SMALL AREA ESTIMATION IN THE TECHNOLOGICAL INNOVATION SURVEY OF THE BASQUE COUNTRY

EUSKAL ESTATISTIKA ERAKUNDEA
EUSTAT (BASQUE STATISTICS OFFICE)

Donostia-San Sebastián, 1
01010 VITORIA-GASTEIZ
Tel.: 945 01 75 00
Fax.: 945 01 75 01
e-mail: eustat@eustat.es
www.eustat.es

Presentation

In 2003, Eustat, aware of the growing demand for increasingly disaggregated quality statistics, set up a research team made up of members of Eustat and the University. The objective was to work on improving the estimation techniques in various statistical operations and to introduce small area estimation techniques based on statistical production models. The work resulted in the application of the small area estimation system to the annual Industrial Statistics, published by Eustat in a Technical Notebook in 2005, to the Survey on the Population in Relation to Activity, published by Eustat in a Technical Notebook in 2008, and the Survey on the Information Society – Families, published in a Technical Notebook in 2009.

This estimation methodology has been applied to another statistical operation which is equally relevant within Eustat's statistical production, the Technological Innovation Survey. This survey facilitates knowledge of the endeavour by the different sectors of the economy regarding technological innovation. It also obtains a series of indicators that enables us to compare the level attained in the Basque Country with other countries in our zone.

Specifically, the expenditure on technological innovation and its distribution among the different activities in the Basque Council at Province level is obtained, along with other aspects. The estimations based on small area methods provide information on the statistical districts into which the Basque Country is divided and the Geographical areas including the 3 capitals.

The aim of this publication is to provide material of use to all users interested in knowledge and use of methods for small areas.

This document is divided into two different parts. The first one covers the methodology used, together with certain aspects specific to the estimators and the auxiliary information used; and the second part sets out the district-level results for 2006, 2007 2008 and 2009.

Vitoria-Gasteiz, December, 2010

Javier Forcada Sainz

General Director

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Chapter 1

Introduction

Official statistics currently have to meet a demand for increasingly disaggregated quality information on the main social and economic indicators.

One way to deal with this demand for disaggregation is to increase the sample size, with the ensuing rise in costs, and to continue to apply the design-based estimators currently used in official statistics.

Research is being carried out on using more complex model-based and model-assisted estimation techniques.

This document seeks to disseminate the results of the fourth operation undertaken using this methodology in Eustat, the Technological Innovation Survey, (hereinafter EIT).

In general, there is a move in the international arena towards acceptance of small-area estimations as official statistics, considered to be those that comply with all the requirements of the Code of Good Practice of official statistics. On the one hand, this implies new challenges for research into these methods and, on the other hand, a suitable presentation and explanations of these results to the users.

This document will cover different aspects. On the theoretical side, there are two parts: firstly, the main characteristics of the Information Technology Survey will be set out, with the estimators of results and errors used (Chapter 2), followed by a presentation of the small-area estimation system applied to the EIT (Chapter 3).

The application sector discusses the results obtained from the aforementioned survey, using this methodology, for the provincial capitals and districts of the Basque Country. Results are given for the following concepts: Expenditure on Innovation and Percentage of Innovative Companies by Type of Innovation. Finally, the conclusions from this project will be drawn (Chapter 5) and the Bibliography is given. The Annex details the division of municipalities into districts in the Basque Country.

Chapter 2

Technological Innovation Survey (EIT)

2.1 Description of the Technological Innovation Survey of the Basque Country

Over recent years, innovation and technological change have acquired a key role when performing economic analysis and in the decision taking policies of developed countries.

Furthermore, and due to the idea that innovation, in the new knowledge-based society, is one of the key factors for the success of companies, there has been a recent increasing worldwide need to measure the innovation processes.

Thus, and driven by the need to be able to provide society with information about the innovation process in companies, the Basque Statistics Office (EUSTAT) conducts the Technological Innovation Survey: The survey is then used to produce different indicators that provide information on different aspects of that process, such as expenditure on innovative activities, the number of companies involved in technological innovation (whether new or notably products or processes), its economic impact on turnover, public funding received, the degree of cooperation between different companies or between establishments of a single company, the factors that hinder innovation, etc. In 2006, it also began to cover non-technological innovation, that is innovation that has to do with organisation and marketing.

The EIT reference population are Basque companies, irrespective of their size or economic activity sector, except for the primary sector, public administration and domestic service. The sample frame is the Directory of Economic Activities of the Basque Country. The first year for which complete data is available for the EIT is 2003. Since then, the survey has undergone some changes to the sample size and design, as well as to the weighting procedures.

The EIT data is obtained from a questionnaire put to a panel, that each year includes the companies that were surveyed in previous years. Furthermore, the panel sample is updated annually due to different incidents and to fluctuations in the population framework.

The step from the sample data to the estimations is taken after a calibration or weighting process. In this process, weights are calculated for establishments, according to the economic activities directory. The stratification used takes into account the Province, employment and the economic activity of the establishment.

The EIT uses an internationally accepted methodology so ensure that the results obtained are comparable with those provided by other sources, such as Eurostat, INE, etc.

2.2 Estimators used in the Technological Innovation Survey of the Basque Country

2.2.1 Definition of the estimators and weighting formulas

A director estimator, specifically, the Horvitz-Thompson estimator is used to calculate the estimations. The estimation for the total in a population of the variable being studied and using the Horvitz-Thompson estimator is defined as:

$$\hat{y}_{HT} = \sum w_j y_j$$

In the case of the Technological Innovation Survey, given that the aim is not only to obtain an estimator for the total population, but also for different domains that make up that population (province, activity sector, employment stratum, etc.), the Horvitz-Thompson estimator is defined for any domain d as follows:

$$\hat{y}_{dHT} = \sum_{j}^{n_d} w_{dj} y_{dj}$$

where:

j indicates the establishment,

d the domain for which the estimation is to be obtained,

y_{dj} is the value of the variable being studied in establishment j of domain d,

w_{dj} is the relevant population weight, and

n_d the sampling size in domain d.

2.2.2 Estimation method of the sampling errors

The Taylor Expansion Method was used. It enables the calculation of sampling error estimates for totals, means and ratios in samples with stratification, clusters and unequal probabilities. The method obtains linear approximations of the estimator and calculates the variance by using it as an estimate of the sampling variance.

