type: none"> – ordinary individual and bulk mail, where individual domestic mail shall include both priority and non-priority items – registered items with or without acknowledgement of receipt – newspapers and periodicals weighing up to 2 kg – catalogues and other printed matter weighing up to 2 kg – postal packages weighing up to 20 kg, sent singly to the public as ordinary or registered items and excluding postal services provided to businesses under contracts covering multiple items – insured items of a value below the limit determined by a decree of the Minister for Postal Services – redirection of the postal items (under the USO). <p>The universal service also contains provisions for the blind and partially sighted persons. Literature for the blind in the form of ordinary or registered items is free of charge when subject to the conditions laid down by an order of the Minister for Postal Services.</p>
Germany	Conveyance of letter post items up to 2 kg (including registered, insured and cash-on-delivery items), newspapers and magazines, addressed parcels up to 20 kg.
Greece	The collection, transport, sorting and delivery of items of correspondence up to 2 kg (registered and insured mail included) and parcels up to 20 kg.
Hungary	Domestic and cross-border letters (item of correspondence), direct mail, printed matters (newspaper, periodicals and books) up to 2 kg, domestic and cross-border parcels up to 20 kg, literature for the blind up to 7 kg. USO includes also home delivery of parcels. Courier and express service, integrated postal service and document exchange are not part of the universal service.
Ireland	The clearance, sorting, transport and distribution of postal items up to 2 kg, packages up to 20 kg, services for registered items and services for insured items within the state and to and from all countries which as signatories to the Convention of the UPU declare their willingness to admit such items whether reciprocally or in one direction only. The universal service shall cover both national and cross-border services. Non-USO services include, for example, Express Post and Courier Post items.
Italy	Letter mail (non-express) up to 2 kg; ordinary parcels (non express) up to 20 kg; registered and insured mail, direct mail, press/editorial items, electoral items.
Latvia	<ul style="list-style-type: none"> – Collection, sorting, carriage and delivery of such inland and cross-border letter-post items (including registered and insured items), which do not exceed 2 kg in weight – collection, sorting, carriage and delivery of such inland and cross-border postal parcel items (including registered and insured items), which do not exceed 20 kg in weight. – Delivery services of the subscribed press publications.
Lithuania	USO contains collection and distribution of letter mail items up to 2 kg, parcels up to 10 kg, registered and insured postal items; also delivery of postal parcels up to 20 kg received from EU member states.
Luxembourg	The collection, sorting, transport and distribution of postal letters up to 2 kg, parcels up to 10 kg, registered items and services of insured items (domestic and international).

EU and member state	Description
Malta	Article 17(5) of the Postal Services Act: universal service shall include the following minimum facilities: <ul style="list-style-type: none"> – the clearance, sorting, transport and distribution of postal articles up to 2 kg – the clearance, sorting, transport and distribution of postal parcels up to 20 kg – services for registered articles – services for insured articles within Malta and to and from all countries which, as signatories to the Convention of the Universal Postal Union, declare their willingness to admit such articles whether reciprocally or in one direction only – a basic counter service throughout Malta.
Netherlands	The Dutch Postal Act requires TNT Post B.V. to transport domestic single items of correspondence and single items of printed matter up to 2 kg and single postal parcels up to 10 kg. Cross border mail and parcels are always part of the USO. The USO also includes registered and insured items, judicial documents (domestic only), and items for the blind.
Poland	According to the postal law passed in July 2003 and amended in 2004, USO contains collection and delivery mail up to 2 kg, including: <ul style="list-style-type: none"> – registered mail and items with declared value, domestic parcels up to 10 kg – items with declared value, inbound parcels up to 20 kg, insured and registered items, mail for the blind persons and postal orders.
Portugal	The acceptance, carriage, distribution and delivery of correspondence, books, catalogues and other periodicals, weighing up to 2 kg; parcels up to 20 kg; registered and insured items (domestic and international).
Romania	1) Clearance, sorting, transport and delivery of the letter-mail items, printed-matter items, domestic and cross-border and domestic direct mail items, , weighing up to 2 kg (including 2 kg) 2) Clearance, sorting, transport and delivery of parcel items, domestic and cross-border, weighing up to 10 kg (including 10 kg) 3) Distribution of postal parcels between 10 to 20 kg (including 20 kg), including those sent from outside Romania to an address located in the Romanian territory 4) Registered item service for: <ul style="list-style-type: none"> – letter-mail items, domestic and cross-border, weighing up to 2 g (including 2 kg) – parcel items, domestic and cross-border, weighing up to 10 kg (including 10 kg) – parcels weighing 10–20 kg (including 20 kg), sent from outside Romania to an address located in the Romanian territory 5) Insured item for: <ul style="list-style-type: none"> – letter-mail items, domestic and cross-border, weighing up to 2 kg (including 2 kg) – parcel items, domestic and cross-border, weighing up to 10 kg (including 10 kg) – parcels weighing 10–20 kg (including 20 kg), sent from outside Romania to an address located in the Romanian territory *Regarding the ANCOM (National Authority for Communications) President’s Decision no.293/2009
Slovakia	According to the 2001 Postal Act amended, Universal Service is a “set of permanent postal services provided at affordable prices under the same conditions and at a given quality level, accessible to all users at access points”. USO contains collection and distribution of letter mail up to 2 kg, domestic parcels up to 10 kg and inbound cross-border parcels up to 20 kg. The postal service “registered” and “insurance” is also included in the USO. As regard Art. 18.3 of the Postal Act, the Postal Regulatory Office may, in the postal licensee, increase a weight limit of postal service up to 20 kg. The Postal Regulatory Office has set up the 15 kg limit for domestic postal parcels. It also set up some supplementary services linked with registered, insured and other services as USO. Newspapers and periodicals do not form part of the USO. Money orders are however included.
Slovenia	Postal items up to 2 kg, postal parcels up to 20 kg (except business parcels), registered and insured postal items services, postal items services for the blind and partially sighted persons.

EU and member state	Description
Spain	The Spanish legislation is based on the Postal Act 24/1998 of 13 July 1998: – letter mail up to 2 kg including registered mail and insured money order – parcels up to 10 kg – Direct mail, newspapers, books, periodicals and catalogues if sent as letter mail or parcels.
Sweden	All letter mail (including addressed mail, newspapers, catalogues and books) and parcels up to 20 kg.
United Kingdom	At least one delivery to home or premises of each individual/person in the UK and at least one collection from each access point every working day. A service of conveying, including the incidental services of receiving, collecting, sorting and delivering postal packets up to 20 kg (and whose dimensions fall within permitted limits) at affordable tariffs that are uniform throughout the UK. Provision of a registered post service, also at affordable and uniform prices. In Royal Mail's current licence the regulator (Postcomm) has attempted to define the services that should be provided in the discharge of the USO: – first class stamped mail – first class metered mail – second class stamped mail – second class metered mail – standard parcel – Airmail Europe – Airmail World Zone 1 – Airmail World Zone 2 – surface mail – Special Delivery (next day) non-account Bulk mail – Cleanmail OCR 1st class – Cleanmail CBC 1st class – Cleanmail OCR 2nd class – Cleanmail CBC 2nd class – Mailsort 1400 1st class – Mailsort 1400 Residues 1st class – Mailsort 1400 2nd class – Mailsort 1400 Residues 2nd class

Source: IPS (2010).

Table A.2: Number of post offices required

EU and member states	Description
EU	Directive 97/67/EC. To this end, member states shall take steps to ensure that the density of the points of contact and of the access points takes account of the needs of users.
Austria	Since December 2009, the new "Postmarktgesetz" determines both the minimum number of 1,650 postal branches (operated by Austrian Post or others) and their density in Austria as well.
Belgium	The Fourth Management contract between De Post-La Poste and the Belgian state contains a list of density criteria: the total number of postal service points is to each substantially 1,300. In exceptional cases, it may be below that number, subject to specific procedures to follow. Postal service points may be post offices (managed by post-personnel), haltes (managed by post-personnel, but with restricted opening hours) and postshops (franchised offices, managed by third parties). Each postal service point should provide a basic assortment of public services whereas a post office should be available within 10 km with a full service offering. Furthermore, there should be at least one post office per municipality.

