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The ‘Irish Design Footprint’: Economic Value and Characteristics

Strategic Policy Division, Department of Jobs, Enterprise and
Innovation

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The ‘Irish Design Footprint’: Economic Value and Characteristics

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Executive Summary

Introduction

2015 was designated as the Year of Design in Ireland. This initiative has seen a programme of activities being undertaken that are focused on promoting and encouraging design activity in Ireland.

A number of research studies on design were also initiated in 2015 with the view to providing an evidence base to inform the development of future design policy.

The research presented herewith relates to one² of the studies initiated, and was undertaken by the Department of Jobs, Enterprise and Innovation (DJEI) to:

- estimate the economic contribution of design to the Irish economy.
- to characterise the design workforce and the design industries that make this economic contribution.
- determine how firms across the business economy utilise design skills.

The research methodology was based on a quantitative analysis of existing data and the research was guided by a Steering Group³ which was chaired by the DJEI.

Overall, there were two key elements to this study:

- defining and measuring the 'Irish Design Footprint'.
- developing findings and conclusions on the economic contribution of design based on analysis and consideration of the data.

The findings and conclusions from this research were subsequently used to inform the development of a 'Policy Framework for Design in Enterprise in Ireland'⁴.

² The other studies were 'Profile of Business in the Traditional Design Sectors, January 2016, A Report for the Design and Craft Council of Ireland by Con Kennedy' and 'A Study of the Role and Importance of Design in Firms in Ireland in Non-Design-Intensive Sectors, December 2015, A report for the Department of Jobs, Enterprise and Innovation by CM International and PDR'.

³ The Steering Group was made up of representatives from DJEI, Enterprise Ireland, IDA, Science Foundation Ireland and ID2015/Design and Craft Council of Ireland.

⁴ Policy Framework for Design in Enterprise in Ireland, January 2016, Department of Jobs, Enterprise and Innovation

Defining the ‘Irish Design Footprint’

The first phase of this study was focused on the definition of design for measurement purposes. Three key guiding principles supported the development of a definition for an ‘Irish Design Footprint’:

1. publicly available official data should be used for the measurement so as to allow for data to be updated regularly and to support benchmarking of Ireland’s performance internationally.
2. the definition should be based on a wide definition of design which brings design forward as a key component of the Creative Economy in Ireland.
3. due consideration should be given to approaches developed elsewhere for defining design for economic measurement purposes, and then tailored as appropriate to reflect the Irish context.

Based on desk research and the inputs from the Steering Group, a definition for the ‘Irish Design Footprint’ was developed based on industrial classification and occupation codes, and this definition is presented in Table ES1.

The ‘Irish Design Footprint’ is represented by six Design Groups. Design occupations were assigned to each Design Group in the map of the ‘Irish Design Footprint’ so as to support the measurement of employment in design across the total economy. These design occupations are represented in Table ES1 by their descriptive names and codes as assigned in the Standard Occupational Classification System (2010).

A set of business sectors is also assigned to each Design Group – these business sectors are the ‘**Design Sectors**’. These Design Sectors are represented in Table ES1 by their descriptive names and codes as assigned in the NACE Rev 2 classification system.

The Design Sectors are considered to be design-intensive with a considerable proportion (~ 30%) of the workers within each sector employed in a design role. The Design Sectors include sectors more traditionally associated with design – the sectors mapped in the Architecture, Specialised Design, and Craft Groups – and also sectors less

traditionally associated specifically with design – the sectors mapped in the Engineering⁵ and Digital Groups⁶.

Two particularly noteworthy points with regards to the definition of the ‘Irish Design Footprint’ are:

- The Design Sectors included in the ‘Irish Design Footprint’ were selected based on their inclusion in the ‘UK Design Footprint’⁷: UK analysis was undertaken to identify design-intensive sectors based on a criterion of 30 % of industry roles being design roles. Data limitations did not allow for a similar analysis to be undertaken for Ireland, and the assumption was made that the design-intensive sectors in the UK were also the Design Sectors in Ireland.

The Engineering Sector NACE 71.12 was additionally included in the ‘Irish Design Footprint’ based on the definitions for Design Sectors as set out by the OECD⁸.

- The ‘Irish Design Footprint’ includes a Design-Digital Group. This Group (as defined by the associated industrial and occupation codes) is also included with in the ‘UK Design Footprint’ developed by the UK Design Council. However, in other UK estimates⁹ this Group has been presented as the ‘Software Group’ which contributes to the broader concept of the ‘Creative Economy’, rather than specifically associated with design.

⁵ The Design Sectors in the Engineering Group relates to businesses classified specifically under NACE Rev 2 71.12, 16.29 and 26.4. Businesses that undertake engineering activities in support of other key business function are included in the cohort of firms in the Wider Enterprise Base.