The expression to calculate the estimate variance for the mean population is as follows:

(2)

$$\overline{V}\left(\hat{\overline{Y}}\right) = \sum_{h=1}^{H} \frac{n_h\left(1-f_h\right)}{n_h-1} \sum_{i=1}^{n_h} \left(e_{hi\cdot} - \overline{e}_{h\cdot\cdot}\right)^2$$

where:

$$e_{hi\cdot} = \left(\sum_{j=1}^{m_{hi}} w_{hij} \left(y_{hij} - \hat{\bar{Y}} \right) \right) \Big/ w_{\cdots}$$

$$\bar{e}_{h\cdot\cdot} = \left(\sum_{i=1}^{n_h} e_{hi\cdot} \right) \; / \; n_h$$

and

$$w_{\cdots} = \sum_{h=1}^{H} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij}$$

Notation:

$h = 1, 2, \ldots, H$ indicates the stratum with a total H strata.
$i = 1, 2, \ldots n_h$ indicates the number of clusters in stratum h, with a total of n_h clusters.
$j = 1, 2, \ldots, m_{hi}$ indicates the unit number within cluster i of stratum h, with a total of m_{hi} units

$$n = \sum_{h=1}^{H} \sum_{i=1}^{n_h} m_{hi}$$

is the total number of observations in the sample.

w_{hij} indicates the weighting of observation j in cluster i of stratum h

$Y_{hij} = (Y_{hij}(1), Y_{hij}(2), \ldots, Y_{hij}(P))$ are the values observed of variable Y in observation j of cluster i of stratum h. (numeric and categorical variables).

This calculation was performed using the PROC SURVEYMEANS procedure from the SAS statistical package (Sas Institute Inc. 2004).

Chapter
3

Small Area Estimation System in the EIT

3.1 Estimator Study

The estimation methodology was established using the analysis of various estimators, both classic and model-assisted and model-based, to estimate expenditure on innovation and the number of innovative establishments with over 10 employees in the provincial capitals, districts and geographical areas of the Basque Country.

The auxiliary information is provided by the number of employees variable (EMPLOYMENT). This variable is obtained from the economic activities directory. The total populations of the number of employees per domain are needed in order to obtain the final forecasts per district.

The estimators were evaluated by comparing the mean squared error.

The following were evaluated:

- Design-based estimators
- Model-based estimators

3.1.1 Design-based estimators.

3.1.1.1 Post-stratified

$$\hat{y}_d^{post} = \sum_g X_{dg} \frac{\hat{y}_{dg}}{\hat{x}_{dg}} \quad \text{with} \qquad \hat{y}_{dg} = \sum_{j=1}^{n_{dg}} \tilde{w}_j y_j \qquad \hat{x}_{dg} = \sum_{j=1}^{n_{dg}} \tilde{w}_j x_j$$

where

y_j is the value of the variable being studied in establishment j (expenditure, technological, non-technological innovation),
x_j is the value of the auxiliary variable in establishment j,
X_{dg} total population of the auxiliary variable in the establishments in domain or district d and employment group,
n_{dg} sample size of domain and employment group,
$\tilde{w}_j$ is the final population weight of establishment j,
g are the employment groups, SMEs (10-249) and >=250.

3.1.1.3 Synthetic

$$\hat{y}_d^{\sin t} = \sum_{g=1} X_{dg} \frac{\hat{y}_g}{\hat{x}_g} \quad \text{with} \qquad \hat{y}_g = \sum_{j=1}^{n_g} \tilde{w}_j y_j \qquad \hat{x}_g = \sum_{j=1}^{n_g} \tilde{w}_j x_j$$

where

y_j is the value of the variable being studied in establishment j (expenditure, technological, non-technological innovation),

x_j is the value of the auxiliary variable in establishment j,

X_{dg} total population of the auxiliary variable in the establishments of the employment group, SMEs 10-249) and >250, in the defined district.

n_g sample size of the employment group, SMEs (10-249) and >=250

$\tilde{w}_j$ is the final population weight of establishment j

g are the employment groups, SMEs (10-249) and >=250.

3.1.1.4 Composites

Different types of composite estimator are analysed. The first one, which is hereafter composite0, is defined as follows:

$$\hat{y}_d^{comp} = \lambda_d \hat{y}_d^{post} + (1-\lambda_d)\hat{y}_d^{\sin t} \qquad \lambda_d = \frac{n_d}{N_d}$$

$$0 \le \lambda_d \le 1$$

where

N_d number of establishments of district d,

n_d sample size of district d.

The choice of this λ is particularly appropriate for populations that are not very larger, as the quotient would otherwise not necessarily favour the direct estimator when n_d grows.

With these weights, the weight of the indirect or director estimator is greater according to its sampling representation. That is, the greater the sample fraction, the greater the contribution of the direct estimator is. When sample is not very representative in the population, the indirect estimator has more weight in the composite estimator. It can also

occur that nd = 1 and Nd =1, in which case the composite estimator would be equal to the direct one.

The following composite estimators are:

$\hat{y}_d^{comp} = \lambda_d \hat{y}_d^{post} + (1-\lambda_d)\hat{y}_d^{\sin t}$ where $\hat{y}_d^{post}$ is the post-stratified direct estimator and $\hat{y}_d^{\sin t}$ is the synthetic estimator and $0 \le \lambda_d \le 1$ is given by:

$$\lambda_d = \begin{cases} 1 \text{ si } \hat{N}_d \ge \alpha N_d \\ \dfrac{\hat{N}_d}{\alpha N_d} \text{ in other case} \end{cases}$$

$\hat{N}_d = \sum_d w_j$ is the total population estimated in each area d and α is a parameter. The composite estimator is worked out for different values of $\alpha = 2/3, 1, 1.5$ and 2. Hereafter, composite1 ($\alpha = 2/3$), composite2 ($\alpha = 1$), composite3 ($\alpha = 1.5$) and composite4 ($\alpha = 2$).

3.1.2 Model-based estimators

3.1.2.1 Estimators based on fixed-effect linear model

The fixed-effect linear model is as follows:

ydj = β1xdj + β2zdj + edj

with *d = 1, . . . ,ts,* and *j = 1, . . . , n_d,*

where β1 and β2 are the fixed effects of the models and edj are the specific random errors of each establishment edj~ $N(0, \sigma_e^2 c_{dj}^{-1})$, with cdj=1, $1/x_{dj}$, $1/x^2_{dj}$

where:

ts number of districts where sampling has been carried out

d district

j the establishment

nd number of establishments sampled in district d

ydj is the variable of interest for establishment j of district d,

xdj value of the auxiliary variable (employment) in district d,

zdj = 1 if establishment j belongs to district d

0 on the contrary

Xd the total population of auxiliary variable in district d

Nd the number of establishments in district d

The estimator of the total is calculated as follows:

$$\hat{y}_d = \hat{\beta}_1 X_d + \hat{\beta}_2 N_d$$

3.1.2.1 Estimators based on a mixed-linear model

The mixed linear model is as follows:

ydj = βxdj + vd + edj

with *d = 1, . . . ,ts,* and *j = 1, . . . , n_d,*

where β is the fixed effect of the model, vd the common random effect for all the establishments of district d, vd ~ N(0,σ2v) and edj are the specific random errors of each edj~ $N(0, \sigma_e^2 c_{dj}^{-1})$, with cdj=1, 1/xdj, 1/x2dj