EU and member states	Description
Bulgaria	At least one post office in municipalities with more than 800 inhabitants.
Cyprus	No specific obligation.
Czech Republic	Customers should not be more than 2 km from the nearest post office.
Denmark	<p>The post office network is divided into the following operations:</p> <ul style="list-style-type: none"> – Post Denmark self-operated post offices with full service – postal services provision through partnership with a private company with full service (postal shops or outlets, a shop with limited postal services) – a shop with a limited postal function operated by a local merchant. Limited services concern the delivery of letters, extradition of reported shipments (letters and packages), and sales of stamps. <p>Executive Order No. 1312 of December 2004 states that “the concession holder shall ensure the access at any time by all users to the provision of postal services of a high quality and at reasonable prices”. To this end, the concession holder shall retain a nationwide network of postal service outlets. In each municipality there shall be at least one postal service outlet capable of providing all postal services and handling incoming and outgoing payments. In towns with more than 5,000 inhabitants there shall be at least one full-service outlet. The maximum distance for the users to a service outlet may not exceed 5 km (measured in a straight line), however. Existing full-service outlets cannot be closed down by the concession holder in towns with between 2,000 and 5,000 inhabitants, unless the town is endowed with a new service outlet. Postal service outlets in minor towns and rural areas cannot be closed down if this implies that the distance for users to the nearest service outlet thereby will be increased by more than 10 km (measured in a straight line). Once a year, the concession holder shall present a report to the Road Safety and Transport Agency (Færdselsstyrelsen) on present and expected developments in the network of postal service outlets.</p>
Estonia	By the valid legislation there should be at least one post office and additional post offices per 20,000 inhabitants in cities. In rural areas, there should be at least one post office per rural district and additional post offices if there are more than 2,500 inhabitants.
Finland	The USP shall maintain at least one facility providing universal service in each municipality and shall take into account the needs of the municipality.
France	Post office branches providing public access to services covered by the universal service, other than bulk mail, and to information about these services must be so located that at least 99% of the national population and at least 95% of the population of each department is less than 10 km from a post office branch and all communes with over 10,000 inhabitants have at least one post office branch per 20,000 inhabitants. All post office branches shall be accessible for the handicapped by 2015 the latest. Additional counter network requirements (following the requirements of the La Poste’s public service mission of regional planning) do not permit more than 10% of a <i>département</i> ’s population to be further than 5 km, or more than 20 minutes’ car drive under normal driving conditions for the area concerned, from the closest La Poste counter. The 2010 postal bill requires that the postal network be made of at least 17,000 contact points.
Germany	12,000 fixed location facilities. At least one permanent facility in any municipality with more than 2,000 residents. Customers in any municipality with more than 4,000 residents or in adjoining built-up areas shall in general be able to reach a permanent facility within no more than 2,000 metres. Additionally, in every district (Landkreis) one permanent facility shall be located per area of 80 km ² . All other locations must be served by mobile postal service units.
Greece	Hellenic Post is required to provide an adequate number of post offices.
Hungary	In every settlement with more than 600 inhabitants, the USP should provide at least one postal outlet. But in towns with more than 600, but less than 1000 inhabitants the postal outlet can be replaced by a mobile post service, if a contract is made with the town’s local government to that effect. Settlements with less than 600 inhabitants may either be served by a postal outlet or a “mobile service” (either mobile post offices or service provision by rural postmen). In settlements having more than 20,000 inhabitants, there must be at least one postal outlet for each 20,000 inhabitants. The postal outlets have to be placed in such a way that they cannot be further than 3,000 air metres from any building in the settlement and the distance between two postal outlets in a given settlement may not be more than 6,000 air metres. The NRA may

EU and member states	Description
	exempt the universal postal service provider, at its request, from this obligation if it is justified by the extraordinary geographical location and/or features of the town and if exemption does not unreasonably infringe the interests of the affected users.
Ireland	No specific numbers required although under Section 4(1) of S.I. No. 616 of 2002, the density of the points of contact must take account of the needs of users. (However, this is in relation to the mails business.) ComReg has directed that “there should be a facility to buy postage stamps, appropriate to the rates for mail in standard envelopes, at a retail outlet in the vicinity of every pillar/wall box in town areas. In this context vicinity can be defined as within 100 meters of the nearest retail outlet which need not be a post office and may be automated. Existing arrangements whereby postmen in rural areas sell stamps should be retained.”
Italy	Ministerial Decree 07/10/08 states criteria for post office distribution in the national territory.
Latvia	There should be at least 30 universal post offices in the city of Riga, and one universal post office in each other municipality. The universal post office may be mobile in the local municipal territories or populated area, where the number of population is up to 1,000 residents and the density of population is less than 10 per sq. km.
Lithuania	No standard. However certain requirements regarding closing of post offices are listed in “Characteristics of the public postal network of the universal service provider” (approved by the Minister of Transport and Communications on 20 October 2004). Lietuvos paštas operates 887 universal postal services provision points (out of them 773 stationary post offices, 10 sub-offices, and 104 universal postal services provision points served by 21 mobile post offices) within the territory of Lithuania.
Luxembourg	The density of postal access points must match customer needs.
Malta	Refer to MaltaPost p.l.c. Licence (http://www.mca.org.mt/). Access points may only be closed or moved in agreement with the Malta Communications Authority (MCA), the local regulator, which may also make provision for the opening of new access points. MCA Decision Notice “Maltapost Plc’s Universal Service Obligations – Accessibility, Daily Delivery, Provision of Information” published on 10 September 2008 lays down a minimum requirement of 59 postal outlets.
Netherlands	In residential centres with more than 5,000 inhabitants, there must be one postal outlet within a 5 km radius. If the number of residents exceeds 50,000, an additional service location shall be present for every 50,000 residents
Poland	– At least 8,240 operator points of contact shall be established across the country and located taking into account the demand for services in particular area. Ordinance of Minister of Infrastructure as of 20 October 2009 on the conditions for provision of universal service allows USP to choose the type of point of contact (mobile post or fixed postal outlet) and network density in rural areas regarding the demand for postal services. As of the end of November 2009, there were 8,430 outlets existing. One point of contact shall cover across the country on average: – 7,000 inhabitants in urban areas – each area of 85 km ² in rural areas.
Portugal	The USP has the obligation to maintain and develop the quality and quantity of the existing postal network, according to an agreement to be established with the regulator. Changes in the post offices network (closings, openings and opening hours) must be communicated to the Regulator.
Romania	Regarding Art. 15 ANCOM Decision 293/2009 until 31 December 2012: C.N. Posta Romana S.A. has the obligation to ensure staffed access points in all basic administrative units, which have at least 1,500 inhabitants, in which parcels, printed matters and letter mail items with non-standard sizes, also registered mail may be posted.
Slovakia	A post office is required to be established in each municipality with more than 2,500 inhabitants and in each residential unit with more than 5,000 inhabitants.

EU and member states	Description
Slovenia	The USP must ensure such number of access points and their geographical coverage throughout the territory of the Republic of Slovenia that takes into account any reasonable postal user requirements and which enables the USP to perform these services in accordance with the law and the postal regulations. The USP meets the above mentioned conditions if a permanent access point, organised as a post office or contractual post office, covers: <ul style="list-style-type: none"> – 3,800 households in localities with more than 50,000 households – 3,500 households in localities with 20,000 up to 50,000 households – 3,000 households in localities with 3,000 up to 20,000 households – 1,500 households in localities with 1,000 up to 3,000 households – 500 households in localities with less than 1,000 households. The USP may in areas that do not meet the criteria in the previous paragraph ensure a special organisational form of the access point.
Spain	No requirements. The USP must guarantee the provision of the universal service in the whole national territory.
Sweden	Services must be accessible to everyone and be provided at a reasonable distance from one's home or workplace. The density of the access points must take into account the needs of users.
United Kingdom	There is a licence requirement to provide facilities such that the premises of not less than 95% of users or potential users are within 5km of an access point capable of receiving the largest relevant postal packets and registered mail, and that the premises of not less than 95% of users in each postcode area are within 10 km of such access points. These facilities are currently provided by post offices.

Source: IPS (2010).

Table A.3: Quality requirement transit times

EU and member states	Description
EU	Directive 97/67/EC Quality Standards shall focus, in particular, on routing times and on the regularity and reliability of services. These standards shall be set by: <ul style="list-style-type: none"> – the member states in the case of national services, – the European Parliament and the Council in the case of intra-Community cross-border services (see Annex). Future adjustment of these standards to technical progress or market developments shall be made in accordance with the procedure laid down in Article 21.
Austria	Letters: J+1 95%; J+2 98% Parcels: J+2 90%
Belgium	According to the Fourth Management contract and secondary postal legislation, a quality of service basket comprising the main single piece products of the universal service sets the level of overall delivery time to reach (95% of the items to be delivered on time). This overall "index" constitutes an element for the price cap ("quality bonus").
Bulgaria	J+1 priority 80%; J+2 80%; J+3 95%
Cyprus	<ul style="list-style-type: none"> – 1st class inland correspondence: J+1 90%; J+3 97% – 1st class cross-border correspondence – outbound: J+3 85%; J+5 97% – 1st class cross-border correspondence – inbound: J+3 85%; J+5 97% – An independent monitoring of the quality services is currently implemented by the USP in cooperation with the NRA. Results are published by the NRA.
Czech Republic	First class J+1: 90% (independent monitoring is required. Quality of service results were published in 2008).
Denmark	Priority: J+1 95%. Possibility for penalty payment to the state if quality of service is below 93%.

