

# **Irish Innovation Panel: Wave 5 Survey Report**

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## ***1 Introduction***

This report provides details of the survey procedures adopted during the fifth wave of the Irish Innovation Panel (IIP5) conducted between January and June 2006.

The IIP5 was a postal survey, the primary aim of which was to provide representative indicators of innovation and the adoption of best practice techniques by manufacturing and tradable services firms in the Republic of Ireland and Northern Ireland. A secondary aim of the survey was to contribute to the creation of a longitudinal database of innovation in Irish companies. The IIP5 is a plant level (rather than company) survey with the sample being structured to minimise the burden on firms while maintaining statistical robustness. In particular, sample structure and response rates were monitored both by plant size-band and broad sectoral group to enable a representative analysis.

Section 2 summarises the main characteristics of the sampling obtained for the IIP5 and the characteristics of the final sample. Section 3 focuses on survey response and Section 4 describes the construction of weights designed to give representative results for Northern Ireland and Ireland. The survey questionnaire for manufacturing is included in Annex 1.

### ***A1.2 Sampling Frames***

Sampling frames for the IIP5 were the same as those used for the fourth wave of the Irish Innovation Panel (IIP4) updated using information on newer firms drawn from the FAME database (see Roper et al, 2004, Annex 1). Original sampling frames for Northern Ireland were based on the IDBR (provided by the Department of Enterprise, Trade and Investment) with a structured sample being drawn. Sampling fractions were: 50 per cent for plants with 10-19 employees, 75 per cent for plants with 20-99 employees and 100 per cent for plants with 100 plus employees. To maximise the longitudinal coverage of the survey, this random sample was augmented by those respondents to the fourth wave of the Irish Innovation Panel that were excluded from the random sample. Population structure is given in Table 1.1.

A similar sampling approach was adopted in the Republic of Ireland. A population listing of manufacturing firms was provided by Forfas for the IIP4 and this was augmented using data on newer firms from FAME. A random sample was constructed from this population. As in Northern Ireland, sampling fractions were: 50 per cent for plants with 10-19 employees, 75 per cent for plants with 20-99 employees and 100 per cent for plants with 100 plus employees. This random sample was then augmented by those respondents to the fourth wave of the IIP that were excluded from the random sample.

**Table 1: Target Populations of Establishments 2004/05: By employment size band**

<b>A. Northern Ireland</b>		10-19	20-49	50-99	100-249	250 plus	Total
Food, drink and tobacco	15 - 16	90	75	35	20	20	240
Textiles, clothing, leather	17-19	35	30	25	10	0	100
Wood and wood products	20	40	30	10	5	0	85
Pulp, paper and publishing	21 - 22	65	45	10	15	0	135
Chemicals and chemical products	24	10	10	5	5	5	35
Rubber and plastic products	25	45	20	25	15	5	110
Non-metallic mineral products	26	50	35	20	5	0	110
Basic metals and products	27 - 28	105	70	20	5	0	200
Mechanical Engineering	29	55	35	105	5	5	205
Electrical and optical equipment	30 - 33	25	25	10	0	5	65
Transport equipment	34 - 35	20	15	5	5	5	50
Manufacturing not elsewhere	36, 37, 23	65	30	10	0	0	105
<b>All Manufacturing</b>		<b>605</b>	<b>420</b>	<b>280</b>	<b>90</b>	<b>45</b>	<b>1440</b>
Telecomms, Financial Services	64-67	240	95	40	15	10	400
Property and Bus Services	72-74	625	245	95	50	20	1035
<b>All Tradable Services</b>		<b>865</b>	<b>340</b>	<b>135</b>	<b>65</b>	<b>30</b>	<b>1435</b>

  

<b>B. Ireland</b>		10-19	20-49	50-99	100-199	200 plus	Total
Food, drink and tobacco	15 - 16	137	147	90	86	42	502
Textiles, clothing, leather	17-19	71	42	18	7	4	142
Wood and wood products	20	68	65	19	9	0	161
Pulp, paper and publishing	21 - 22	146	133	40	25	15	359
Chemicals and chemical products	24	34	46	35	24	37	176
Rubber and plastic products	25	63	78	30	18	5	194
Non-metallic mineral products	26	77	74	33	10	7	201
Basic metals and products	27 - 28	173	147	38	20	5	383
Mechanical Engineering	29	79	66	26	18	7	196
Electrical and optical equipment	30 - 33	60	69	54	39	57	279
Transport equipment	34 - 35	25	20	11	8	8	72
Manufacturing not elsewhere	36, 37, 23	125	83	21	11	0	240
<b>All Manufacturing</b>		<b>1058</b>	<b>970</b>	<b>415</b>	<b>275</b>	<b>187</b>	<b>2905</b>
Telecomms, Financial Services	64-67	285	298	135	89	133	940
Property and Bus Services	72-74	1049	808	333	215	303	2708
<b>All Tradable Services</b>		<b>1334</b>	<b>1106</b>	<b>468</b>	<b>304</b>	<b>436</b>	<b>3648</b>

**Notes and Sources:** Northern Ireland, Size Analysis of UK Businesses 2005, Table A2.1. Ireland, Manufacturing, Census of Industrial Production, 2004, Table 3. Services: FAME version D.