where:

t_s number of districts where sampling has been carried out

d district

j the establishment

n_d number of establishments sampled in district d

ydj is the variable of interest for establishment *j* of district *d*,

xdj value of the auxiliary variable (employment) in district *d*,

The estimator of the total is calculated as follows:

$$\hat{y}_d = \hat{\beta} X_d + \hat{v}_d N_d$$

3.1.2.1 Estimators based on a logistic regression model

The is as follows:

$$\log it(p_{dj}) = \log(\frac{p_{dj}}{1-p_{dj}}) = \beta x_{dj} + e_{dj}$$

with d = 1, . . . ,t_s, and *j = 1, . . . ,* n_d,

where β is the parameter to be estimated and e_{dj} are the specific random errors of each establishment

where:

t_s number of districts where sampling has been carried out

d district

j the establishment

n_d number of establishments sampled in district d

pdj is the probability that establishment j of district d takes the value 1, that is it is innovative

xdj value of the auxiliary variable (employment) in district *d,*

Xd the total population of auxiliary variable in district d

The estimator of the total is calculated as follows:

$$\hat{p}_d = \sum_{j=1}^{N_d} \frac{e^{\hat{\beta} x_{dj}}}{1+e^{\hat{\beta} x_{dj}}}$$

3.2 Estimation of the mean squared error

3.2.1 Procedures to calculate the mean squared error (MSE)

The bootstrap resampling method was used to calculate the mean squared error. Reampling methods are based on the evaluation of the statistics in resamples or sub-samples obtained from the original data and these values are used to obtain estimators of the accuracy measurement or of the sampling distribution of the statistics.

In the case of the bootstrap method, sub sub-samples are obtained using stratified random sampling where the strata are defined by the size of the establishment where a distinction is made between two strata: the first made up of the establishments with between 10 and 249 employees and the second of the establishment with 250 and more employees. In the specific case of the

Technological Innovation Survey, the sampling of establishments with 250 and more employees is by census and, therefore, this characteristic is also going to be retained in each one of the sub-samples.

The following indices are used below:

- h is the stratum number, where $h = 1,2,..,H$ (3 provinces)
- i is the i-th cluster in stratum h, where $i = 1,2,..,n_h$
- j is the j-th unit from cluster I in stratum h, where $j = 1,2,..,m_{hi}$

.

The method to calculate the MSE is applied for the composite, synthetic and post-stratified estimators (0, 1, 2, 3 and 4) ($\hat{\theta}$ refers below to any of the aforementioned three estimators). Model-based estimations are discarded prior to the error calculation and no method is therefore included in this document to calculate the errors for those estimators.

3.2.1.1 Bootstrap estimation of the mean squared error

The steps are described below to construct the version of the rescaled bootstrap in a stratified simple sampling proposed by Rao and Wu (1988).

1. After establishing stratum h, we have a sample with n_h clusters (The combination of province, activity sector and employment). Let nh1 be the number of clusters in the employment stratum of establishments with 250 and more employees and let nh2 be the number of remaining clusters, therefore, nh = nh1 + nh2.

   The sub-sample is constructed as the set of the nh1 clusters of the employment stratum of 250 and more employees and a sub-sample with nh2 -1 clusters extracted by means of a simple random sample with re-positioning of the sample of province h for the other employment strata. This process is repeated independently in each province.

2. For each sub-sample r (r=1,2,..R), a new weight is constructed: $w_{hij}(r) = \tilde{w}_{hij} \frac{n_h}{n_h - 1} m_i(r)$ where $\tilde{w}_{hij}$ is the original weight, that is, the final population weight, n_h s the number of clusters in province h and $m_i(r)$ is the number of times that cluster i is selected in the sub-sample.

   $\hat{\theta}_r^*$ is calculated using the new weights $w_{hij}(r)$.

3. Steps 1 and 2 are repeated, R times.

4. In order to obtain the bootstrap estimator of the mean squared error, we perform:

$$\hat{MSE}_d^B\left(\hat{\theta}\right)=\frac{1}{R-1}\sum_{r=1}^{R}\left(\hat{\theta}_r^*-\hat{\theta}\right)^2$$

The estimations of the mean squared error at provincial level are performed as the total of the estimations of the mean squared error of the districts of the province:

$$\hat{MSE}_{TH}^B\left(\hat{\theta}\right)=\sum_d \hat{MSE}_d^B=\sum_d \frac{1}{R-1}\sum_{r=1}^{R}\left(\hat{\theta}_r^*-\hat{\theta}\right)^2$$

and the estimations of the mean squared error at the level of the Basque Autonomous Community are performed as the total of the estimations of the mean squared error of the provinces.

The squared roots of the relevant mean squared errors are given by:

$$\hat{RMSE}^B\left(\hat{\theta}\right)=\sqrt{\hat{MSE}^B(\hat{\theta})}$$

and therefore:

$$\hat{CV}^B\left(\hat{\theta}\right)=\frac{\hat{RMSE}^B(\hat{\theta})}{\hat{\theta}}$$

One of the issues to be decided is the size of R so that the method works correctly. Different values of R were considered and it was observed that there was no difference in behaviour depending on the sizes of R. In the light of the results, it was decided to use R=500.

3.3 Conclusions

The use of models for all the study variables of the Technological Innovation Survey was ruled out. The main reasons was that there is no clear relationship between the variables studied (expenditure on innovation activities, number of non-technological or technological innovative establishments) with the available auxiliary variable, number of employees, in any of the classifications (SMEs and >=250 employees and activity sectors).

During the small-area estimation study, the aim is to use other auxiliary variables, such as identifying establishments involved in R&D. Their use was ruled out as there was no relationship with the variables being studied.

All the estimations were disaggregated by employment stratum and activity sector. It should be pointed out that the employment stratum for the establishments with 250 and more employees is censual. The use of a direct estimator is more convenient in that stratum. Given that the post-stratified estimator is also a direct estimator that uses the number of employees auxiliary variable, the use of this estimator is also recommended.

As far as the different composite estimators are concerned, no great differences were observed between them, although it can be seen that the composite 0 is the one that is most different from the others.

With regard to the errors, there were also no important differences between the variation coefficients obtained by means of the Bootstrap resampling method with each of the different composites.

In general terms, the table show that the composite estimator that provides lower estimations of the variation coefficient is the composite 0 estimator, in other words, the one that uses the n_d/N_d sampling fraction, where d indicates the district, as weighting in the linear combination of the post-stratified estimator and the synthetic estimator.

Furthermore, the graphs also show that said estimator provides more stable estimations of the variation coefficient.