EU and member states	Description
Estonia	<ul style="list-style-type: none"> – 1st class mail items: 90% J+1 in towns and rural areas. – 2nd class mail items: 90% J+3 (by making an agreement with the customer, the USP shall implement inferior quality – longer delivery time and lower price than 1st class mail items). According to the Postal Act there is an obligation to monitor the quality of services done carried out by the independent body.
Finland	Priority: J+1 85%; J+2 98%
France	<p>The quality of service objectives of La Poste are set by ministerial order.</p> <p>The objective for 2009 is the following:</p> <ul style="list-style-type: none"> – domestic priority mail: 84% J+1 (95.5% J+2) – European trans-frontier mail: 88% J+3 (97% J+5) – domestic parcel : 86% J+2 (95% J+3).
Germany	<ul style="list-style-type: none"> – Letter post items: J+1 80%; J+2 95% (not required for items subject to a minimum of 50/mailling) – Parcels: J+2 80%
Greece	Priority: J+1 87%; J+3 98%
Hungary	<p>Transit times:</p> <ul style="list-style-type: none"> – priority letters: J+1 85%; J+3 97% – non-priority letters, printed matters and direct-mail: J+3 85%; J+5 97% – parcels: J+1 80%; J+3 95% – letters within EU: J+3 85%; J+5 97%. <p>Other requirements:</p> <ul style="list-style-type: none"> – Maximum average queuing time in case of universal services is 15 minutes in all postal offices and at any time; lost/destroyed recorded items: less than 0.06 per 1,000; damaged recorded items: less than 0.05 per 1,000; visibility of date-stamps: less than 15 per 10,000 can be invisible.
Ireland	Target: national mail (J+1) 94% and (J+3) 99.5%
Italy	Ministerial Decrees 01/10/08 and 23/11/09 state the quality targets related to delivery times of postal items. Quality sanctions: Poste Italiane can be fined in case of failure to meet the quality targets, relating to the percentage difference of performances from the targets.
Latvia	<ul style="list-style-type: none"> – Class A: J+1 97% of domestic letter post (from 1 January 2006) – Class B: J+3 97% of domestic letter post (from 1 January 2006)
Lithuania	From 1 September 2007, AB Lietuvos paštas introduced second mail category for domestic mail and now provides both priority and non-priority domestic mail services. Domestic priority: J+1 85%; J+3 97% international priority: J+3 85%; J+5 97% The Communications Regulatory Authority (CRA) organises performance monitoring for the universal postal services and publishes the results once a year. www.rrt.lt
Luxembourg	Priority: J+1 95%; J+2 99% (all)
Malta	<p>Depicted in MCA's Decision Notice "MaltaPost p.l.c. – Quality of Service Requirements" dated 6 December 2007</p> <p>Financial year 2007/8:</p> <ul style="list-style-type: none"> – ordinary mail: J+1 92%; J+2 97%; J+3 99% – bulk mail (from Apr 2008): J+1 92%; J+2 97%; J+3 99% – registered mail and parcel post: J+1 97%; J+2 98%; J+3 99% <p>Financial year 2008/9:</p> <ul style="list-style-type: none"> – ordinary mail: J+1 93%; J+2 97%; J+3 99% – bulk mail: J+1 93%; J+2 97%; J+3 99% – registered mail and parcel post: J+1 97%; J+2 98%; J+3 99% <p>Financial year 2009/10:</p> <ul style="list-style-type: none"> – ordinary mail: J+1 93%; J+2 98%; J+3 99% – bulk mail: J+1 93%; J+2 98%; J+3 99% – registered mail and parcel post: J+1 97%; J+2 99%; J+3 99%
Netherlands	Standard overnight service: J+1 95% (items of correspondence, under USO).

EU and member states	Description
Poland	Letter items of the fastest category: – J+1 82% – J+2 90% – J+3 94% (ordinances on the conditions for the provision of universal postal services of 9 January 2004) Postal parcels of the fastest category: – J+1 80% (ordinance on the conditions for the provision of universal postal services of 9 January 2004)
Portugal	Priority: J+1 94.5% Non-priority: J+3 96.3%
Romania	Quality of service standards for universal service must be attached as condition to licence and monitored by independent body. ANCOM President's Decision no. 293/2009 states: domestic: J+1: 85% and J+2: 97%; cross-border: J+3: 85% and J+5: 97%. * No reference is made regarding the deadline year.
Slovakia	2009/10: – 1st class letters: 96.0% J+1 [not yet set, 2011–2012] – 2nd class letters: 94.0% J+2 – direct mail (addressed): 94.0% J+4 – 1st class parcels: 95.5% J+2 – 2nd class parcels: 95.5% J+3
Slovenia	J+1 95%; J+2 99.5%
Spain	Royal Decree (503/2007, 20 April) introduces some changes in quality requirements. See below the new terms. Quality requirements from 2009 ahead: – letters: J+3 93% J+5 99% – parcels: J+3 80% J+5 95% – money orders: J+3 95% J+5 99%
Sweden	Priority: J+1 85%; J+3 97%
United Kingdom	Target to 31 March 2009: – priority mail (non-bulk): J+1 93.0% – non-priority mail (non-bulk): J+3 98.5% – priority mail (bulk): J+1 91.0% – non-priority mail (bulk): J+3 97.5% – economy mail (bulk): J+7 97.5% – USO parcels: J+3 90.0% – European international outbound: J+3 85.0% – special delivery (next day) non-account: 99.0% by specified time

Source: IPS (2010).

Table A.4: Frequency of collection (weekly or daily)

EU and member states	Description
EU	The universal service guarantees, in principle, one clearance and one delivery to the home or premises of every natural or legal person every working day, even in remote or sparsely populated areas.
Austria	At least once a day from Monday through Friday.
Belgium	Once a day at least five days a week.
Bulgaria	Once per day, from Monday to Friday.
Cyprus	Once per day, minimum five times per week.
Czech Republic	In principle, once a day five times a week.

EU and member states	Description
Denmark	Daily six days a week (Monday–Saturday).
Estonia	Parcels and letter mail items, once a day, five times a week.
Finland	Collection/delivery: at least once every working day; derogations due to difficult circumstances at least once a week. The number of households subject to the restriction may not exceed 300 in the whole country.
France	Postal items covered by the universal service shall, except in special circumstances, be collected on every working day (six days a week).
Germany	Once per day from Monday until Saturday
Greece	Five days per week, unless otherwise provided by special ministerial decision.
Hungary	Collection days per week: five (once every workday). Same standards apply for the entire territory of the country.
Ireland	As a minimum, one clearance per day five times a week.
Italy	Six days a week including Saturday.
Latvia	Latvia Post collects once a day six times a week. Collection is required at least once a day five times per week by postal regulation.
Lithuania	At least five times per week.
Luxembourg	Once per day, five times a week (except on public holidays).
Malta	Article 17(4) of the Postal Services Act. Every working day and not less than five days a week. (Currently MaltaPost p.l.c. collects six times a week.)
Netherlands	Once a day, at least six days a week (except public holidays).
Poland	Every working day and not less than five days a week – once a day.
Portugal	Once per day, five days per week.
Romania	At least one collection per working day (Monday to Friday). In some areas (exceptional geographic conditions) at least two collections per week.
Slovakia	Once a day five times a week.
Slovenia	Once a day at least five days a week.
Spain	Every working day, and at least once a day five times a week.
Sweden	Once per day not less than five times per week (one clearance on non-holiday business days).
United Kingdom	Six times per week, once every working day, including Saturday.

Source: IPS (2010).

Table A.5: Frequency of delivery (weekly or daily)

EU and member states	Description
EU	The universal service guarantees, in principle, one clearance and one delivery to the home or premises of every natural or legal person every working day, even in remote or sparsely populated areas.
Austria	Daily Monday through Friday.
Belgium	Once a day at least five days a week.
Bulgaria	Once per day, from Monday to Friday.
Cyprus	Once per day, minimum five times per week.
Czech Republic	Once a day every working day.
Denmark	Daily six days a week (Monday–Saturday).
Estonia	Once a day five times a week. Periodicals six times a week. In urban areas, Eesti Post delivers

EU and member states	Description
	twice a day. Less frequent delivery is permitted for islands, which are not provided with regular transport service.
Finland	Collection/delivery: at least once every working day; derogations due to difficult circumstances at least once a week. The number of households subject to the restriction may not exceed 300 in the whole country.
France	Postal items covered by the universal service shall, except in special circumstances, be collected on every working day (six days a week).
Germany	Once per day from Monday until Saturday.
Greece	Five days per week, unless otherwise provided by special ministerial decision.
Hungary	Delivery days per week: five (once every workday). Same standards apply for the entire territory of the country.
Ireland	One delivery per day to the home or premises of every natural or legal person five times per week except in circumstances or geographical conditions deemed exceptional by the regulator.
Italy	Six days a week including Saturday.
Latvia	Latvia Post delivers once a day six times a week. Delivery is required at least once a day five times per week by postal regulation.
Lithuania	At least five times per week.
Luxembourg	Once per day, five times a week (except on public holidays).
Malta	Article 17(4) of the Postal Services Act. Every working day and not less than five days a week. (Currently MaltaPost p.l.c. delivers six times a week.)
Netherlands	Once a day, at least six days a week (except public holidays).
Poland	Every working day and not less than five days a week – once a day.
Portugal	Once per day, five days per week.
Romania	At least one delivery per working day (Monday to Friday). In some areas (exceptional geographic conditions) at least two deliveries per week.
Slovakia	In principle five times a week, but delivery is done “every working day”. Following approval by the Postal Regulatory Office, Slovenska posta does not deliver to homes in very rural hardly accessible areas.
Slovenia	Once a day at least five days a week.
Spain	Every working day, and at least once a day five times a week.
Sweden	Once per day not less than five times per week (one distribution on non-holiday business days).
United Kingdom	Six times per week, once every working day, including Saturday.

Source: IPS (2010).

Table A.6: Accounting requirements

EU and member states	Description
EU	The USP(s) shall keep separate accounts within their internal accounting systems in order to clearly distinguish between each of the services and products which are part of the universal service and those which are not. This accounting separation shall be used as an input when member states calculate the net cost of the universal service. Such internal accounting systems shall operate on the basis of consistently applied and objectively justifiable cost accounting principles.
Austria	§10 of the Postgesetz (1997, latest version as amended in 2006) requires having a separation between reserved and non-reserved area as well as universal and non-universal services. Accounting provisions are in line with the EU directive requirements. The new “Postmarktgesetz” only makes a distinction between universal and non-universal services.