⁶ No business sectors are mapped to the Advertising Group.

⁷ The Design Economy: The Value of design to the UK, 2015, UK Design Council

⁸ Measuring Design and its Role in Innovation, Fernando Galindo-Rueda, Valentine Millot, OECD Science, Technology and Industry Working Papers 2015/01

⁹ Creative Industries Economic Estimates, January 2015, UK Department for Culture Media & Sport

Table ES 1: Definition of the ‘Irish Design Footprint’ based on a Map of Occupation and Industrial Codes

Group	Description of Design Occupation	SOC (2010)	Description of Design Sector	NACE 2
Design-Engineering	Design and Development Engineers	2126	<i>Engineering Activities and Related Technical Consultancy</i>	<i>71.12</i>
			<i>Manufacture of Other Products and Woods</i>	<i>16.29</i>
			<i>Manufacture of Consumer Electronics</i>	<i>26.4</i>
Design-Architecture	Architects	2431	<i>Architectural Activities</i>	<i>71.11</i>
	Town Planning Officers	2432		
	Chartered Architectural Technologist	2435		
	Architectural and Town Planning Technicians	3121		
	Draughts Persons	3122		
Design-Specialised	Graphic Design	3421	<i>Specialised Design Activities</i>	<i>74.1</i>
	Product, Clothing, and Related Designers	3422	<i>Manufacture of Other Wearing Apparel and Accessories</i>	<i>14.19</i>
Design-Digital	IT Business Analysts, Architects and Systems Designers	2135	<i>Computer Programming Activities</i>	<i>62.01</i>
	Programmers and Software Development Professionals	2136	<i>Other Software Publishing</i>	<i>58.29</i>
	Web Design and Development Professionals	2137	<i>Publishing of Computer Games</i>	<i>58.21</i>
Design-Advertising	Advertising Accounts Managers and Creative Directors	2473		
Design-Craft	Smiths and Forge Workers	5211	<i>Manufacture of Jewellery</i>	<i>32.12</i>
	Furniture Makers and Other Craft Woodworkers	5442	<i>Binding and Related Services</i>	<i>18.14</i>
	Glass Product and Ceramics Makers Decorators and Finishers	5441	<i>Manufacture of Ceramic Household and Ornamental Articles</i>	<i>23.41</i>
	Weavers and Knitters	5411	<i>Manufacture of Other Furniture</i>	<i>31.09</i>
	Other Skilled Trades n.e.c	5449	<i>Repair of Furniture and Other Home Furnishings</i>	<i>95.24</i>
	Upholsterers	5412		
	Print Finishing and Binding Workers	5423		
	Footwear and Leather Working Trades	5413		
	Tailors and Dressmakers	5414		
	Textiles, Garments and Related Trades n.e.c	5419		
	Precision Instrument Makers, and Repairers	5224		
	Sewing Machinists	8137		

Measuring the ‘Irish Design Footprint’

A thorough review of potential data sources was undertaken to determine the most appropriate data sources to utilise for this study. While a number of data sources were utilised, not all of the preferred data was available and caveating and nuancing due to data availability are a feature of the analysis throughout this study and are documented throughout the report.

Measurement of Exports and GVA

In this analysis, estimates for GVA and exports from design-related business activities in Ireland are limited to measurements based on the Design Sectors.

- For GVA estimates, data is available only for a select number of Design Sectors across the Design Groups: Engineering Activities and Related Technical Consultancy; Specialised Design Activities and Architectural Activities.
- Estimates of exports for Design Sectors were based on data collected in the Annual Business Survey of Economic Impact¹⁰. Thus, exports for Design Sectors are estimated based on:
 - exports from agency-client firms only.
 - exports from firms with 10 or persons engaged in the business.

At 80 % of exports, the agency-client firms represent a significant proportion of total exports in the economy. However, a majority of firms in the Craft and Specialised Design Groups are micro enterprises and thus it is recognised that export measurements for these Groups are underestimated in the analysis.

Businesses outside of the Design Sectors are collectively termed the ‘Wider Enterprise Base’ and estimates of GVA and exports stemming from design activities in the Wider Enterprise Base cannot currently be measured for the Irish case.

¹⁰ The Annual Survey of Economic Impact is a survey of agency-client firms carried out on a yearly basis by DJEI (previously by Forfás).

Measurement of Employment

Estimates for employment in design are based on two different approaches:

- **Employment in the Design Sectors**

In this case, employment figures quoted relate to total employment in a Design Sector, i.e. employment in design roles plus employment in non-design roles of firms in the Design Sector.