Once the study had been performed with all the designed-based estimators, the more appropriate estimator by districts was seen to be composite 0, which include employment as an auxiliary variable. Composite 0, with $\lambda_d = n_d/N_d$, is particularly appropriate for populations that are not very large, where the weight is distributed between the indirect or direct estimator to a greater or lesser extent, depending on its sample representation.

3.4 Software used

A computer programme based on SAS was used to analyse this methodology and the application of the aforementioned estimators. Specific macro programmes were written which execute the different tasks outline: production of estimations by district and the calculation of the mean squared errors for the different methods.

The macro provides estimations calculated using the composite estimator (the alpha parameter is an entry parameter). As this is a combination of a post-stratified and a synthetic estimator, it also provides estimations calculated using these estimators.

Other entry parameters of this macro are: the variables to be estimated, the auxiliary variables to be used, the option of calibrating the district-level estimations to the provincial ones through the direct estimation of the survey and the mean squared error estimation method.

The programme also offers the possibility of obtaining mean squared errors and their relevant variation coefficients (quotient of the square root of the mean square error and the estimation).

This macro is applied annually to the EIT samples. The parameters deemed to be best are used to obtain the estimations of the aforementioned figures and their mean squared errors.

Chapter
4

Estimations 2006-2009

4.1 Definitions

The estimations obtained applying the aforementioned estimation system for the Technological Innovation Survey (EIT) for 2006-2009 are set out below.

The estimations refer to expenditure on innovation and the percentage of innovative establishments by type of innovation, in the 3 provincial capital, districts and geographical areas of the Basque Country.

Along with the estimations, the tables of their variation coefficients (VC) are also included below.

The official division of the Basque Country into districts is as follows:

Alava: Valles Alaveses, Llanada Alavesa, Montaña Alavesa, Rioja Alavesa, Estribaciones del Gorbea and Cantábrica Alavesa. In this publication we have gathered the results of the regions Alaveses Montaña Alavesa and Estribaciones del Gorbea, in a region Rest Alava because precision criteria

Bizkaia: Arratia-Nervión, Gran Bilbao, Duranguesado, Encartaciones, Gernika-Bermeo, Markina-Ondarroa and Plentzia-Mungia

Gipuzkoa: Bajo Bidasoa, Bajo Deba, Alto Deba, Donostia-San Sebastián, Goierri, Tolosa and Urola Costa

(See Annex for the list of districts and the geographical areas and its municipalities)

The most important results are set out below.

4.2 Results

Table 1. Expenditure on technological innovation and variation coefficients for establishments with 10 or more employees by province, District and Provincial Capitals of the Basque Country 2006-2009 (millions of euros)

Source: EUSTAT. Survey on Technological Innovation -EIT

	2006		2007		2008		2009	
	Total	CV	Total	CV	Total	CV	Total	CV
Basque Country	**1829,7**	**0,07**	**2030,0**	**0,07**	**2193,9**	**0,08**	**2219,9**	**0,06**
Vitoria - Gasteiz	337,0	0,14	357,7	0,12	371,1	0,16	338,4	0,12
Bilbao	230,1	0,17	244,3	0,18	266,5	0,18	278,1	0,14
Donostia - San Sebastian	154,9	0,27	162,4	0,35	190,5	0,33	207,2	0,23
Araba	**420,2**	**0,12**	**456,1**	**0,10**	**471,9**	**0,13**	**444,1**	**0,10**
Arabako Lautada / Llanada Alavesa	355,7	0,14	389,4	0,12	399,6	0,15	366,4	0,12
Errioxa Arabarra / Rioja Alavesa	9,2	0,22	9,8	0,22	13,1	0,19	10,7	0,23
Kantauri Arabarra / Cantábrica Alavesa	25,5	0,46	29,2	0,26	37,2	0,14	47,8	0,09
Arabako Besteak / Resto de Alava	29,8	0,30	27,6	0,36	22,1	0,20	19,2	0,24
Bizkaia	**791,1**	**0,12**	**899,1**	**0,12**	**962,9**	**0,12**	**1013,2**	**0,10**
Arratia Nerbioi / Arratia-Nervión	19,7	0,17	18,7	0,16	25,5	0,14	24,1	0,16
Bilbo Handia / Gran Bilbao	642,6	0,14	728,9	0,15	770,4	0,15	805,2	0,12
Durangaldea / Duranguesado	78,1	0,18	90,1	0,18	108,8	0,16	114,4	0,15
Enkartazioak / Encartaciones	6,9	0,26	6,1	0,28	6,6	0,28	7,7	0,20
Gernika-Bermeo	14,4	0,27	17,3	0,35	17,7	0,26	20,6	0,21
Markina-Ondarroa	11,6	0,15	16,8	0,11	14,2	0,15	17,3	0,18
Plentzia-Mungia	17,8	0,21	21,1	0,28	19,8	0,24	23,9	0,25
Gipuzkoa	**618,3**	**0,11**	**674,9**	**0,12**	**759,1**	**0,12**	**762,6**	**0,09**
Bidasoa Beherea / Bajo Bidasoa	43,7	0,18	45,3	0,20	48,8	0,20	49,0	0,18
Deba Beherea / Bajo Deba	47,9	0,30	55,9	0,32	57,0	0,39	56,8	0,32
Deba Garaia / Alto Deba	91,7	0,20	93,1	0,24	116,5	0,14	112,4	0,10
Donostialdea	266,5	0,24	289,3	0,26	337,2	0,26	348,7	0,19
Goierri	91,1	0,09	109,7	0,08	100,5	0,09	101,4	0,13
Tolosaldea / Tolosa	26,8	0,26	28,4	0,26	35,3	0,25	36,0	0,22
Urola-Kostaldea / Urola Costa	50,6	0,27	53,2	0,24	63,7	0,27	58,3	0,23

Table 2. Percentage and variation coefficients for technological innovation establishments with 10 or more employees by Province, Provincial Capitals and District of the Basque Country 2004-2006 / 2007-2009