EU and member states	Description
Belgium	<ul style="list-style-type: none"> – Separation reserved/non-reserved – Separation universal/non-universal – Separation other public services (non universal services but other services of general economic interest entrusted by the Belgian State to De Post/La Poste – management contract).
Bulgaria	Cost accounting system.
Cyprus	Separate accounts for universal/non-universal services.
Czech Republic	Separate accounts for reserved services, basic services and other services.
Denmark	The principles of fair and true accounting have to be ensured.
Estonia	The cost accounting of USP shall be based on activity-based principle of cost accounting. According to the law in cost accounting the USP must also separate costs and revenues of universal postal service, other postal services, other services not related to postal services and also services included to reserved area.
Finland	The USP shall use accounting systems indicating that the prices are reasonable and proportional to costs. USP shall keep separate accounts at least for the services included in the universal service and other services.
France	La Poste shall submit cost accounting with separate accounts for each of the services exclusively reserved for it and distinguishing, among the other services, those covered by universal service provision, those covered by its duty to transport newspapers and magazines approved by the Joint Committee on News Agencies and Publications, and those coming under its other activities.
Germany	Separation of services within licensed and non-licensed area.
Greece	<p>Separate accounts for universal/non-universal services.</p> <p>Separate accounts for reserved/non- reserved services.</p> <p>The accounts for non-reserved services distinguish services that are part of the universal service from those which are not. The internal accounting system is approved by –the National Telecommunications & Postal Committee (NTPC) (EETT).</p>
Hungary	<ul style="list-style-type: none"> – Separate postal/non postal area – Separate universal/non-universal area – Separate reserved/non-reserved area – Allocate costs according to Directive §14
Ireland	<ul style="list-style-type: none"> – Separate accounts for each reserved and non-reserved service within the USO. – Separate accounts for non-universal services. <p>A revised accounting direction was issued in 2006 (06/63) setting out further requirements for the regulatory accounts. This is effective from 1 January 2007 and the regulatory financial statements for 2007 were prepared in line with the direction. This included use of amended cost allocation (direct/indirect/general allocator) methods and audit by KPMG.</p>
Italy	<ul style="list-style-type: none"> – Separate universal/non-universal – Separate reserved/non-reserved
Latvia	<ul style="list-style-type: none"> – A postal operator providing the universal service shall calculate the net costs of the fulfilment of the USO, in accordance with the methodology for calculation and determination of the net costs of fulfilment of the USO, as specified by the regulator. – A postal operator providing the USO shall ensure that the calculation of the net costs of fulfilment of the USO is inspected by a sworn auditor in accordance with the law on sworn auditors. An inspection of the calculation of the net costs of fulfilment of USO shall also include an inspection of the authenticity and validity of the data used for calculations. – A postal operator providing the USO shall ensure the availability of the calculation of the net costs of fulfilment of the USO and the report of the sworn auditor to the public. – A postal operator providing the USO shall submit the calculated net costs of fulfilment of the USO to the regulator for approval. Each year the regulator shall publish a report in the newspaper Latvijas Vēstnesis, providing information regarding the net costs of fulfilment of the USO.

EU and member states	Description
Lithuania	The Postal Law Article 8, part 3, states that the USP shall conduct accounting in accordance with the basic principles and requirements for cost accounting as set by the Communications Regulatory Authority (CRA) as well as other requirements relating to the cost accounting system. The requirements of the CRA are set in the Rules on Cost Accounting for the universal postal service provider as of 1 July 2005. Each universal postal service and each reserved postal service must be separated according to these rules.
Luxembourg	<ul style="list-style-type: none"> – Separate reserved/non-reserved area – Separate universal/non-universal area
Malta	Article 23 of the Postal Services Act, Schedule 3 to the Act states: “The universal service provider shall keep separate accounts within its accounting system, for each of the services within the reserved sector on the one hand and the non-reserved sector on the other. The accounts for the non-reserved sector shall clearly distinguish between services which are part of the universal service and services which are not. Such internal accounting systems shall operate on the basis of consistently applied and objectively justifiable cost accounting principles.”
Netherlands	– All USO costs. No requirements for the activities outside of the USO area. Allocate cost according to the EU Directive article 14, as stated in the Postal Regulation.
Poland	Art. 52 of the Postal Law requires separated accounts between reserved and non-reserved areas; and universal and non-universal services.
Portugal	<ul style="list-style-type: none"> – Separate universal/non-universal – Separate reserved/non-reserved
Romania	Separate accounts: <ul style="list-style-type: none"> – universal/ non-universal – reserved/ non-reserved
Slovakia	Separation of accounts for reserved/universal and non-universal services. The postal licence specifies that an audit of the accounting system is required once per two years at least.
Slovenia	Separate accounting for universal, reserved and other postal services.
Spain	Separate accounts for: <ul style="list-style-type: none"> – each reserved service – non-reserved services, making a distinction between universal postal services and non-universal postal services.
Sweden	The USP shall keep separate accounts at least for the services included in the universal service and other services
United Kingdom	Royal Mail’s licence requires separate accounts for: <ul style="list-style-type: none"> – the licensed services – non-licensed postal services that are part of the universal postal service – other non-licensed postal services – non-postal services.

Source: IPS (2010).

Table A.7: USO delivery points

EU and member states	Description
EU	The universal service guarantees, in principle, one clearance and one delivery to the home or premises of every natural or legal person every working day, even in remote or sparsely populated areas.
Austria	The USP shall deliver postal items to all addresses in Austria, if applicable, to delivery boxes. The new “Postmarktgesetz” provides for access to these delivery boxes to all postal operators, not later than 31 December 2012.
Belgium	Delivery at home for universal services. Mailboxes to be situated at arm’s length of public

EU and member states	Description
	roads as a principle (some limited exceptions).
Bulgaria	Easy for work and accessible places.
Cyprus	Letterboxes at user's premises.
Czech Republic	Not defined.
Denmark	Under Executive Order No.1313 of 14 December, 2004: delivery boxes intended for mail delivery and other rules for delivery. Clustered delivery boxes must be set up in multi-storey buildings (on the ground floor in each stairway or at the entrance and must include all places of delivery in the building) with several places of delivery (households, business addresses, etc). In multi-storey buildings built according to planning permission issued before 1 January 1974, clustered delivery boxes had to be in place by 31 December 2009. Delivery boxes must be set up at the entrance to the individual lot of buildings, detached and semi-detached houses with one or several households or business addresses etc. in the case of a building built according to planning permission issued after 1 January 1973. Delivery must be set up at the entrance to the individual lot of recreational dwellings. Clustered delivery boxes must be set up centrally in areas housing recreational dwellings in the case of areas developed according to planning permission issued after 1 January 1973. The obligation to set up delivery boxes rests on the owner.
Estonia	Not defined
Finland	Items of correspondence shall be distributed in one family houses to an installation or structure, which, in taking account of local circumstances, is located within a reasonable distance from the address location of the addressee of the postal items. In blocks of flats, items of correspondence shall be distributed to the building customer specifically.
France	Deliveries shall be provided to appropriate installations at the home or premises of every natural or legal person or, by way of derogation, subject to conditions laid down by decree.
Germany	Delivery has to be provided to the residence or business premises.
Greece	Delivery to every address written on the postal item.
Hungary	– Home or premises of the addressee. – Post office: if registered postal item couldn't be delivered at the home or premises or poste restante, or if the declared value of the postal items exceeds HUF 100,000. – Rural delivery points (rural roadside letterboxes installed by the USP: if extraordinary geographical or infrastructure-related conditions exist and it is approved by the NRA).
Ireland	A USO provider is obliged to provide one delivery to the home or premises of every natural or legal person or, by way of derogation, under conditions at the discretion of the regulator, one delivery to appropriate installations. The express agreement of the addressee is required for deliveries to any other point, e.g. a roadside letterbox.
Italy	At the home or premises of every natural or legal person.
Latvia	Not defined.
Lithuania	Requirements for the universal postal service access points: – Indication of the name of the universal postal service provider (company logo), the working hours and the installed letterbox at the entrance to permanent or mobile universal postal service facilities or to the agents' facilities. – Letterboxes shall be placed alongside sidewalks and roads and other locations, where they may be easily seen and accessed by the users. – The public letterboxes shall bear the name of the USP (company logo) and the indication of the clearance time (characteristics of the public postal network of the USP).
Luxembourg	None defined.
Malta	All households and business units in Malta and Gozo are provided with one delivery service daily.
Netherlands	In the general terms and conditions of TNT Post, it is stipulated that the delivery takes place by depositing a postal item in the letterbox belonging to the address indicated on the item, or a new address indicated by the addressee to TNT Post, for example in the event of

EU and member states	Description
	removal or holidays or in a P.O. box. If the mail is not suitable to be put in a letterbox it shall be handed over at the home of the addressee, in so far as necessary, after signature of a receipt.
Poland	Not defined.
Portugal	Article 21 of the Portuguese Regulation for the Public Postal Service establishes that mail shall be distributed at the address indicated by the sender or at the postal establishment of the final destination.
Romania	The Romanian Post has the obligation to deliver to the home or premises of the addressee, or, as the case may be, at its contact points, all the postal items weighing no more than 500 g, in one of the following ways: a) to any recipient that the addressee agrees the postal items may be delivered to; b) to any person considered as authorized to receive the postal item. The postal items weighing more than 500 g and the registered items as well that could not be delivered to the person considered as authorised to receive them will be delivered to the Romanian Post's contact points, only after the addressee is notified accordingly regarding the arrival of the items in case. *Regarding the ANCOM (National Authority for Communications) President's Decision no.293/2009
Slovakia	The Postal Terms and Conditions, approved by the Postal Regulatory Office, define that the USP delivers items to a point of delivery by an address. The point of delivery is can be a residence (flat, apartment), private letterbox (mail drop), registry, reception, porter's room, P. O. box, letterbox (mailbox).
Slovenia	Owners of a housing unit or business premises must provide for installation and maintenance of a house mailbox at the entrance of their housing unit or business premises. Postal items shall be delivered to users of postal services whose housing units or business premises are located outside a densely populated settlement and are at the same time more than 200 metres from the deliverer's route in detached mailboxes, which the users shall put up and maintain at an appropriate location along the deliverer's route in agreement with the USP.
Spain	<ul style="list-style-type: none"> – Home address of every natural or legal person – Home post boxes – Post office boxes – Cluster of delivery boxes
Sweden	A number of households in remote areas, particularly in the archipelagos and the mountain district, are exempt from the USO of daily postal service and receive their mail between two to four days a week in the form of a special postbag service.
United Kingdom	The home or premises of every individual or other person in the UK, or as approved by Postcomm. There are a small number (approximately 2,800) of designated exceptions approved by Postcomm.