Details of tradable services firms were obtained from Kompass for the IIP4 and again augmented with newer firms for the IIP5 from the FAME database. As in Northern Ireland sampling fractions were the same for both manufacturing and tradable services firms. Again population structure is given in Table A1.1.

### ***3 Survey Methodology and Response***

The IIP5 questionnaire was a simplified version of the earlier IIP4 questionnaire which itself was very similar to that used in earlier waves of the Irish Innovation Panel. This reduced the need for any pilot exercise following questionnaire design. Four separate questionnaires were developed for manufacturing and tradable services in Ireland and Northern Ireland. The manufacturing questionnaire is included in Annex A.

The main IIP5 postal survey was conducted by ESRI, Dublin between January 2006 and June 2006 with each plant being sent an initial form followed up by post and telephone. The initial manufacturing sample was 3,429 of which a proportion of firms were either non-contactable, had gone out of business or considered the survey irrelevant to their operations. This gave a workable sample of 2,832 firms of which 814 (28.7 per cent) responded. Response rates were higher in Ireland, however, 32 per cent compared to 22.7 per cent in Northern Ireland (Table 2). In services, the total sample was 1,847 which allowing for closure etc gave an in-scope sample of 1,548. Of these 442 firms (28.6 per cent) responded (Table 3). Again response rates were higher among firms in Ireland.

**Table 2: Survey Response Rates: Manufacturing**

	Northern Ireland	Ireland	Total
Total Sample (no)	1155	2274	3429
Non-contactable (no)	121	222	343
Out of business (no)	29	135	164
Not relevant (no)	13	77	90
In-scope sample (no)	992	1840	2832
Completed (no)	225	589	814
Response rate (%)	22.7	32.0	28.7

**Source:** IIP5**Table 3: Survey Response Rates: Services**

	Northern Ireland	Republic of Ireland	Total
Total Sample (no)	552	1295	1847
Non-contactable (no)	52	141	193
Out of business (no)	16	38	54
Not relevant (no)	1	51	52
In-scope sample (no)	483	1065	1548
Completed (no)	88	354	442
Response rate (%)	18.2	33.2	28.6

**Source:** IIP5

#### **4 Sample Weights**

The IIP5 survey was based on a structured sample with different sampling proportions for different plant size-bands. Obtaining representative results therefore requires that sample observations be weighted. Weights were specified separately for five plant size-bands. Reflecting the structure of the published data on the population in Ireland

and Northern Ireland slightly different size bands were used in the two areas. In Northern Ireland these were: 10-19 employees, 20-49, 50-99, 100-249 and 250 plus employees. In Ireland these were: 10-19 employees, 20-49, 50-99, 100-199 and 200 plus employees. For manufacturing plants they were split by eleven industrial categories and two service sector groupings (see Table 2). Weights were derived as the reciprocal of the response proportion in each cell (Table 3).

**Table 2: Survey Responses**

<b>A. Northern Ireland</b>		10-19	20-49	50-99	100-249	250 plus	Total
Food, drink and tobacco	15 - 16	6	11	10	7	1	35
Textiles, clothing, leather	17-19	4	8	1	2	1	16
Wood and wood products	20	4	5	4	1	0	14
Pulp, paper and publishing	21 - 22	4	1	3	1	0	9
Chemicals and chemical products	24	3	2	1	1	0	7
Rubber and plastic products	25	8	2	4	1	0	15
Non-metallic mineral products	26	2	2	3	2	0	9
Basic metals and products	27 - 28	3	12	2	4	2	23
Mechanical Engineering	29	3	5	6	4	1	19
Electrical and optical equipment	30 - 33	6	3	1	0	2	12
Transport equipment	34 - 35	2	5	1	1	2	11
Manufacturing not elsewhere	36, 37, 23	7	6	3	1	0	17
<b>All Manufacturing</b>		52	62	39	25	9	187
Telecomms, Financial Services	64-67	5	4	6	1	3	19
Property and Bus Services	72-74	13	17	10	6	0	46
<b>All Tradable Services</b>		18	21	16	7	3	65

  