- **Employment in Design Occupations across the Total Economy**

In this case, employment is measured based on all workers that are employed in design occupations, regardless of which sector they are employed in: this measure of employment includes employment in design occupations in enterprises in Design Sectors and the Wider Enterprise Base as well as in Non-Business Sectors of the Economy.

Conclusions on the Economic Value and Characteristics of the ‘Irish Design Footprint’

Based on the analysis of data for Ireland and elsewhere, a number of key data findings were developed with regards to the value and characteristics of the ‘Irish Design Footprint’. Despite the issues associated with data availability and data caveats, the key findings as reported are robust and grounded in multi-year validation and national and international comparisons. The set of findings developed are set out in detail in the main body of the report, and they support the development of the following conclusions with regards to the economic value and characterisation of the ‘Irish Design Footprint’:

- **Design has a significant economic impact on the Irish Economy** as demonstrated by the contribution of designers to total employment (2.48% in 2014) and the contribution of Design Sectors to total exports from Ireland (19.5% in 2012).
- **This economic impact is significantly influenced by the Digital Design Group**, which contributes 97% of all exports from the Design Sectors in 2012 and 1.2% of employment in design roles in 2014.

- **When the Digital Design Group is excluded from the analysis, the remaining Design Groups are measured to contribute €0.94 bn¹¹ to exports and 1.28% to total employment – a still considerable contribution to the Irish economy.**
- **The employment impact of the ‘Design Footprint’ for Ireland is comparable to that in the UK when compared on a similar basis. However, exports from the Design Sectors in Ireland were valued at more than €37 bn in 2013, much greater than the £9.8 bn (estimated at €12.78 bn¹²) reported by the UK for exports from a similar set of Design Sectors.¹³**
- **The Design Workforce in Ireland over all can be characterised as:**
 - male dominated
 - young
 - educated
 - in full time employment
 - higher level of non-nationals than the national average.
 - entrepreneurial i.e. a higher proportion of self-employed than the national average

Of course within the Design-Groups and subcategories the profiles deviate somewhat from this overarching profile, particularly across the Craft related workers.

- While the research found that a higher proportion of innovative firms utilise design skills than do not, design-skills appeared to be less utilised by FDI firms than by indigenous firms.¹⁴

¹¹ As the measurement was focused on firms with 10 or more persons engaged, it is acknowledged that the contribution to exports by firms in the Craft and Specialised Design Sectors is not fully reflected in this figure.

¹² Based on an exchange rate of 0.77:1 €:£.

¹³ The Engineering Sector (NACE2 72.12) is not included in the comparative analysis for exports as the UK Design Council did not include an Engineering Group in their analysis.

¹⁴ Based on analysis of the Community Innovation Survey.

- **The research indicates the opportunity for enhancing the value of design to Ireland by encouraging more females to engage in design occupations.**
- **Based on international comparison, the research also indicates an opportunity for increasing economic impact from design in Ireland by focusing on increasing activity in Design-Engineering.** Comparison of GVA and employment impact measurements across European countries for the Design Sectors of Engineering Activities and Related Technical Consultancy, Architectural Activities and Specialised Design Activities indicates that Ireland performs best on a comparative basis for the Specialised Design Sector, followed by the Architectural Sector, and less well for the Engineering Sector. Given that in absolute terms the Engineering Sector is typically the biggest contributor to GVA and employment in each country (of the three aforementioned sectors), this finding highlights that there may be an economic opportunity for Ireland in focusing on this Engineering Sector.
- **Finally, it is acknowledged that much further work is needed to fully measure and capture the economic impact of design activities in the Irish economy.** The cross disciplinary nature of design makes it difficult to measure and this is an issue that is being grappled with by all countries looking to develop estimates of the value of design. **However, based on the analysis carried out here, it is considered that future measurements of design should be based on official statistics and then further supplemented with survey analysis as appropriate.**

1. Introduction

2015 was designated as the Year of Design in Ireland. This initiative has seen a programme of activities being undertaken that are focused on promoting and encouraging design activity in Ireland.

A number of research studies on design were also initiated in 2015 with the view to providing an evidence base to inform the development of future design policy.

The research presented herewith relates to one¹⁵ of the studies initiated, and was undertaken by the Department of Jobs, Enterprise and Innovation (DJEI) to:

- estimate the economic contribution of design to the Irish economy.
- to characterise the design workforce and the design industries that make this economic contribution.
- determine how firms across the business economy utilise design skills.

The research was guided by a Steering Group¹⁶ which was chaired by the DJEI, and the findings from this research were used to inform the development of a 'Policy Framework for Design in Enterprise in Ireland'¹⁷.