Source: EUSTAT. Survey on Technological Innovation -EIT

	2004-2006		2005-2007		2006-2008		2007-2009	
	Total	CV	Total	CV	Total	CV	Total	CV
Basque Country	**32,7%**	**0,07**	**32,0%**	**0,06**	**31,5%**	**0,06**	**29,8%**	**0,05**
Vitoria - Gasteiz	33,2%	0,15	28,9%	0,14	28,1%	0,13	29,1%	0,12
Bilbao	29,1%	0,15	29,0%	0,15	29,5%	0,14	27,6%	0,12
Donostia - San Sebastian	39,3%	0,21	35,8%	0,15	33,4%	0,15	31,5%	0,13
Alava	**34,3%**	**0,12**	**30,1%**	**0,10**	**29,9%**	**0,09**	**30,4%**	**0,10**
Arabako Lautada / Llanada Alavesa	33,0%	0,14	29,1%	0,13	28,2%	0,12	29,1%	0,12
Errioxa Arabarra / Rioja Alavesa	30,6%	0,20	29,5%	0,16	38,2%	0,26	33,3%	0,22
Kantauri Arabarra / Cantábrica Alavesa	47,5%	0,27	40,1%	0,20	39,8%	0,12	37,7%	0,17
Arabako Besteak / Resto de Alava	34,4%	0,18	30,2%	0,16	31,4%	0,15	33,7%	0,27
Bizkaia	**30,5%**	**0,12**	**29,9%**	**0,11**	**29,4%**	**0,10**	**27,9%**	**0,10**
Arratia Nerbioi / Arratia-Nervión	35,5%	0,17	33,1%	0,16	31,6%	0,14	31,3%	0,18
Bilbo Handia / Gran Bilbao	29,7%	0,16	29,0%	0,15	28,6%	0,13	26,9%	0,12
Durangaldea / Duranguesado	33,1%	0,15	33,1%	0,14	32,9%	0,13	31,4%	0,12
Enkartazioak / Encartaciones	29,0%	0,14	30,4%	0,20	27,8%	0,16	25,9%	0,18
Gernika-Bermeo	34,4%	0,16	35,8%	0,24	35,3%	0,20	35,2%	0,24
Markina-Ondarroa	33,0%	0,15	31,5%	0,14	32,1%	0,21	30,5%	0,20
Plentzia-Mungia	34,4%	0,14	31,6%	0,16	30,9%	0,17	34,3%	0,15
Gipuzkoa	**35,3%**	**0,09**	**36,3%**	**0,07**	**35,4%**	**0,07**	**32,2%**	**0,06**
Bidasoa Beherea / Bajo Bidasoa	29,6%	0,16	38,2%	0,19	29,7%	0,14	25,1%	0,12
Deba Beherea / Bajo Deba	34,9%	0,14	39,2%	0,14	34,7%	0,13	33,8%	0,14
Deba Garaia / Alto Deba	37,8%	0,15	40,7%	0,13	42,7%	0,12	36,9%	0,13
Donostialdea	35,7%	0,18	34,4%	0,14	34,6%	0,13	31,7%	0,12
Goierri	36,8%	0,15	39,2%	0,17	36,9%	0,14	34,6%	0,14
Tolosaldea / Tolosa	34,3%	0,17	31,8%	0,15	34,7%	0,14	33,8%	0,14
Urola-Kostaldea / Urola Costa	35,8%	0,15	37,8%	0,14	38,0%	0,13	33,1%	0,11

Table 3. Percentage and variation coefficients for non-technological innovation establishments with 10 or more employees by Province, Provincial Capitals and District of the Basque Country 2004-2006 / 2007-2009

Source: EUSTAT. Survey on Technological Innovation -EIT

	2004-2006		2005-2007		2006-2008		2007-2009	
	Total	CV	Total	CV	Total	CV	Total	CV
Basque Country	**26,8%**	**0,07**	**25,7%**	**0,07**	**27,4%**	**0,06**	**26,3%**	**0,06**
Vitoria - Gasteiz	30,6%	0,16	28,1%	0,17	22,1%	0,13	20,9%	0,13
Bilbao	22,5%	0,14	22,1%	0,15	27,6%	0,14	26,2%	0,14
Donostia - San Sebastian	33,1%	0,21	31,7%	0,17	30,7%	0,17	29,4%	0,17
Alava	**31,2%**	**0,12**	**28,9%**	**0,13**	**23,1%**	**0,10**	**21,4%**	**0,10**
Arabako Lautada / Llanada Alavesa	30,7%	0,15	28,4%	0,16	22,1%	0,12	20,9%	0,12
Errioxa Arabarra / Rioja Alavesa	24,1%	0,17	26,8%	0,22	24,5%	0,25	21,6%	0,25
Kantauri Arabarra / Cantábrica Alavesa	42,1%	0,30	31,3%	0,19	30,4%	0,19	24,6%	0,19
Arabako Besteak / Resto de Alava	28,8%	0,16	32,5%	0,16	23,4%	0,15	23,4%	0,15
Bizkaia	**22,7%**	**0,11**	**22,7%**	**0,11**	**27,0%**	**0,11**	**26,0%**	**0,11**
Arratia Nerbioi / Arratia-Nervión	23,9%	0,14	24,1%	0,12	28,9%	0,14	30,0%	0,14
Bilbo Handia / Gran Bilbao	22,3%	0,14	22,1%	0,14	26,6%	0,14	25,3%	0,14
Durangaldea / Duranguesado	24,3%	0,15	25,2%	0,14	28,5%	0,14	27,1%	0,14
Enkartazioak / Encartaciones	21,5%	0,16	19,6%	0,17	27,8%	0,20	29,4%	0,20
Gernika-Bermeo	24,2%	0,18	29,1%	0,25	29,9%	0,17	31,0%	0,17
Markina-Ondarroa	22,6%	0,17	22,5%	0,17	27,4%	0,16	26,6%	0,16
Plentzia-Mungia	27,3%	0,17	24,9%	0,20	29,4%	0,18	31,3%	0,18
Gipuzkoa	**30,6%**	**0,09**	**28,5%**	**0,08**	**30,0%**	**0,08**	**29,0%**	**0,08**
Bidasoa Beherea / Bajo Bidasoa	25,8%	0,15	22,9%	0,15	24,8%	0,16	23,6%	0,16
Deba Beherea / Bajo Deba	28,8%	0,14	28,7%	0,14	29,6%	0,17	26,6%	0,17
Deba Garaia / Alto Deba	33,4%	0,12	31,1%	0,13	33,0%	0,12	30,9%	0,12
Donostialdea	30,7%	0,18	29,1%	0,16	30,0%	0,15	29,0%	0,15
Goierri	32,8%	0,15	27,3%	0,16	30,6%	0,17	31,7%	0,17
Tolosaldea / Tolosa	31,0%	0,18	25,8%	0,14	29,1%	0,14	31,2%	0,14
Urola-Kostaldea / Urola Costa	32,0%	0,16	31,2%	0,17	32,9%	0,14	30,7%	0,14

Table 4. Percentage and variation coefficients for non-technological and/or technological innovation establishments with 10 or more employees by Province, Provincial Capitals and District of the Basque Country 2004-2006 / 2007-2009