<b>B. Ireland</b>		10-19	20-49	50-99	100-199	200 plus	Total
Food, drink and tobacco	15 - 16	14	43	19	8	17	101
Textiles, clothing, leather	17-19	8	9	0	3	1	21
Wood and wood products	20	6	12	6	5	2	31
Pulp, paper and publishing	21 - 22	7	17	6	5	1	36
Chemicals and chemical products	24	5	7	13	3	7	35
Rubber and plastic products	25	2	14	7	4	1	28
Non-metallic mineral products	26	8	12	3	0	2	25
Basic metals and products	27 - 28	20	30	17	9	3	79
Mechanical Engineering	29	6	14	5	2	2	29
Electrical and optical equipment	30 - 33	11	23	13	14	11	72
Transport equipment	34 - 35	3	6	4	2	3	18
Manufacturing not elsewhere	36, 37, 23	15	16	6	3	2	42
<b>All Manufacturing</b>		105	203	99	58	52	517
Telecomms, Financial Services	64-67	29	26	13	7	20	95
Property and Bus Services	72-74	71	72	21	23	17	204
<b>All Tradable Services</b>		100	98	34	30	37	299

Source: IIP5

**Table 3: Weights**

<b>A. Northern Ireland</b>		10-19	20-49	50-99	100-249	250 plus	Total
Food, drink and tobacco	15 - 16	15.00	6.82	3.50	2.86	20.00	6.86
Textiles, clothing, leather	17-19	8.75	3.75	25.00	5.00	5.00	6.25
Wood and wood products	20	10.00	6.00	2.50	5.00	0.00	6.07
Pulp, paper and publishing	21 - 22	16.25	45.00	3.33	15.00	0.00	15.00
Chemicals and chemical products	24	3.33	5.00	5.00	10.00	10.00	5.00
Rubber and plastic products	25	5.63	10.00	6.25	20.00	20.00	7.33
Non-metallic mineral products	26	25.00	17.50	6.67	2.50	0.00	12.22
Basic metals and products	27 - 28	35.00	5.83	10.00	1.25	1.25	8.70
Mechanical Engineering	29	18.33	7.00	17.50	1.25	5.00	10.79
Electrical and optical equipment	30 - 33	4.17	8.33	10.00	0.00	2.50	5.42
Transport equipment	34 - 35	10.00	3.00	5.00	5.00	2.50	4.55
Manufacturing not elsewhere	36, 37, 23	9.29	5.00	3.33	0.00	0.00	6.18
<b>All Manufacturing</b>		11.63	6.77	7.18	3.60	5.00	7.70
Telecomms, Financial Services	64-67	48.00	23.75	6.67	15.00	3.33	21.05
Property and Bus Services	72-74	48.08	14.41	9.50	11.67	11.67	22.50
<b>All Tradable Services</b>		48.06	16.19	8.44	9.29	10.00	22.08
<b>B. Ireland</b>		10-19	20-49	50-99	100-199	200 plus	Total
Food, drink and tobacco	15 - 16	9.79	3.42	4.74	10.75	2.47	4.97
Textiles, clothing, leather	17-19	8.88	6.67	6.67	2.33	4.00	6.76
Wood and wood products	20	11.33	5.42	3.17	1.29	1.29	5.19
Pulp, paper and publishing	21 - 22	20.86	7.82	6.67	5.00	15.00	9.97
Chemicals and chemical products	24	6.80	6.57	2.69	8.00	5.29	5.03
Rubber and plastic products	25	31.50	5.57	4.29	4.50	5.00	6.93
Non-metallic mineral products	26	9.63	6.17	11.00	8.50	8.50	8.04
Basic metals and products	27 - 28	8.65	4.90	2.24	2.22	1.67	4.85
Mechanical Engineering	29	13.17	4.71	5.20	9.00	3.50	6.76
Electrical and optical equipment	30 - 33	5.45	3.00	4.15	2.79	5.18	3.88
Transport equipment	34 - 35	8.33	3.33	2.75	4.00	2.67	4.00
Manufacturing not elsewhere	36, 37, 23	8.33	5.19	3.50	3.67	0.00	5.71
<b>All Manufacturing</b>		10.08	4.78	4.19	4.74	3.60	5.62
Telecomms, Financial Services	64-67	9.83	11.46	10.38	12.71	6.65	9.89
Property and Bus Services	72-74	14.77	11.22	15.86	9.35	17.82	13.27
<b>All Tradable Services</b>		13.34	11.29	13.76	10.13	11.78	12.20

Source: IIP5

## **Annex 1: Survey Questionnaire**

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**CROSS-BORDER PRODUCT AND PROCESS  
DEVELOPMENT STUDY - PHASE FIVE**  
Ireland Manufacturing - © ESRI/Queen's University Belfast

*These are the contact details that we have for your plant. Please amend if necessary.*

Label Here

## 1. Background

Please indicate whether this plant is: *(Please tick relevant box)*

A single-plant company	
A parent or group HQ	
A subsidiary plant in a group	
Other	

If this plant is a subsidiary, in which country is your group's headquarters located?