Source: IPS (2010).

Table A.8: Complaint mechanisms

EU and member states	Description
EU	Member states shall ensure that transparent, simple and inexpensive procedures are made available by all postal service providers for dealing with postal users' complaints, particularly in cases involving loss, theft, damage or non-compliance with service quality standards (including procedures for determining where responsibility lies in cases where more than one operator is involved), without prejudice to relevant international and national provisions on compensation schemes. Member states shall adopt measures to ensure that the procedures referred to in the first subparagraph enable disputes to be settled fairly and promptly with provision, where warranted, for a system of reimbursement and/or compensation. Member states shall also encourage the development of independent out-of-court schemes for the resolution of disputes between postal service providers and users.

EU and member states	Description
Austria	There is a complaint mechanism authority within the Ministry of Transport, Innovation and Technology regarding complaints between users and providers. The regulatory authority (Rundfunk und Telekom Regulierungs-GmbH) is another conflict mechanism authority regarding conflicts or complaints between the providers. The new "Postmarktgesetz" will make Rundfunk und Telekom Regulierungs-GmbH competent for all dispute resolutions (from 2011 on).
Belgium	Standard complaint procedure clearly defined in "General Terms and Conditions". Consumers may refer in second instance to an independent ombudsman, responsible for the whole postal sector.
Bulgaria	Standard procedure according EN 14012:2005 European Committee for Standardization.
Cyprus	There are three complaint mechanisms – Post Office Internal Department, Independent Ombudsman and the Commissioner of Electronic Communications and Postal Regulation. The authority for appeal of NRA decisions is the Supreme Court.
Czech Republic	Competent authority for complaints is the NRA, the Czech Telecommunication Office (Postal Services Regulation Department).
Denmark	Customers complaints are initially to be directed to Post Danmark. Decisions from Post Danmark can be brought before the Road Safety and Transport Agency (Færdselsstyrelsen) as the supervising authority for Post Danmark. The Road Safety and Transport Agency (Færdselsstyrelsen) is furthermore the authority to which all complaints about Post Danmark's alleged lack of compliance with laws and regulations specific to Post Danmark are to be directed. The Danish National Competition Authority (Konkurrencestyrelsen) is the authority to which all complaints about Post Danmark's alleged lack of compliance with national- and EU-competition legislation are to be directed.
Estonia	Complaints may be submitted both to the postal service provider and regulator. Konkurentsiamet (Estonian Competition Authority) is the competent authority for complaints. Publication of complaint data is not compulsory. Everyone can address their complaint at first to the USP and afterwards to Konkurentsiamet or directly to Konkurentsiamet or to the court.
Finland	Anyone who is dissatisfied with the distribution of postal items may also refer the matter to FICORA. Matters relating to contractual relationship or the liability to compensate may be taken to court. Any consumer complaint, also postal matters, may be referred to the Consumer Complaint Board; however, the resolutions are only recommendations.
France	The USP shall respect EU standards for treatment of a user's complaint (EN 14012), notably the delay of response – less than two months – or the absence of charge.
Germany	BNetzA ensures complaint procedures are followed and provides redress through a consumer advice service.
Greece	Hellenic Post has its own complaint department.
Hungary	It is possible to submit complaints: – at any postal outlet, customer service office, verbally or in writing – by telephone – by post or – in any other manner (e.g. electronically). The postal service provider shall keep a register of all complaints. The postal service provider shall carry out an investigation on each complaint. In the case of services within Hungary or other EU member states the deadline for the completion of the investigation is 30 days, counted from the receipt of the complaint. The deadline for the completion of the investigation regarding services within Hungary and other EU member states may once be extended for another 30 days. The person who submitted the complaint must be informed of such deadline extension. If a postal service provider fails to respond to a complaint by the due deadline, or if the response is unacceptable to the customer who submitted the complaint, the customer may turn to the Representative of Consumer Rights in Communications or the Communications Authority within 60 days of the expiry of the deadline for the response or the actual date of response receipt. The USP is obliged to publish compilations of customers' complaints.

EU and member states	Description
Ireland	Complaints are addressed to An Post in the first instance (customer.services@anpost.ie or in writing to Customer Services, GPO, FREEPOST, Dublin 1, IRELAND or fax +353 1 809 0900). If An Post's complaints handling system is exhausted without resolution customers may approach an independent ombudsman – Ombudsman Ireland. http://ombudsman.gov.ie/ ComReg invites comments from those customers who experience difficulties in having their complaints resolved (http://www.askcomreg.ie/). An Post launched "Getting it Sorted – Resolving your Complaints", a booklet setting out complaint resolution procedures and compensation, during March 2008. This is available on http://www.anpost.ie/ .
Italy	The USP is obliged to ensure transparent, simple and inexpensive procedures for dealing with users' complaints. A conciliation procedure has also been set up when clients are not satisfied with the first response to their claim. Same obligations have been extended to universal services provided by postal operators under the individual licences and to non-universal services provided by postal operators under a general authorisation.
Latvia	The Public Utilities Commission is the competent authority for complaints. On the request of the regulator, the postal operator shall provide information regarding the number of complaints received and the results of the reviews during the relevant accounting period of the financial year. The postal operator providing the USO shall also include information regarding the number of complaints and type of review in the annual report.
Lithuania	Communications Regulatory Authority is the competent authority for complaints. The USP in the annual reports publishes the number of complaints handled and the way in which the complaints have been dealt with (Art. 8, part 3(6) of the Postal Law).
Luxembourg	Where postal users are not satisfied by redress provided by the USPs, they can direct their complaints to the Institut Luxembourgeois de Regulation.
Malta	Depicted in MCA's Decision Notice "MaltaPost p.l.c. – Quality of Service Requirements" dated 8 June 2005 and reflected in MaltaPost p.l.c.'s Postal Schemes, http://www.MaltaPost.com/ .
Netherlands	For disputes concerning the application and interpretation of the general terms and conditions there is an independent disputes committee for consumers, "Geschillencommissie" (if not acting in the exercise of a profession or the running of a business), under the auspices of the Dutch consumers' association "Consumentenbond". OPTA also receives complaints from postal users on postal services.
Poland	Sender or addressee may submit the complaint at any point of contact of the USP. The Minister in charge of post shall establish simplification of complaint procedure. The right to vindication of claims within the court of proceeding is possible but all the possibilities of complaint procedure shall be considered as exhausted.
Portugal	Under Law no. 102/99, postal service operators shall in exercising their activity, guarantee transparent, simple and inexpensive procedures for the processing of users' complaints. Timely and found responses to these shall be guaranteed. Under Article 22, users of the universal service may submit complaints to the postal regulatory body in the case of prior complaints, to which the postal operator has not responded on time and which are well-founded, or which have not been resolved satisfactorily. The postal regulator shall assess and issue an opinion based on the complaints made and shall make sure that the provider of the universal service published information on the total number of complaints and the manner in which they are processed.
Romania	<p>1) The providers of postal services shall have the obligation to draw up a simple, transparent and inexpensive procedure for dealing with users' complaints, particularly in cases involving loss, partial or total destruction, or deterioration of postal items, as well as the non-compliance with service quality standards.</p> <p>2) The mechanism for dealing with users' complaints shall include:</p> <ul style="list-style-type: none"> – procedures for determining where responsibility lies in cases where two or more providers of postal services are involved – procedures allowing the fair and prompt settlement of the disputes, as well as an adequate system of reimbursement or compensation. <p>3) The mechanism for dealing with users' complaints shall be submitted for approval by the regulatory authority, within a term set out by it. If the regulatory authority considers that the proposed mechanism does not fulfil the conditions provided for in paragraphs (1) and (2), it</p>

EU and member states	Description
	may request the adequate modification of this mechanism.
Slovakia	USP is a competent authority for complaints. Courts are competent in the second level. Publication of complaint data by the USP is compulsory.
Slovenia	Standard complaint procedure clearly defined in "General Terms and Conditions". Customers may refer in second instance to the postal regulator (APEK).
Spain	The universal service postal operator has its own complaint procedures. The consumer can also go to the "Juntas Arbitrales de Consumo", the Postal Regulator, or the independent ombudsman (Defensor del Pueblo; http://www.defensordelpueblo.es/), although there is no specific ombudsman for postal services.
Sweden	Posten AB has implemented the new complaints procedures standard (EN 14012:2003).
United Kingdom	Consumers can complain to Royal Mail or any other licensed operator directly. In October 2008, under the Consumers, Estate Agents and Redress Act 2007, Postcomm issued high level complaint handling guidelines. All licensed postal operators are required to have complaint handling processes which comply with these regulations and to publicise these. In addition, since October 2008 a formal binding industry-wide redress scheme approved by Postcomm has been available to customers (including mail recipients) for licensed postal products, except where these are sold to the customer under a contract. Customers are normally only able to use the scheme once they have exhausted the operator's own complaint handling processes. If consumers are not satisfied with the postal operator's handling of the complaint they can contact Consumer Direct, which now acts as independent adviser with responsibility for postal services.

Source: IPS (2010).