In summary, this report:

- sets out a definition for the 'Irish Design Footprint', based on occupations and business sectors.
- sets out an approach to measuring the economic contribution of the 'Irish Design Footprint'.
- documents the official data sources available for: potentially measuring the economic estimates for the 'Irish Design Footprint'; to allow for characterising

¹⁵ The other studies were 'Profile of Business in the Traditional Design Sectors, January 2016, A Report for the Design and Craft Council of Ireland by Con Kennedy' and 'A Study of the Role and Importance of Design in Firms in Ireland in Non-Design-Intensive Sectors, December 2015, A report for the Department of Jobs, Enterprise and Innovation by CM International and PDR'.

¹⁶ The Steering Group was made up of representatives from DJEI, Enterprise Ireland, IDA, Science Foundation Ireland and ID2015/Design and Craft Council of Ireland.

¹⁷ Policy Framework for Design in Enterprise in Ireland, January 2016, Department of Jobs, Enterprise and Innovation.

the design workforce and Design Sectors in Ireland; determining the extent to which innovative firms in Ireland utilise design skills.

- highlights caveats and assumptions made based on the data available and the detail of the data collection methodologies underlying the data sources.
- reports economic data for the 'Irish Design Footprint' insofar as is possible based on existing official statistics.
- presents a profile of the design workforce in Ireland and characteristics of innovative firms utilising design skills.
- presents national data for the full Irish economy/business economy and international comparisons where feasible, to support the contextualisation of the analysis of design in Ireland.

2. Defining and Measuring the ‘Irish Design Footprint’

2.1 Approach to Defining and Measuring the ‘Irish Design Footprint’

In seeking to measure the economic impact of design a clear definition of design must first be developed. The following key guiding principles supported the development of a definition for an ‘Irish Design Footprint’:

1. The ‘Irish Design Footprint’ should be based on a broad definition which brings design forward as a key component of the Creative Economy and which cuts across the Irish economy. Thus, to capture the totality of activity associated with design and its contribution to the Irish economy, design activities should include:
 - activities in the industries considered Design Sectors¹⁸ – such as architectural design, graphic design, crafts and fashion design industries.
 - design activities that are undertaken in sectors of the economy other than the Design Sectors.
2. Publicly available national data should be used as the data source for economic measurements of design:
 - so that data can be updated more regularly than may otherwise be feasible.
 - to support benchmarking of Ireland’s performance internationally.

In taking this approach to measurement, it is recognised that the use of official statistics will restrict economic analysis to definitions of design which utilise Industrial Classification (IC) codes and Standard Occupational Classification (SOC) codes. It is acknowledged that the use of official statistics leads to limitations with regards to capturing activities associated with creative endeavour and these types of issues have been raised previously in other studies¹⁹.

¹⁸ Design Sectors can be considered Sectors in which design forms a primary purpose of the businesses in the Sector.

¹⁹ Creative Industries Economic Estimates, January 2015, UK Department for Culture Media & Sport

3. Other studies relevant to this exercise should be reviewed so as to:
 - build on the learnings from other research with regards to identifying IC codes and SOC codes to be included in defining the ‘Irish Design Footprint’.
 - to support the development of clear rationales for any deviations Ireland takes from other approaches for defining design (based on IC and SOC codes) for Design.
 - to develop an understanding of methodological differences across studies: thus allowing for explanation of differences in estimates of economic impact of design that may arise across different studies.

2.2 Definition of the ‘Irish Design Footprint’: based on Industrial Classifications codes (NACE Rev2) and Standard Occupational Codes (SOC (2010))

A mapping of design occupations and Design Sectors based on IC and SOC codes was recently carried out by the UK Design Council.²⁰ This work builds on the mapping of IC and SOC codes carried out by the UK Department of Culture, Media and Sports (DCMS) for developing economic estimates for the Creative Industries/Economy.²¹ However, relative to the categorisations developed by the UK DCMS, the work of the UK Design Council encapsulates a wider spectrum of activity within its consideration of the ‘Design Footprint’ for the UK.

In the work of the UK Design Council, a series of SOC²² codes were identified, which were considered to reflect those working in design (design SOC codes). As per the approach developed by NESTA through their research on dynamic mapping of the UKs creative industries²³, a series of industries were also identified as Design Sectors: the design intensity of each IC code was determined as the proportion of people employed within a given IC code that are working within one of the design SOC codes. In line with the approach taken by the UK DCMS, the UK Design Council deemed any industry with a design intensity of 30% or above to be a Design Sector.

²⁰ The Design Economy: The Value of design to the UK, 2015, UK Design Council

²¹ Creative Industries Economic Estimates, January 2015, Department for Culture Media & Sport: In this mapping, design is listed as one component of the creative industries/economy.