Location of Group HQ:

In what year did your plant start production?

Please indicate your average employment during 2005:

Employment 2005:

Please indicate the total percentage growth of this plant since 2003:

	Percentage Growth Since 2003
Employment Growth	%
Sales Growth	%

Please indicate *approximately* what proportion of the people who work in your plant have as their highest qualification:

	% of Workforce
A degree or equivalent qualification	%
A technician level qualification	%
A relevant apprenticeship level qualification:	%
Some relevant vocational qualification	%
No post-school vocational qualification	%

(Note: percentages should sum to 100%)

For the 2005 business year please estimate:

The value of your sales turnover	€000s:
The value of materials and fuels purchased	€000s:
Total gross expenditure on wages and salary payments	€000s:
Investment spending on plant, machinery and fixed assets	€000s:
Investment spending on buildings	€000s:

## 2. Markets and Strategy

Please indicate approximately what proportion of your sales are in each of the following markets:

	% of sales
Ireland	%
Northern Ireland	%
Great Britain	%
Other EU	%
Outside the EU	%

(Note: percentages should sum to 100%)

How important have the following been in your business strategy over the last three years? (please tick as appropriate)?

	Not Important		Very Important		
	1	2	3	4	5
Updating your product range					
Extending your product range					
Increasing or maintaining market share					
Entering new markets					
Reducing production costs					
Introducing 'greener' products					
Increasing profit margins					
Improving product quality					

## 3. Research and Development

Was any R&D undertaken in your plant in 2005?  
Is there a formal R&D department in your plant?

Yes	No

Please *estimate* how many man-years were spent on R&D in your plant during 2005

Man-years:

*Approximately* what was total R&D expenditure by your plant in 2005 (€000s)?

€000s:

What percentage, if any, of this R&D expenditure was used to buy-in R&D services from other companies or organisations?

%:

Does your company own other plants apart from yours?

	Yes	No
Company owns other plants		

**IF NO SKIP TO SECTION 4**

Is R&D relevant to your plant done in other group companies in (tick as appropriate?)

	Yes	No
Ireland		
Northern Ireland		
Other UK		
Other EU countries		
North America		
Elsewhere		

## 4. Product Developments

Have you introduced ANY new or improved products at this plant since 2003?

	Yes	No
Product Changes since 2003		

**IF NO SKIP TO SECTION 5**

How many products are there in your current product range?

Number of products in range:

How many new or improved products have you introduced since 2003?

Number of new/improved products:

Please *estimate* the proportion of your current sales (by value) that consist of:  
(Note: percentages should add to 100%)

	% of Sales
New products introduced to the market <i>for the first time</i> since 2003 by this plant	%
New products introduced by this plant since 2003 but <i>previously made elsewhere</i>	%
<i>Technically improved</i> products which were being made by this plant in 2003	%
<i>Aesthetically improved</i> products which were being made by this plant in 2003	%
Products which have remained <i>unchanged</i> since 2003	%

(Note: percentages should add to 100%)

How important was product development since 2003 in enabling you to:

	Not Important		3	Very Important	
	1	2		4	5
Replace out-dated products					
Extend your product range					
Increase or maintain your market share					
Enter new markets					
Reduce production costs					

Produce environmentally friendly products					
Improve product quality					
Match developments by competitors					

## 5. Process Developments

Have you introduced ANY new or improved production processes at this plant since 2003?

	Yes	No
Process Changes since 2003		

**IF NO SKIP TO SECTION 6**

Please indicate whether the production process changes you introduced were (tick as appropriate):

	Yes	No
New processes introduced by your plant which <i>have not previously been used elsewhere</i>		
New processes which <i>have not previously been used in Ireland</i>		
New processes which <i>have not previously been used in your industry</i>		
New processes which <i>have not previously been used in your plant</i>		
Improvements to processes which your plant was already using in 2003		

Please indicate if you now use any of the following production techniques. Also, please indicate the date when they were first introduced:

	Use Now	First Introduced:		
		Before 1999	During 1999-02	Since 2003
Numerically Controlled (NC) or CNC Machinery				
Robotic Equipment				
Automated Materials Handling				
Computer Aided Design (CAD)				
Computer Aided Production Management				
Computer Integrated Manufacturing				
Quality Certification (e.g. ISO 9000)				
Total Quality Management				
Quality Circles				
Just in time				