Table A.9: Other USO requirements

EU and member states	Description
EU	N/A.
Austria	N/A.
Belgium	The requirements laid down in the Postal Directive have been fully transposed in Belgian law without extra additions with respect to USO requirements.
Bulgaria	Literature for the blind is conveyed free of charge.
Cyprus	Uniformed and affordable prices in the whole territory of the Republic of Cyprus including registered and insured postal items for inland and cross-border postal services.
Czech Republic	Not defined.
Denmark	Literature for the blind is conveyed free of charge.
Estonia	Delivery and collection throughout the state. Uniform 1st class rate required.
Finland	None.
France	N/A.
Germany	N/A.
Greece	To implement the charter of obligations towards consumers.
Hungary	Registration and insurance of mails belongs also to USO area. The USP shall provide postal payment intermediary activity and domestic postal money order service throughout the territory of the country.

EU and member states	Description
	These requirements apply to both mail and non-mail items.
Ireland	Free postal service for the blind and partially sighted persons (UPU requirement). Sending books abroad.
Italy	Italian law provides for reduced tariff in favour of non-profit organisations and publishing sector (Law no. 46 of 27 February 2004). Ministerial Decree 28/06/07 states the opening time of post offices in summer.
Latvia	None.
Lithuania	Based on Article 8.3 of the Postal Law, a universal postal service provider shall be obliged: <ul style="list-style-type: none"> – to ensure the permanent provision of universal postal services in the territory of the country without discrimination to all users on every working day and not less than five days a week except in cases of <i>force majeure</i>, also to ensure one clearance of postal items and one delivery to the home or premises of the addressee of postal services, save in circumstances deemed exceptional by the Communications Regulatory Authority – to regularly provide sufficiently detailed and up-to-date information to users of universal postal services regarding those services, the general conditions of access to these services, prices, quality requirements or standards thereof – in accordance with the features of the public postal network, to install a sufficient number of access points meeting the needs of users – to issue and withdraw from circulation the means of postal prepayment in the manner prescribed by the Government or an institution authorised by it – to compensate for the expenses of posting literature for the blind and of letter-post items of prisoners of war or internees – to publish an annual report including the number of complaints handled and information about the manner in which they have been dealt with – to conduct accounting in accordance with the basic principles of cost accounting and requirements for the cost accounting system established by the Communications Regulatory Authority as well as other requirements related to the cost accounting system including the requirement to conduct an audit; to separate every universal postal service and reserved postal service in the cost accounting system – in accordance with the procedure set forth by the national standards authority, to apply the standards of the European Union – to conclude contracts with other providers of postal services on access to the public postal network under conditions which are transparent and non-discriminatory – regarding terminal dues for cross-border mail, to respect the following principles: terminal dues shall be fixed in relation to the costs of processing and delivering incoming cross-border mail, levels of remuneration shall be related to the quality of service achieved and terminal dues shall be transparent and non-discriminatory.
Luxembourg	None.
Malta	Compensation measures as defined in MCA's Decision Notice "MaltaPost p.l.c. – Quality of Service Requirements" dated 8 June 2005. Protecting the integrity of mail as defined in the Licence of the USP (MaltaPost p.l.c.) and the MCA Decision Notice "Postal Sector – Minimum Standards for Protecting the Integrity of Mail Decision notice" dated 8 June 2006. MCA Decision Notice "MaltaPost Plc's Universal Service Obligations – Accessibility, Daily Delivery, Provision of Information" published on 10 September 2008 lays down these requirements: <ol style="list-style-type: none"> 1. There must be a stamp vendor in the vicinity of every letterbox. The term "vicinity" was defined as being within a 100 metres radius of the nearest retail outlet to the letterbox, which need not be a postal outlet (post office or sub post office) and may be automated. 2. A number of locations and media should be used for the provision of information related to all elements of the universal postal service (such as information on prices, the location of all its access points, the times of opening and closing of each of its post offices and sub post offices, the times of collection from access points and the times of delivery of postal items): <ul style="list-style-type: none"> – at the point of posting – by way of notice at all post offices

EU and member states	Description
	<ul style="list-style-type: none"> – in written form at all post offices for subsequent reference at home or business premises – in written form at selected post offices, or on request by post, for subsequent reference at home or business premises – over the internet (company's website, etc.) – through advertising media – in the company's annual report.
Netherlands	None.
Poland	Postal items for the blind persons and delivery of library items (fee partial exemption).
Portugal	Waiting time at the post office counter: 85% waiting less than ten minutes.
Romania	N/A
Slovakia	Office may lay to provide postal payment service to the USP and specify details in the postal licence. The Postal Regulatory Office has set up the following categories of postal payment service: – cash » cash – cash » bank account – cashless » cash with the following services: advice of delivery, in person, time-certain delivery, pay on ... [a date].
Slovenia	Literature for the blind is conveyed free of charge
Spain	Money order service, direct mail, registered and insured items
Sweden	Newspaper delivery constitutes part of the USO. Posten AB must take account of the needs of disabled individuals (e.g. extended rural service for elderly/disabled and conveyance of literature for the blind). The USP shall perform measures in respect of preparedness for national defence.
United Kingdom	Royal Mail still provides free postal services for the blind and partially sighted in accordance with Section 41 of the Postal Services Act 2000.

Source: IPS (2010).

Table A.10: USO financing

EU and member state	Description
EU	The external financing of the residual net costs of the universal service may still be necessary for some member states. It is therefore appropriate to explicitly clarify the alternatives available in order to ensure the financing of the universal service, to the extent that this is needed and adequately justified, while leaving member states the choice of the financing mechanisms to be used. These alternatives include the use of public procurement procedures including, as provided for in the public procurement directives, competitive dialogue or negotiated procedures with or without the publication of a contract notice and, whenever USOs entail net costs of the universal service and represent an unfair burden on the designated USP, public compensation and cost sharing between service providers and/or users in a transparent manner by means of contributions to a compensation fund. Member states may use other means of financing permitted by Community law, such as deciding, where and if necessary, that the profits accruing from other activities of the USP(s) outside the scope of the universal service are to be assigned, in whole or in part, to the financing of the net costs of the universal service, as long as this is in line with the Treaty. Without prejudice to the obligation of member states to uphold the Treaty rules on state aid, including specific notification requirements in this context, member states may notify the Commission of the financing mechanisms used to cover any net costs of the universal service, which should be reflected in the regular reports that the Commission should present to the European Parliament and Council on the application of Directive 97/67/EC.
Austria	There is no compensation fund. The reserved area currently guarantees the sustainable provision of the universal service until future market opening.

EU and member state	Description
Belgium	Financing through the reserved area. A compensation fund mechanism is also foreseen (not yet activated) in the Postal Act of 21 March 1991 (on the reform of some public economic undertakings).
Bulgaria	Provided subsidy from the Government.
Cyprus	The net cost of the USO can be financed by a compensation fund created according to the postal legislation. At the current stage no compensation fund has been created.
Czech Republic	No compensation fund. No state subsidies.
Denmark	USO is currently financed from universal service revenue. No provision for a compensation fund.
Estonia	Compensation fund.
Finland	Self-financing only via net revenue. No compensation fund. The Tax Law is still in effect; it does not finance Itella. In the licence conditions of Itella it is stated that the state is not under an obligation to compensate Itella Corporation for any costs concerning the provision of postal services.
France	The reserved area is currently financing the USO. A compensation fund can be activated by the USP.
Germany	None. Compensation fund not activated.
Greece	The USO is actually financed from the reserved area and company funds. There is a legal provision for a compensation fund but it does not apply.
Hungary	Reserved services.
Ireland	Currently, the reserved area, further to the wider USO revenue, is the most important funding mechanism for USO financing. All services need to be cost based, hence under normal circumstances sufficient revenues are made to finance the requirements. Today, two-thirds of An Post postal revenues are already exposed to full competition. Cross subsidisation of universal services outside the reserved sector out of revenues from services in the reserved sector is permitted only to the extent to which it is shown to be strictly necessary to fulfil specific USOs imposed in the competitive area, in accordance with rules adopted to this effect by the regulator.
Italy	In Italy the universal service is loss-making, because there is a high USO burden (low volumes and a particularly difficult topography). The revenues from the reserved area are not enough to cover the burden of USO. The postal market liberalisation in 2011 will increase the issue of the USO funding.
Latvia	According to the postal law adopted in 2009: – The net costs of fulfilment of the USO shall be reimbursed in accordance with the procedures specified by the Cabinet of Ministers. – The net costs of fulfilment of the USO shall be reimbursed if a postal operator providing USO proves that the fulfilment of the USO causes losses. – Losses arising from the fulfilment of the USO shall not be reimbursed if the fulfilment of the USO also creates additional benefits and they exceed the losses incurred.
Lithuania	For the year 2010 no subsidies will be allocated by the state.
Luxembourg	USO is currently financed by the income from the reserved area. No other financing mechanism is currently foreseen.
Malta	No compensation fund.
Netherlands	Income from USO (including) reserved area. No provision for a compensation fund.
Poland	The costs related to the USOs are financed through reserved area revenues. The USP can obtain a subsidy if there appears a loss on the universal service. No compensation fund.
Portugal	Income from reserved area. A provision has been made in law for a compensation fund (not activated).
Romania	No compensation fund.
Slovakia	– Reserved area – Cost-driven postal charges The Compensation Fund has been revoked by the Amendment to the Postal Act.

EU and member state	Description
Slovenia	Income from the tariffs. A compensation fund mechanism is foreseen in the Postal Act, but not yet activated.
Spain	Regulations provide for a compensation fund. The fund has not been activated yet.
Sweden	Ordinary services are self-financed. The state finances the conveyance of literature for the blind, extended rural services and national defence services. No compensation fund.
United Kingdom	At present, the USO is financed with licensed area revenue. There is currently no provision for a compensation fund.

Source: IPS (2010).