Source: EUSTAT. Survey on Technological Innovation -EIT

	2004-2006		2005-2007		2006-2008		2007-2009	
	Total	CV	Total	CV	Total	CV	Total	CV
Basque Country	**42,2%**	**0,06**	**40,6%**	**0,06**	**41,2%**	**0,05**	**38,9%**	**0,05**
Vitoria - Gasteiz	44,9%	0,12	40,5%	0,14	36,5%	0,11	36,3%	0,11
Bilbao	38,0%	0,12	34,4%	0,14	36,5%	0,11	36,9%	0,11
Donostia - San Sebastian	49,2%	0,16	50,4%	0,15	41,8%	0,11	42,2%	0,11
Alava	**45,9%**	**0,10**	**41,9%**	**0,11**	**37,7%**	**0,08**	**37,7%**	**0,08**
Arabako Lautada / Llanada Alavesa	45,0%	0,12	40,7%	0,14	35,9%	0,11	36,4%	0,10
Errioxa Arabarra / Rioja Alavesa	40,7%	0,14	41,1%	0,15	44,5%	0,20	38,7%	0,20
Kantauri Arabarra / Cantábrica Alavesa	58,5%	0,22	50,5%	0,18	49,2%	0,14	45,0%	0,15
Arabako Besteak / Resto de Alava	44,8%	0,15	45,0%	0,13	38,9%	0,13	42,7%	0,20
Bizkaia	**39,3%**	**0,10**	**35,4%**	**0,10**	**40,1%**	**0,09**	**37,0%**	**0,08**
Arratia Nerbioi / Arratia-Nervión	44,2%	0,13	37,9%	0,14	41,4%	0,12	40,0%	0,15
Bilbo Handia / Gran Bilbao	38,4%	0,12	34,3%	0,13	39,1%	0,12	35,9%	0,11
Durangaldea / Duranguesado	42,6%	0,12	39,9%	0,13	44,4%	0,11	40,7%	0,11
Enkartazioak / Encartaciones	36,4%	0,12	34,8%	0,17	40,0%	0,15	36,6%	0,17
Gernika-Bermeo	41,4%	0,13	42,4%	0,18	46,7%	0,16	46,1%	0,16
Markina-Ondarroa	41,5%	0,13	36,9%	0,14	45,3%	0,15	37,1%	0,18
Plentzia-Mungia	44,8%	0,12	37,3%	0,16	42,2%	0,15	45,2%	0,13
Gipuzkoa	**44,6%**	**0,07**	**47,9%**	**0,07**	**44,6%**	**0,06**	**42,2%**	**0,06**
Bidasoa Beherea / Bajo Bidasoa	38,2%	0,12	46,9%	0,18	37,5%	0,13	33,9%	0,10
Deba Beherea / Bajo Deba	43,3%	0,12	49,2%	0,13	44,2%	0,12	43,0%	0,12
Deba Garaia / Alto Deba	48,1%	0,12	52,1%	0,12	51,4%	0,11	46,8%	0,11
Donostialdea	45,3%	0,14	47,2%	0,14	44,5%	0,12	42,0%	0,11
Goierri	46,1%	0,12	48,9%	0,15	45,0%	0,13	44,4%	0,11
Tolosaldea / Tolosa	42,3%	0,14	42,4%	0,13	43,3%	0,11	44,0%	0,13
Urola-Kostaldea / Urola Costa	46,0%	0,13	51,0%	0,14	47,2%	0,12	43,4%	0,11

Table 5. Expenditure on technological innovation and variation coefficients for establishments with 10 or more employees by province and geographical area of the Basque Country 2006-2009 (millions of euros)

Source: EUSTAT. Survey on Technological Innovation -EIT

	2006		2007		2008		2009	
	Total	CV	Total	CV	Total	CV	Total	CV
Basque Country	**1829,7**	**0,07**	**2030,0**	**0,07**	**2193,9**	**0,08**	**2219,9**	**0,06**
Araba	**420,2**	**0,12**	**456,1**	**0,10**	**471,9**	**0,13**	**444,1**	**0,10**
Vitoria-Gasteiz	337,0	0,14	357,7	0,12	371,1	0,16	338,4	0,16
Arabako Lautadako Besteak / Resto de Llanada Alavesa	18,5	0,12	30,9	0,07	28,8	0,08	26,8	0,08
Errioxa Arabarra / Rioja Alavesa	9,3	0,22	9,8	0,22	13,1	0,19	10,7	0,19
Kantauri Arabarra / Cantábrica Alavesa	25,5	0,46	29,2	0,26	37,2	0,14	47,8	0,09
Arabako Besteak / Resto de Alava	30,1	0,30	27,6	0,36	22,2	0,20	19,2	0,20
Bizkaia	**791,1**	**0,12**	**899,1**	**0,12**	**962,9**	**0,12**	**1013,2**	**0,10**
Santurtzi	6,3	0,28	7,5	0,26	7,7	0,26	9,6	0,21
Portugalete	10,3	0,19	11,4	0,19	12,7	0,19	9,8	0,27
Sestao	7,5	0,16	24,6	0,06	13,9	0,11	24,3	0,05
Barakaldo	26,8	0,23	30,4	0,22	42,9	0,17	46,5	0,14
Basauri	15,5	0,26	21,4	0,21	30,8	0,17	24,9	0,17
Galdakao	13,9	0,25	18,3	0,19	19,0	0,19	25,4	0,12
Eskerraldeko Besteak / Resto margen izquierda	86,3	0,14	91,3	0,16	88,6	0,16	67,9	0,17
Getxo	16,8	0,22	34,6	0,13	32,2	0,15	46,8	0,09
Leioa	72,6	0,05	74,4	0,05	98,1	0,06	123,9	0,03
Erandio	20,2	0,23	24,6	0,19	21,3	0,24	24,3	0,22
Eskuinaldeko Besteak / Resto margen derecha	132,8	0,13	144,8	0,15	131,4	0,20	123,3	0,19
Bilbao	230,1	0,17	244,3	0,18	266,5	0,18	278,1	0,14
Arratia Nerbioi / Arratia-Nervión	6,9	0,26	6,1	0,28	6,6	0,28	7,6	0,20
Enkartazuioak / Encartaciones	20,6	0,17	19,0	0,16	26,5	0,14	24,1	0,16
Durango	9,5	0,25	11,7	0,24	12,7	0,25	14,4	0,26
Daurangaldeako Besteak / Resto Duranguesado	70,2	0,18	78,9	0,18	99,5	0,16	100,6	0,14
Gernika-Bermeo	14,5	0,27	17,2	0,35	17,9	0,26	20,6	0,21
Markina-Ondarroa	12,1	0,15	17,2	0,11	14,7	0,15	17,3	0,18
Plentzia Mungia	18,2	0,21	21,2	0,28	20,0	0,24	23,7	0,25
Gipuzkoa	**618,3**	**0,11**	**674,9**	**0,12**	**759,1**	**0,12**	**762,6**	**0,09**
Hondarribia	4,2	0,25	5,0	0,22	6,2	0,21	6,7	0,15
Irun	39,1	0,17	39,7	0,20	42,1	0,21	42,2	0,18
Deba Behera / Bajo Deba	47,7	0,30	55,3	0,32	56,9	0,39	56,8	0,32
Arrasate-Mondragón	41,7	0,20	44,4	0,29	56,9	0,14	52,1	0,11
Deba Garaiako Besteak / Resto Alto Deba	48,2	0,22	47,4	0,22	56,3	0,17	61,5	0,11
Donostia-San Sebastián	154,9	0,27	162,4	0,35	190,5	0,33	207,2	0,23
Errenteria	40,4	0,06	44,3	0,06	46,3	0,06	35,6	0,06
Donostialdeako Besteak / Resto de Donostialdea	76,2	0,26	88,3	0,25	104,5	0,25	104,5	0,20
Goierri	89,4	0,09	107,7	0,08	98,8	0,09	102,0	0,13
Tolosaldea	26,8	0,26	28,2	0,26	35,3	0,25	35,9	0,22
Zarautz	7,9	0,29	8,7	0,28	11,4	0,27	11,4	0,18
Urola Kostako Besteak / Resto Urola Costa	41,7	0,27	43,5	0,24	54,0	0,26	46,7	0,25