²² SOC(2010)

²³ A Dynamic Mapping of the UK’s Creative Industries, Nesta, 2013

The UK Design Council map of occupational and industrial codes used to define a broad definition of the 'UK Design Footprint' was adopted as the starting template in this present study. Revisions were subsequently made to refine the map so as to reflect the Irish context. These revisions were based on considerations of the Steering Group²⁴; data limitations for the case of Ireland; and consideration of approaches in other relevant studies²⁵.

It is highlighted, that in defining the 'Irish Design Footprint' **a key assumption was made from the outset: that the Design Sectors identified for the UK are also the Design Sectors in Ireland.**²⁶

Table 1 sets out the six high level Design Groups identified as collectively defining the 'Irish Design Footprint'. Table 1 also indicates the SOC (2010) codes and IC codes (NACE Rev 2) that have been assigned to each of the Design Groups.

²⁴ For example, mechanical and civil engineers were not included as design occupations for the Irish analysis.

²⁵ Galindo-Rueda, F. and V.Millot (2015) "Measuring Design and its Role in Innovation", OECD Science and Technology and Industry Working Papers, 2015/01, OECD Publishing.

²⁶ As will be discussed in Section 2.5, due to the issues of small numbers, Ireland cannot determine the detailed SOC(2010) codes at a detailed enough level of NACE Rev 2 to independently carry out the parallel exercise for identifying Design Sectors for Ireland based on the proportion of workers working as designers in a given sector.

Table 1: Definition of the ‘Irish Design Footprint’ based on a Map of Occupation and Industrial Codes.

Group	Description of Design Occupation	SOC (2010)	Description of Design Sector	NACE 2
Design-Engineering	Design and Development Engineers	2126	<i>Engineering Activities and Related Technical Consultancy</i>	71.12
			<i>Manufacture of Other Products and Woods</i>	16.29
			<i>Manufacture of Consumer Electronics</i>	26.4
Design-Architecture	Architects	2431	<i>Architectural Activities</i>	71.11
	Town Planning Officers	2432		
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	Programmers and Software Development Professionals	2136	<i>Other Software Publishing</i>	58.29
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	Furniture Makers and Other Craft Woodworkers	5442	<i>Binding and Related Services</i>	18.14
	Glass Product and Ceramics Makers Decorators and Finishers	5441	<i>Manufacture of Ceramic Household and Ornamental Articles</i>	23.41
	Weavers and Knitters	5411	<i>Manufacture of Other Furniture</i>	31.09
	Other Skilled Trades n.e.c	5449	<i>Repair of Furniture and Other Home Furnishings</i>	95.24
	Upholsterers	5412		
	Print Finishing and Binding Workers	5423		
	Footwear and Leather Working Trades	5413		
	Tailors and Dressmakers	5414		
	Textiles, Garments and Related Trades n.e.c	5419		
	Precision Instrument Makers, and Repairers	5224		
	Sewing Machinists	8137		

In defining the 'Irish Design Footprint', a number of decisions were made for deviating away from the map developed by the UK Design Council for the 'UK Design Footprint'. A direct comparison of SOC and IC codes included in the map for Ireland relative to the codes mapped by the UK Design Council is shown in Appendix 1. The key distinctions between the maps are as follows:

1. The inclusion of civil engineers, mechanical engineers as design occupations in the UK Design Council 'UK Design Footprint' was considered to be stretching the 'Irish Design Footprint' too far in and so these occupations were not included in the 'Irish Design Footprint'.
2. The Irish map of the 'Design Footprint' includes the industrial code NACE Rev 2 71.12. This code was identified as part of the definition of design in work carried out by the OECD.²⁷ The first part of the description for NACE 71.12 is set out as follows:

This class includes:

- engineering design (i.e. applying physical laws and principles of engineering in the design of machines, materials, instruments, structures, processes and systems) and consulting activities for:

- machinery, industrial processes and industrial plant.
- projects involving civil engineering, hydraulic engineering, traffic engineering
- water management projects.
- projects elaboration and realisation relative to electrical and electronic engineering, mining engineering, chemical engineering, mechanical, industrial and systems engineering, safety engineering.

While there are further activities included in this sector, it is considered that this IC code should be included in the Irish analysis based on the design focused activities captured within this IC code.

3. For a number of SOC codes, namely: Gardeners and Landscapers; Engineering Professionals n.e.c; and Artists, the approach taken by the UK Design Council is to only include the occupation when it occurs within specific IC codes. However, Irish data availability does not allow for the disaggregation of SOC codes

²⁷ It is noted that Civil Engineering Sector is captured as NACE Rev 2 42.

according to IC industrial codes at a detailed enough level to allow for such disaggregation. Consequently, these more selective components of the above listed occupational codes were not included in the 'Irish Design Footprint'.