Appendix B: Model coefficients

The model results for the best models developed during the study are presented in the following tables. For each model we present a number of model fit statistics as described in Table B.1. The model coefficients reflect the results after bootstrapping to take account of repeated observations being collected from a single individual. Separate models are presented for businesses (SMEs and large businesses) for each SP experiment, and for residents by country.

Table B.1: Interpretation of model fit statistics

Statistic	Definition
Observations	The number of choice observations included in the model estimation.
Final log (L)	This indicates the value of the log-likelihood at convergence. The log-likelihood is defined as the sum of the log of the probabilities of the chosen alternatives, and is the function that is maximised in model estimation. The value of log-likelihood for a single model has no obvious meaning; however, comparing the log-likelihood of two models estimated on the same data allows the statistical significance of new model coefficients to be assessed properly through the likelihood ratio test.
DOF	Degrees of freedom: the number of coefficients estimated in this model. Note that if a coefficient is fixed to zero then it is not a degree of freedom.
Rho2(c)	If we compare the log-likelihood (LL(final)) value obtained with the log-likelihood of a model with only constants (LL(c)) we get: $\text{Rho2(c): } 1 - \text{LL}(\text{final})/\text{LL}(\text{c})$ A higher value indicates a better fitting model.

In interpreting the coefficient values the following points should be considered:

- A positive coefficient means that the variable level or constant has a positive impact on utility and so reflects a higher probability of choosing the alternatives to which it is applied.

- A negative coefficient means that the variable level or constant has a negative impact on utility and so reflects a lower probability of choosing the alternative to which it is applied.
- Some coefficients are multiplied by continuous variables and therefore reflect the disutility per unit of the variable, e.g. price, which reflect the relative disutility per additional unit of cost (in the appropriate currency for each member state).
- Some service attribute coefficients are applied to categorical variables; these therefore reflect the total utility increase or decrease for that variable, relative to a base situation, e.g. delivery by 17:00 is measured relative to delivery by 09:00 and thus we would expect it to be negative.

The tables also show the coefficient t-ratio, which defines the (statistical) significance of the coefficient (relative to zero). The larger the t-ratio, the more significant is the coefficient estimate. A coefficient with a t-ratio greater than ± 1.960 is estimated to be significantly different from zero at the 95% confidence level. A t-ratio of ± 1.645 is significantly different from zero at the 90% confidence interval. In general the level of significance of the coefficients in the pilot survey data are low, which is generally expected because of low sample sizes, although we also make some recommendations to improve the significance of the coefficients for the main survey.

Coefficients which are significantly different from zero (at the 95% confidence level) are shown in black. Coefficients with lower levels of significance are shown in grey.

Table B.2: Model results, Experiment 1: businesses

Domain level	SME		BB	
	Coefficient	t-ratio	Coefficient	t-ratio
Number of classes and speed of service				
One class: delivery by next working day	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	0.00	n/a	-0.31	-1.9
One class: delivery within 3 working days	-0.29	-2.1	-0.50	-2.3
One class: local deliveries by next working day; national deliveries within 3 working days	-0.24	-1.61	-0.20	-1.4
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a
Delivery location				
Delivered to business during work hours only	0.00	n/a	0.00	n/a
Delivered to secure mail box 100m from business	-0.47	-3.5	-0.35	-4.7
Delivered to secure mail box 1 km from business	-0.65	-4.6	-0.38	-2.8
Guaranteed time of delivery				
Delivered by 9:00	0.00	n/a	0.00	n/a
Delivered by 13:00	-0.17	-1.2	0.00	n/a
Delivered by 17:00	-0.39	-2.5	-0.22	-1.7
Percentage of mail delivered on time				
80% of letters delivered on time	0.00	n/a	0.00	n/a
90% of letters delivered on time	0.10	1.0	0.36	2.1
95% of letters delivered on time	0.17	1.5	0.42	2.6
Percentage of letters lost				
No lost letters	0.00	n/a	0.00	n/a
5 out of 100 letters lost	-0.53	-4.4	-0.58	-3.7
10 out of 100 letters lost	-1.34	-5.7		
10 out of 100 letters lost (not magazines / new papers)			-1.41	-5.2
10 out of 100 letters lost (magazines / new papers)			-0.65	-2.5
Stamp prices				
	-1.58	-6.2	-0.59	-2.3
Scale parameter - Sweden				
	1.00	n/a	1.00	n/a
Scale parameter - Poland				
	0.46	4.0	1.21	3.8
Scale parameter - Italy				
	0.61	5.0	0.58	3.0
Model statistics				
Number of observations	1332		864	
D.O.F.	13		14	
Final log likelihood	-809.6		-518.0	
Rho ² (c)	0.122		0.131	

Table B.3: Model results, Experiment 2: businesses

Domain level	SME		BB	
	Coefficient	t-ratio	Coefficient	t-ratio
Number of classes and speed of service				
One class: delivery by next working day	0.00	n/a	0.00	n/a
One class: delivery within 2 working days	-0.09	-0.7	-0.29	-2.0
One class: delivery within 3 working days	-0.63	-3.7	-0.43	-3.4
One class: local deliveries by next working day; national deliveries within 3 working days	-0.35	-2.0	-0.17	-1.4
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a
Delivery location				
Delivered to business during work hours only	0.00	n/a	0.00	n/a
Delivered to secure mail box 100m from business which you can access at any time	-0.37	-3.5	-0.32	-2.6
Delivered to secure mail box 1 km from business which you can access at any time	-0.58	-3.2	-0.32	-2.6
Guaranteed time of delivery				
Delivered by 9:00	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	0.00	n/a
Delivered by 17:00 (not advertising material)	0.00	n/a	0.00	n/a
Delivered by 17:00 (advertising material)	-0.42	-2.4	-0.32	-2.1
Percentage of mail delivered on time				
80% of parcels delivered on time	0.00	n/a	0.00	n/a
90% of parcels delivered on time	0.00	n/a	0.00	n/a
95% of parcels delivered on time	0.21	2.0	0.00	n/a
Percentage of parcels lost				
No lost parcels	0.00	n/a	0.00	n/a
5 out of 100 parcels lost	-0.84	-4.3	-0.72	-3.6
10 out of 100 parcels lost (visit post office once a year or less)	-1.93	-6.6		
10 out of 100 parcels lost (visit post office several times a year or more)	-1.21	-5.3		
10 out of 100 parcels lost			-1.08	-4.4
Stamp prices	-0.09	-3.5	-0.08	-2.6
Scale parameter - Sweden	1.00	n/a	1.00	n/a
Scale parameter - Poland	0.92	4.1	1.05	3.7
Scale parameter - Italy	0.81	4.2	1.01	2.7
Model statistics				
Number of observations	1332		864	
D.O.F.	13		10	
Final log likelihood	-778.0		-522.7	
Rho ² (c)	0.157		0.125	

Table B.4: Model results, Experiment 3: businesses

Domain level	SME		BB	
	Coefficient	t-ratio	Coefficient	t-ratio
Accessing postal services				
- <i>Distance to travel</i>				
1 km from business	0.00	n/a	0.00	n/a
3 km from business	-0.19	-1.7	-0.29	-2.0
5 km from business	-0.47	-4.1	-0.29	-2.0
10 km from business	-1.15	-7.6	-0.90	-4.1
- <i>Opening hours</i>				
open 2 hours per day	0.00	n/a	0.00	n/a
open 4 hours per day	0.57	5.7	0.63	3.2
open 8 hours per day			1.17	5.4
open 8 hours per day (no internet access at home)	1.42	8.0		
open 8 hours per day (internet access at home)	1.05	8.0		
- <i>Services available</i>				
Basic postal services available	0.00	n/a	0.00	n/a
Full range of postal services available	0.30	3.4	0.19	2.0
Full range of postal services plus financial services	0.30	3.4		
Full range of postal services plus financial services (visit post office once a fortnight or less)			0.50	3.6
Full range of postal services plus financial services (visit post office once a week or more)			0.00	n/a
Postal network				
Delivery to 100% of addresses	0.00	n/a	0.00	n/a
Delivery to 99% of addresses	-0.33	-3.7	-0.19	-1.4
Delivery to 95% of addresses	-0.69	-4.9	-0.44	-2.8
Pricing				
Same price to any destination in the country	0.20	2.6	0.19	1.7
Different prices to deliver to different destinations	0.00	n/a	0.00	n/a
Average stamp price	-0.82	-4.8	-0.67	-2.7
<i>Scale parameter - Sweden</i>	1.00	n/a	1.00	n/a
<i>Scale parameter - Poland</i>	0.94	5.8	0.77	2.7
<i>Scale parameter - Italy</i>	1.09	5.7	1.23	3.6
Model statistics				
Number of observations	1332		864	
D.O.F.	13		12	
Final log likelihood	-740.5		-507.0	
Rho ² (c)	0.196		0.153	