Chapter
5

Conclusions

The growing demand for disaggregated information and need not to overburden the informants mean a progressively greater use of model-based estimation methods in official statistics.

Obtaining estimations of the figures related activity in small areas such as districts, as described in this paper, is a step forward in the application by the Statistics Office of the new estimation model-based methodologies.

In general, the results set out here offer acceptable levels of quality in terms of accuracy. The estimated variation coefficients are not excessively high, given the relatively small samples and population in some districts. The majority of the variation coefficients (VC) obtained in the estimations do not exceed 15% and only some are over 20%.

Eustat will henceforth be able to provide district-level estimations with the increased operation efficiency that this implies.

The estimations may be improved as better auxiliary information is available. The availability of appropriate auxiliary information is fundamental to small area techniques and, therefore, it is important to have suitable frame and have access to information from the administrative files.

The accuracy of the district-level estimations may be improved in the future by optimising and designing the samples.

Eustat seeks to continue to make progress in the analysis and application of estimation methodology based on small area techniques in order to be able to provide increasingly disaggregated quality information.

Chapter 6

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Annex

DISTRICTS

ALAVA/ARABA

Arabako Ibarrak / Valles Alaveses: Añana, Armiñón, Berantevilla, Kuartango, Lantarón, Ribera Alta, Ribera Baja/Erribera Beitia, Valdegovía/Gaubea, Zambrana

Arabako Lautada / Llanada Alavesa: Alegría-Dulantzi, Arrazua-Ubarrundia Asparrena, Barrundia, Elburgo/Burgelu, Iruña Oka/Iruña de Oca, Iruraiz-Gauna, Salvatierra/Agurain, San Millán/Donemiliaga, Vitoria-Gasteiz, Zalduondo

Arabako Mendialdea / Montaña Alavesa: Arraia-Maeztu, Bernedo, Campezo/Kanpezu, Harana/Valle de Arana, Lagrán, Peñacerrada-Urizaharra

Errioxa Arabarra / Rioja Alavesa: Baños de Ebro/Mañueta, Elciego, Elvillar/Bilar, Kripan, Labastida/Bastida, Laguardia, Lanciego/Lantziego, Lapuebla de Labarca, Leza, Moreda de Álava, Navaridas, Oyón-Oion, Samaniego, Villabuena de Alava/Eskuernaga, Yécora/Iekora

Gorbeia Inguruak / Estribaciones del Gorbea: Aramaio, Legutiano, Urkabustaiz, Zigoitia, Zuia

Kantauri Arabarra / Cantábrica Alavesa: Amurrio, Artziniega, Ayala/Aiara, Laudio/Llodio, Orondo

NOTE: because of criteria for accurate results, in the publication we have gathered data from the counties Alaveses Montaña Alavesa and Estribaciones del Gorbea, in a region Arabako Besteak / Rest of Álava

BIZKAIA

Arratia Nerbioi / Arratia-Nervión: Arakaldo, Arantzazu, Areatza, Arrankudiaga, Artea, Dima, Igorre, Orozko, Otxandio, Ubide, Ugao-Miraballes, Urduña-Orduña, Zeanuri, Zeberio

Bilbo Handia / Gran Bilbao: Abanto y Ciérvana-Abanto Zierbena, Alonsotegi, Arrigorriaga, Barakaldo, Basauri, Berango, Bilbao, Derio, Erandio, Etxebarri, Galdakao, Getxo, Larrabetzu, Leioa, Lezama, Loiu, Muskiz, Ortuella, Portugalete, Santurtzi, Sestao, Sondika, Valle de Trápaga-Trapagaran, Zamudio, Zaratamo, Zierbena

Durangaldea / Duranguesado: Abadiño, Amorebieta-Etxano, Atxondo, Bedia, Berriz, Durango, Elorrio, Ermua, Garai, Iurreta, Izurtza, Lemoa, Mallabia, Mañaria, Zaldibar

Enkartazioak / Encartaciones: Artzentales, Balmaseda, Galdames, Gordexola, Güeñes, Karrantza Harana/Valle de Carranza, Lanestosa, Sopuerta, Trucios-Turtzioz, Zalla

Gernika-Bermeo: Ajangiz, Arratzu, Bermeo, Busturia, Ea, Elantxobe, Ereño, Errigoiti, Forua, Gautegiz Arteaga, Gernika-Lumo, Ibarrangelu, Kortezubi, Mendata, Morga, Mundaka, Murueta, Muxika, Nabarniz, Sukarrieta

Markina-Ondarroa: Amoroto, Aulesti, Berriatua, Etxebarria, Gizaburuaga, Ispaster, Lekeitio, Markina-Xemein, Mendexa, Munitibar-Arbatzegi Gerrikaitz-, Ondarroa, Ziortza-Bolibar

Plentzia-Mungia: Arrieta, Bakio, Barrika, Fruiz, Gamiz-Fika, Gatika, Gorliz, Laukiz, Lemoiz, Maruri-Jatabe, Meñaka, Mungia, Plentzia, Sopelana, Urduliz

GIPUZKOA

Bidasoa Beherea / Bajo Bidasoa: Hondarribia, Irun

Deba Beherea / Bajo Deba: Deba, Eibar, Elgoibar, Mendaro, Mutriku, Soraluze-Placencia de las Armas

Deba Garaia / Alto Deba: Antzuola, Aretxabaleta, Arrasate/Mondragón, Bergara, Elgeta, Eskoriatza, Leintz-Gatzaga, Oñati

Donostialdea / Donostia-San Sebastián: Andoain, Astigarraga, Donostia-San Sebastián, Errenteria, Hernani, Lasarte-Oria, Lezo, Oiartzun, Pasaia, Urnieta, Usurbil