4. Craft is included in the overall 'Design Footprint' in both the Irish map and UK-Design Council map. However, in the UK Design council map, SOC and IC codes assigned to this Design Group are limited to occupations and industries which are considered to be design intensive. In comparison, in the Irish mapping within the Craft Group, all craft-based occupations and craft-related industries are included in the map for the 'Irish Design Footprint'.
5. The codes mapped for the Design-Craft group in the 'Irish Design Footprint' are based on:
 - the IC codes identified for Craft in the work of the UK Craft Council²⁸.
 - the SOC codes identified in a previous study on Craft in Ireland –which was carried out by Indecon²⁹. In the Indecon study, the SOC(90) occupation classification system was used. There is not an exact matching across the SOC(90) and SOC(2010) coding systems, however, we sought to identify similar occupations under the SOC (2010) coding system so as to include these in the mapping of Craft occupational codes in this present exercise.

2.3 Measuring the Economic Contribution of Design

2.3.1. The Design Economy

In Design Sectors, design is a core activity³⁰. However, within these sectors there is a host of other roles that are not specifically related to design (non-design roles).

²⁸ Defining and measuring craft: a review for the Crafts Council: Report three - Measuring the craft economy, Prepared by TBR on behalf of the UK Craft Council, November 2014

²⁹ Creative Clusters: Economic Analysis of the ~Current Status and Future Clustering Potential for the Crafts Industry in Ireland. Prepared for ' The West Cork Development Partnership on behalf of a consortium of Local Development Companies, Ballyhoura Development Ltd., Wexford Development Ltd., Kilkenny LEADER Partnership and South Tipperary Development Company under the LEADER element of the Rural Development Programme 2007-2013 in association with the Crafts Council of Ireland, by Indecon, 2013.

³⁰ The UK Design Council adopt the formal definition of 30% or more of the workforce in design-roles in design-intensive industries/Design Sectors

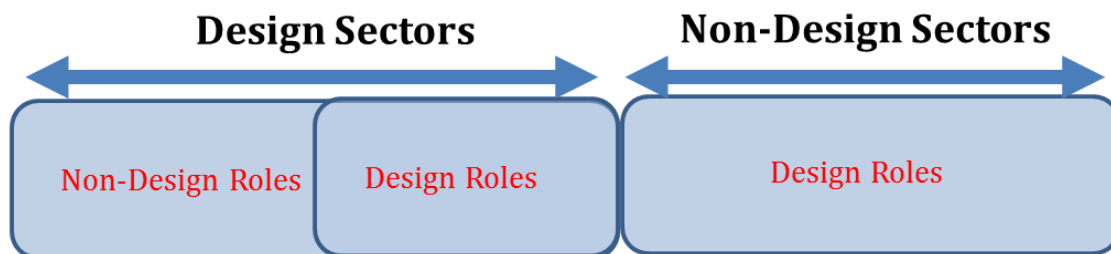
In addition, design activities are also embedded across other business sectors of the economy (here forth known as the 'Wider Enterprise Base') as well as in non-business sectors of the economy. In these sectors, design is typically not the primary function of within the sector, but may form (to a greater or lesser extent) an integral part of the business/other activity.

Thus, as has been highlighted in other studies³¹³² there are three elements to be considered when considering the economic contribution of the 'Design Economy':

1. Design Sectors– design roles
2. Design Sectors – non-design roles
3. Wider Enterprise Base plus Non-Business Sectors of the Economy- design roles

Additively, these elements constitute the Design Economy as is illustrated in Figure 1.

Figure 1. Illustration of the make up the Design Economy: indicating the interplay of occupations and industries contributing to the Design Economy.



To make estimates of the economic contributions for all of these 3 individual elements requires that both SOC and IC codes are available at a detailed (4 digit) level.

The economic contribution of design roles only (across all industries) forms a subset of the overall economic contribution of the 'Design Economy'.

³¹ The Design Economy: The Value of design to the UK, 2015, UK Design Council

³² Creative Industries Economic Estimates, January 2015, UK Department for Culture Media & Sport: In this mapping, Design is listed as one component of the creative industries/economy.

2.3.1.1 Measurement of the 'Design Economy'

For the purposes of measuring economic contribution related to the 'Design Economy', the **preferred measurements** to be made are as follows:

- Total employment in the design economy: Employment in design roles across all sectors plus employment in non-design roles in Design Sectors.
- GVA of the design economy: GVA of Design Sectors plus the estimated GVA contributed through design roles in the Wider Enterprise Base³³.

Further measurements of interest in terms of the provision of descriptive insights to the 'Design Economy' include:

- The spread of design roles across sectors of the economy.
- The type of employment within the design workforce: self-employed vs. employee.
- Demographics of design workforce: age, gender, part-time/full-time, qualifications and nationality.
- Utilisation of design skills by firms: in-house vs accessed externally.