Table B.5: Model results, Experiment 1: residents

Domain level	Sweden		Poland		Italy	
	Coefficient	t-ratio	Coefficient	t-ratio	Coefficient	t-ratio
Number of classes and speed of service						
One class: delivery by next working day	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2-3 working days					-0.13	-1.1
One class: delivery within 2 working days	0.00	n/a				
One class: delivery within 3 working days	-0.30	-2.8				
One class: delivery within 2 working days (non-vulnerable)			0.00	n/a		
One class: delivery within 3 working days (non-vulnerable)			-0.19	-1.8		
One class: delivery within 2 working days (vulnerable)			-0.13	-0.7		
One class: delivery within 3 working days (vulnerable)			-0.62	-3.7		
One class: local deliveries by next working day; national deliveries within 3 working days	0.20	2.1	0.01	0.1	0.03	0.4
Two classes: next working day and within 3 working days	0.00	n/a	0.00	n/a	0.00	n/a
Delivery location						
Delivered to home during work hours only	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to secure box 100m from home (vulnerable) * age ≤ 44 years	0.00	n/a				
Delivered to secure box 100m from home (vulnerable) * age > 44 years	-0.63	-4.6				
Delivered to secure box 1km from home (vulnerable) * age ≤ 44 years	0.00	n/a				
Delivered to secure box 1km from home (vulnerable) * age > 44 years	-1.23	-9.0				
Delivered to secure box 100m from home (non-vulnerable)	-0.55	-3.0				
Delivered to secure box 1km from home (non-vulnerable)	-1.24	-4.1				
Delivered to secure box 100m from home			-0.35	-4.8	-0.35	-2.5
Delivered to secure box 1 km from home			-0.58	-4.2	-0.48	-2.6
Guaranteed time of delivery						
Delivered by 9:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.17	2.6	0.19	2.2	0.00	n/a
Delivered by 17:00	0.00	n/a	0.31	3.2	0.00	n/a
Percentage of mail delivered on time						
80% of letters delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
90% of letters delivered on time	0.22	2.0				
95% of letters delivered on time	0.32	5.2				
More than 90% of letters delivered on time			0.37	3.7	0.20	2.0
Percentage of letters lost						
No lost letters	0.00	n/a	0.00	n/a	0.00	n/a
5 out of 100 letters lost (non-vulnerable, never sent letters)			0.00	n/a		
5 out of 100 letters lost (non-vulnerable, sent letters)			-0.48	-2.4		
10 out of 100 letters lost (non-vulnerable, never sent letters)			0.00	n/a		
10 out of 100 letters lost (non-vulnerable, sent letters)			-1.10	-3.1		
5 out of 100 letters lost (non-vulnerable)	-0.89	-3.7			-0.57	-1.9
10 out of 100 letters lost (non-vulnerable)	-1.67	-4.2			-0.78	-1.8
5 out of 100 letters lost (vulnerable)	-0.43	-3.6	-0.24	-1.6	-0.41	-1.9
10 out of 100 letters lost (vulnerable)	-0.91	-6.9	-0.32	-2.0	-0.83	-3.7
Stamp prices	-1.37	-6.1	-0.68	-4.30	-0.50	-1.55
Scale parameter - vulnerable	1.00	n/a	1.00	n/a	1.00	n/a
Scale parameter - non-vulnerable	0.80	4.4	1.11	3.99	1.68	0.71
Model statistics						
Number of observations	2112		1968		1992	
D.O.F.	15		15		11	
Final log likelihood	-1192		-1186.7		-1258.4	
Rho ² (c)	0.186		0.128		0.088	

Table B.6: Model results, Experiment 2: residents

Domain level	Sweden		Poland		Italy	
	Coefficient	t-ratio	Coefficient	t-ratio	Coefficient	t-ratio
Number of classes and speed of service						
One class: delivery by next working day	0.00	n/a	0.00	n/a	0.00	n/a
One class: delivery within 2-3 working days (vulnerable)	-0.19	-1.6				
One class: delivery within 2 working days			-0.17	-1.2	0.00	n/a
One class: delivery within 3 working days			-0.38	-2.4	-0.13	-1.3
One class: local deliveries by next working day; national deliveries within 3 working days			0.00	n/a		
One class: local deliveries by next working day; national deliveries within 3 working days (non-vulnerable)	0.22	1.2			0.00	n/a
One class: local deliveries by next working day; national deliveries within 3 working days (vulnerable)	-0.24	-1.4			-0.74	-3.1
Two classes: next working day and within 3 working days			0.17	1.5	0.08	1.1
Two classes: next working day and within 3 working days (non-vulnerable)	0.20	1.3				
Two classes: next working day and within 3 working days (vulnerable)	-0.24	-1.8				
Delivery location						
Delivered to home during work hours only	0.00	n/a	0.00	n/a	0.00	n/a
Delivered to mail box 100m from home			-0.15	-1.2		
Delivered to mail box 100m from home (non-vulnerable)	0.00	n/a				
Delivered to mail box 1 km from home (non-vulnerable)	-0.27	-1.7				
Delivered to mail box between 100m and 1 km from home (vulnerable)	-0.44	-3.9				
Delivered to mail box between 100m and 1 km from home					-0.22	-2.2
Delivered to secure mail box 1 km from home			-0.51	-4.1		
Guaranteed time of delivery						
Delivered by 9:00	0.00	n/a	0.00	n/a	0.00	n/a
Delivered by 13:00	0.00	n/a	0.06	0.5	0.10	1.3
Delivered by 17:00	0.00	n/a	0.38	3.4	0.19	2.5
Percentage of mail delivered on time						
80% of parcels delivered on time	0.00	n/a	0.00	n/a	0.00	n/a
90% of parcels delivered on time					0.23	2.5
95% of parcels delivered on time					0.30	2.9
90% of parcels delivered on time (non-vulnerable)			0.00	n/a		
95% of parcels delivered on time (non-vulnerable)			0.34	1.9		
90% of parcels delivered on time (vulnerable)			0.00	n/a		
95% of parcels delivered on time (vulnerable)			0.00	n/a		
> 90% of parcels delivered on time (non-vulnerable)	0.24	2.1				
> 90% of parcels delivered on time (vulnerable)	0.10	0.9				
Percentage of parcels lost						
No lost parcels	0.00	n/a	0.00	n/a		
5 out of 100 parcels lost					-0.59	-5.0
5 out of 100 parcels lost (non-vulnerable)			-1.44	-5.2		
5 out of 100 parcels lost (vulnerable)			-0.46	-2.9		
5 out of 100 parcels lost (non-vulnerable, age ≥ 60)	-0.49	-1.6				
5 out of 100 parcels lost (non-vulnerable, age < 60)	-1.25	-3.9				
5 out of 100 parcels lost (vulnerable)	-0.83	-7.3				
10 out of 100 parcels lost (non-vulnerable, age ≥ 60)	-0.57	-1.1				
10 out of 100 parcels lost (non-vulnerable, age < 60)	-2.32	-4.1				
10 out of 100 parcels lost (vulnerable, do not use parcel service to return goods)	-0.87	-5.2				
10 out of 100 parcels lost (vulnerable, use parcel service to return goods)	-1.93	-7.5				
10 out of 100 parcels lost (non-vulnerable)			-2.24	-4.7		
10 out of 100 parcels lost (vulnerable)			-0.70	-5.8		
10 out of 100 parcels lost					-1.08	-5.5
Stamp prices						
	-0.24	-6.1	-0.20	-6.8	-0.06	-4.3
Scale parameter - non-vulnerable						
	0.85	3.15	0.52	5.76	1.05	3.96
Scale parameter - vulnerable						
	1.00	n/a	1.00	n/a	1.00	n/a
Model statistics						
Number of observations	2112		1968		1992	
D.O.F.	18		14		12	
Final log likelihood	-1146.8		-1179.9		-1180.9	
Rho ² (c)	0.217		0.135		0.145	

Table B.7: Model results, Experiment 3: residents

Domain level	Sweden		Poland		Italy	
	Coefficient	t-ratio	Coefficient	t-ratio	Coefficient	t-ratio
Accessing postal services						
- Distance to travel						
1 km from home	0.00	n/a	0.00	n/a	0.00	n/a
3 km from home	-0.59	-5.8	-0.51	-4.4	-0.23	-1.8
5 km from home	-0.95	-9.1	-0.72	-4.2	-0.55	-2.6
10 km from home	-1.54	-10.6	-1.15	-5.5		
10 km from home (non vulnerable)					-0.79	-2.9
10 km from home (vulnerable)					-1.08	-4.7
- Opening hours						
open 2 hours per day	0.00	n/a	0.00	n/a	0.00	n/a
open 4 hours per day	0.60	8.8	0.51	6.4		
open 8 hours per day	1.31	16.6	0.96	7.9		
open 4 hours per day (non vulnerable)					0.56	3.8
open 8 hours per day (non vulnerable)					1.23	3.6
open 4 hours per day (vulnerable)					0.37	1.9
open 8 hours per day (vulnerable)					0.85	4.0
- Services available						
Basic postal services available	0.00	n/a	0.00	n/a	0.00	n/a
Full range of postal services available	0.30	5.5	0.23	3.1	0.12	1.4
Full range of postal services and additional financial services such as banking available	0.30	5.5	0.29	3.6	0.21	2.4
Postal network						
Delivery to 100% of addresses	0.00	n/a	0.00	n/a	0.00	n/a
Delivery to 99% of addresses	-0.36	-5.0	-0.21	-2.2	-0.34	-3.4
Delivery to 95% of addresses	-0.50	-5.0			-0.49	-4.1
Delivery to 95% of addresses (non vulnerable)			-0.64	-4.3		
Delivery to 95% of addresses (vulnerable)			-0.43	-3.0		
Pricing						
Same price to any destinations in the country	0.23	3.9			0.09	1.9
Same price to any destinations in the country (non vulnerable)			-0.19	-2.0		
Same price to any destinations in the country (vulnerable)			0.18	1.3		
Different prices to different destinations in the country	0.00	n/a	0.00	n/a	0.00	n/a
Average stamp price						
	-1.05	-10.6	-0.73	-6.3	-0.49	-3.2
Scale parameter -non vulnerable	1.06	8.3	0.90	5.9	1.25	2.8
Scale parameter - vulnerable	1.00	n/a	1.00	n/a	1.00	n/a
Model statistics						
Number of observations	2112		1968		1992	
D.O.F.	11		14		15	
Final log likelihood	-1110.9		-1164.5		-1128.4	
Rho ² (c)	0.236		0.140		0.182	