Goierri: Altzaga, Arama, Ataun, Beasain, Ezkio-Itsaso, Gabiria, Gaintza, Idiazabal, Itsasondo, Lazkao, Legazpi, Mutiloa, Olaberria, Ordizia, Ormaiztegi, Segura, Urretxu, Zaldibia, Zegama, Zerain, Zumarraga

Tolosaldea / Tolosa: Abaltzisketa, Aduna, Albiztur, Alegia, Alkiza, Altzo, Amezketa, Anoeta, Asteasu, Baliarrain, Belauntza, Berastegi, Berrobi, Bidegoian, Elduain, Gaztelu, Hernialde, Ibarra, Ikaztegieta, Irura, Larraul, Leaburu, Legorreta, Lizartza, Orendain, Orexa, Tolosa, Villabona, Zizurkil

Urola-Kostaldea / Urola Costa: Aia, Aizarnazabal, Azkoitia, Azpeitia, Beizama, Errezil, Getaria, Orio, Zarautz, Zestoa, Zumaia

GEOGRAPHICAL AREAS

ALAVA/ARABA

Vitoria-Gasteiz: Vitoria-Gasteiz.

Arabako Lautadako besteak / Resto de Llanada Alavesa: Alegría-Dulantzi, Arrazua-Ubarrundia Asparrena, Barrundia, Elburgo/Burgelu, Iruña Oka/Iruña de Oca, Iruraiz-Gauna, Salvatierra/Agurain, San Millán/Donemiliaga, Zalduondo

Errioxa Arabarra / Rioja Alavesa: Baños de Ebro/Mañueta, Elciego, Elvillar/Bilar, Kripan, Labastida/Bastida, Laguardia, Lanciego/Lantziego, Lapuebla de Labarca, Leza, Moreda de Álava, Navaridas, Oyón-Oion, Samaniego, Villabuena de Alava/Eskuernaga, Yécora/Iekora

Kantauri Arabarra / Cantábrica Alavesa: Amurrio, Artziniega, Ayala/Aiara, Laudio/Llodio, Orondo

Arabako besteak / Resto de Álava: Añana, Armiñón, Berantevilla, Kuartango, Lantarón, Ribera Alta, Ribera Baja/Erribera Beitia, Valdegovía/Gaubea, Zambrana , Arraia-Maeztu, Bernedo, Campezo/Kanpezu, Harana/Valle de Arana, Lagrán, Peñacerrada-Urizaharra, Aramaio, Legutiano, Urkabustaiz, Zigoitia, Zuia

BIZKAIA

Santurtzi: Santurtzi

Portugalete: Portugalete

Sestao: Sestao

Barakaldo: Barakaldo

Galdakao: Galdakao

Eskaerraldeko besteak / Resto de Margen Izquierda: Abanto y Ciérvana-Abanto Zierbena, Alonsotegi, Arrigorriaga, Barakaldo, Basauri, Etxebarri, Galdakao, Muskiz, Ortuella, Valle de Trápaga-Trapagaran, Zaratamo, Zierbena

Getxo: Getxo

Leioa: Leioa

Erandio: Erandio

Eskuinaldeko besteak / Resto Margen Derecha: Berango, Derio, Larrabetzu, Lezama, Loiu, Sondika, Zamudio.

Bilbao: Bilbao

Enkartazioak / Encartaciones: Artzentales, Balmaseda, Galdames, Gordexola, Güeñes, Karrantza Harana/Valle de Carranza, Lanestosa, Sopuerta, Trucios-Turtzioz, Zalla

Arratia Nerbioi / Arratia-Nervión: Arakaldo, Arantzazu, Areatza, Arrankudiaga, Artea, Dima, Igorre, Orozko, Otxandio, Ubide, Ugao-Miraballes, Urduña-Orduña, Zeanuri, Zeberio

Durango: Durango

Durangaldea / Duranguesado: Abadiño, Amorebieta-Etxano, Atxondo, Bedia, Berriz, Elorrio, Ermua, Garai, Iurreta, Izurtza, Lemoa, Mallabia, Mañaria, Zaldibar

Gernika-Bermeo: Ajangiz, Arratzu, Bermeo, Busturia, Ea, Elantxobe, Ereño, Errigoiti, Forua, Gautegiz Arteaga, Gernika-Lumo, Ibarrangelu, Kortezubi, Mendata, Morga, Mundaka, Murueta, Muxika, Nabarniz, Sukarrieta

Markina-Ondarroa: Amoroto, Aulesti, Berriatua, Etxebarria, Gizaburuaga, Ispaster, Lekeitio, Markina-Xemein, Mendexa, Munitibar-Arbatzegi Gerrikaitz-, Ondarroa, Ziortza-Bolibar

Plentzia-Mungia: Arrieta, Bakio, Barrika, Fruiz, Gamiz-Fika, Gatika, Gorliz, Laukiz, Lemoiz, Maruri-Jatabe, Meñaka, Mungia, Plentzia, Sopelana, Urduliz

GIPUZKOA

Hondarribia: Hondarribia

Irán: Irun

Deba Beherea / Bajo Deba: Deba, Eibar, Elgoibar, Mendaro, Mutriku, Soraluze-Placencia de las Armas

Arrasate/Mondragón: Arrasate/Mondragón

Deba Garaiako besteak / Resto de Alto Deba: Antzuola, Aretxabaleta, Bergara, Elgeta, Eskoriatza, Leintz-Gatzaga, Oñate

Donostia-San Sebastián: Donostia-San Sebastián

Errenteria: Errenteria

Donostialdeako besteak / Resto de Donostialdea: Andoain, Astigarraga, , Hernani, Lasarte-Oria, Lezo, Oiartzun, Pasaia, Urnieta, Usurbil

Goierri: Altzaga, Arama, Ataun, Beasain, Ezkio-Itsaso, Gabiria, Gaintza, Idiazabal, Itsasondo, Lazkao, Legazpi, Mutiloa, Olaberria, Ordizia, Ormaiztegi, Segura, Urretxu, Zaldibia, Zegama, Zerain, Zumarraga

Tolosaldea: Abaltzisketa, Aduna, Albiztur, Alegia, Alkiza, Altzo, Amezketa, Anoeta, Asteasu, Baliarrain, Belauntza, Berastegi, Berrobi, Bidegoian, Elduain, Gaztelu, Hernialde, Ibarra, Ikaztegieta, Irura, Larraul, Leaburu, Legorreta, Lizartza, Orendain, Orexa, Tolosa, Villabona, Zizurkil

Zarautz: Zarautz

Urola-Kostaldeko besteak / Resto de Urola Costa: Aia, Aizarnazabal, Azkoitia, Azpeitia, Beizama, Errezil, Getaria, Orio, Zestoa, Zumaia