2.3.2 Design Sectors

The set of Design Sectors forms a subset of the 'Design Economy' and measurement of the economic contribution of the Design Sectors excludes the contribution of individuals in design roles in the Wider Enterprise Base and Non-Business Sectors of the economy.

2.3.2.1 Measurement of the Design Sectors

For the purposes of measuring economic contribution related to the Design Sectors, the **preferred measurements** to be made are as follows:

- Total employment in Design Sectors (design and non-design roles).
- Total GVA of Design Sectors.
- Total exports from Design Sectors.

³³ If the appropriate data is available, an estimate of GVA based on the contribution of design roles in the Wider Enterprise Base can be made by calculating the average GVA per worker in the Wider Enterprise Base and then multiplying this average GVA by the number of design workers in the Wider Enterprise Base.

Further measurements of interest in terms of the provision of descriptive insights for the Design Sectors include characteristics associated with firm ownership and firm size.

2.4 Data Sources

A preferred set of measurements for determining the economic contribution of the 'Irish Design Footprint' to Ireland are set out in Section 2.3. However, such measurements are dependent on the availability of the appropriate data. As such a key part of this overall study is focused on: identifying potential available data sources for the exercise; determining the extent to which the required data is available; and documenting caveats and assumptions that need to be allied to data sources in developing any economic estimates for Design in Ireland.

An overview of the data sources reviewed is provided in Appendix 2. Table AP2 in Appendix 2 indicates data access, data coverage and availability of data according to SOC and IC codes for each of the data sources of interest. Table AP3 in Appendix 2 sets out a summary of the potential data sources to be utilised for this study with regards to the preferred measurements for this study, along with limitations of the data and availability of data for international comparison for the preferred measurements.

2.5 Data Availability and Implications for Measuring the Economic Contribution and Characterisation of Design in Ireland

Due to issues of confidentiality, data from the QHNS or Census 2011 is not available at both 4 digit SOC (2010) and 4 digit NACE Rev 2. Thus, we cannot estimate the economic contribution of the total design economy for Ireland: we cannot disaggregate the designers employed in the Design Sectors from the designers employed outside of the Design Sectors.

Furthermore, due to data confidentiality issues, data is not available for a number of individual NACE Rev2 codes.³⁴ Data remains unavailable in some instances, even when aggregated to Design Group level. Thus, a total estimate of employment, GVA, turnover or productivity for the total set of Design Sectors in Ireland cannot currently be provided.³⁵

Export data for Design Sectors is available only for agency-assisted firms, which constitutes ~ 80% of total exports for Ireland³⁶. Furthermore, export data is only available for firms with 10 or more persons engaged.

Given that many firms in the Design Sectors of the Craft and Specialised Design Groups are micro and small firms, the value of exports for these Sectors is underrepresented in the analysis presented in this study.

It is noted that due to the availability of time series data, the QHNS data was selected as the preferred data source for measurement of design occupations rather than the Census 2011 data.

It is also noted that the data reported in the QHNS includes all employment by designers- regardless of whether they are an employee, employer, freelancer etc.

A summary of what **we can and cannot report** with regard to the economic contribution (and supporting descriptive measures) of design in Ireland is set out in Table 2. Further detail with regards to limitations and data coverage are provided in Appendix 3.

³⁴ Results cannot be presented in instances in which: there are less than three companies in a given sector/region or cross-tabulation; or where one company accounts for more than 80% of the total in a given sector/region/cross-tabulation; or where two companies account for 90% of the total in a given sector/region/cross-tabulation.

³⁵ There may be a possibility of estimating a total figure (aggregation of Design Groups) for Design GVA in early 2016 (following the completion of work currently ongoing at the CSO on the ASI And CIP databases).

³⁶ Agency exports accounts for ~78% of total exports from Ireland in 2012, which were 91,688 €mn in Goods and 85,527 €mn in services). Export data for Goods: http://www.cso.ie/en/media/csoie/releasespublications/documents/externaltrade/2013/gei_dec2013.pdf
Export data for Services: <http://www.cso.ie/en/releasesandpublications/er/its/internationaltradeinservices2013/>, Annual Survey of Economic Impact, 2013, DJEI.

Table 2 Summary of the measurements that can and cannot be measured for the economic contribution (and supporting descriptive measures) of design in Ireland, based on available national data.

	CAN MEASURE	CANNOT MEASURE
Employment	Number employed in design occupations: total and disaggregated by Design Group level	
	Numbers of designers employed in the various business sectors (NACE Rev 2 Category level)	
	Comparison: Number employed in design occupations in the UK	
	Employment in Design Sectors: Engineering Activities and Related Technical Consultancy; Architectural Activities; Specialised Design Activities	Total Employment in Design Sectors
	International comparison of employment Design Sectors: Engineering Activities and Related Technical Consultancy; Architectural Activities; Specialised Design Activities	
		Total employment in the Design Economy: employment in all design roles + employment in non-design roles in Design Sectors
GVA and Exports	GVA in Design Sectors: Engineering Activities and Related Technical Consultancy; Architectural Activities; Specialised Design Activities	Total GVA in the Design Sectors
	International comparison of GVA in Design Sectors: Engineering Activities and Related Technical Consultancy; Architectural Activities; Specialised Design Activities	
	Agency-client firm exports (in firms with 10 or more persons engaged) in Design Sectors: total and disaggregated by Design Group	Total Exports by all firms in the Design Sectors
	UK design exports from Design Sectors	
		Total GVA of the Design Economy: GVA contribution from design roles and GVA contribution from non-design roles in the Design Sectors
Characterisation of Design Workforce and Utilisation of Design Skills	Ratio of self-employed designers to design employees: some disaggregation at Design Group level	
	Demographics of design work force : age, gender, qualifications and nationality- by SOC (2010) code and Design Group	
	UK comparison of design workforce characterisation	
	Utilisation of design-related skills by innovative firms: in-house employment vs accessing skills externally	
	International comparison of design-related skills by innovative firms: in-house employment vs accessing skills externally	

3. Design Workforce and Utilisation of Design Skills

3.1 Introduction

This chapter of the report focuses on the designers in Ireland (as identified in the 'Irish Design Footprint') with regards to:

- The level of employment across different types of designers.
- The characteristics of the design workforce.
- The extent to which particular design-related skills are utilised by innovative firms and how these skills are accessed.

In order to put the Irish design measurements in context, comparisons are made to the Irish whole economy average statistics and to other international statistics where data is available.

3.2 Employment in Design Occupations

3.2.1 Employment in Design Occupations in Ireland

Due to the ongoing nature of the measurement, the QHNS was used as the source for estimating the employment in design occupations. The data includes all individuals employed in a design occupation- this is regardless of whether they are self-employed or an employee, thus covering the full gamut of employment in design occupations in Ireland. Estimates of the annual number of persons in employment in design occupations (as defined in the 'Irish Design Footprint') are available according to Design Group for most of the Design Groups defined for this study and are provided in Table 3³⁷.

³⁷ Data for the Design-Advertising Group were deemed to be unreliable for the years considered.

Table 3 Annual average number of persons employed in design occupations in Ireland, 2011-2014.³⁸

	2011	2012	2013	2014
	Annual Average Number Employed	Annual Average Number Employed	Annual Average Number Employed	Annual Average Number Employed
Group 1: Design- Engineering	[907.7]	1,184	1,800	1,818
Group 2: Design- Architecture	6,304	7,068	6,988	6,947
Group 3: Design- Specialised	5,841	5,628	6,259	6,045
Group 4: Design-Digital	20,529	21,886	21,437	23,033
Group 5: Design-Advertising	*	*	[905.7]	*
Group 6: Craft	11,411	11,037	9,321	10,204
Total- (5 Design Groups)	44,992	46,803	45,805	48,047

Source: Quarterly National Household Survey, Central Statistics Office, Ireland, as provided by CSO. Parentheses [] indicate where there are 30-49 persons in a cell, estimates are considered to have a wider margin of error and should be treated with caution. * Estimates for numbers of persons or averages where there are less than 30 persons in a cell are not produced as estimates are too small to be considered reliable. Thus, engineering figure for 2011, and advertising figure for 2013 should be treated with caution.

As highlighted in Table 3, **employment in design occupations** as defined for the ‘Irish Design Footprint’ in Ireland (excluding those employed in design related occupations in Advertising) **ranged between 45,000–48,000** over the years **2011- 2014**. This accounted for an **annual average contribution to total employment in Ireland of 2.48% per year by design occupations** over this time frame **timeframe** (Table 4). Thus, it appears that **growth in employment in design related occupations has broadly been keeping abreast with growth in the overall economy over the 2011-2014**: growth in employment in design occupations was 6.5% between 2011-2014 and overall employment growth across the whole economy was 7.25% over the same timeframe.³⁹

³⁸ The total employment value in 2011 of the 5 Design Groups includes the employment in the Design-Engineering Group, though it is acknowledged that this data should be treated with caution.

³⁹ Estimated at 7.25% between Q4 2011 and Q4 2014 based on employment figures measured through the QHNS and published by the CSO.

Table 4 Total employment in design occupations per year, and % contribution of design occupations per year to total employment in Ireland, over the time frame 2011-2014.

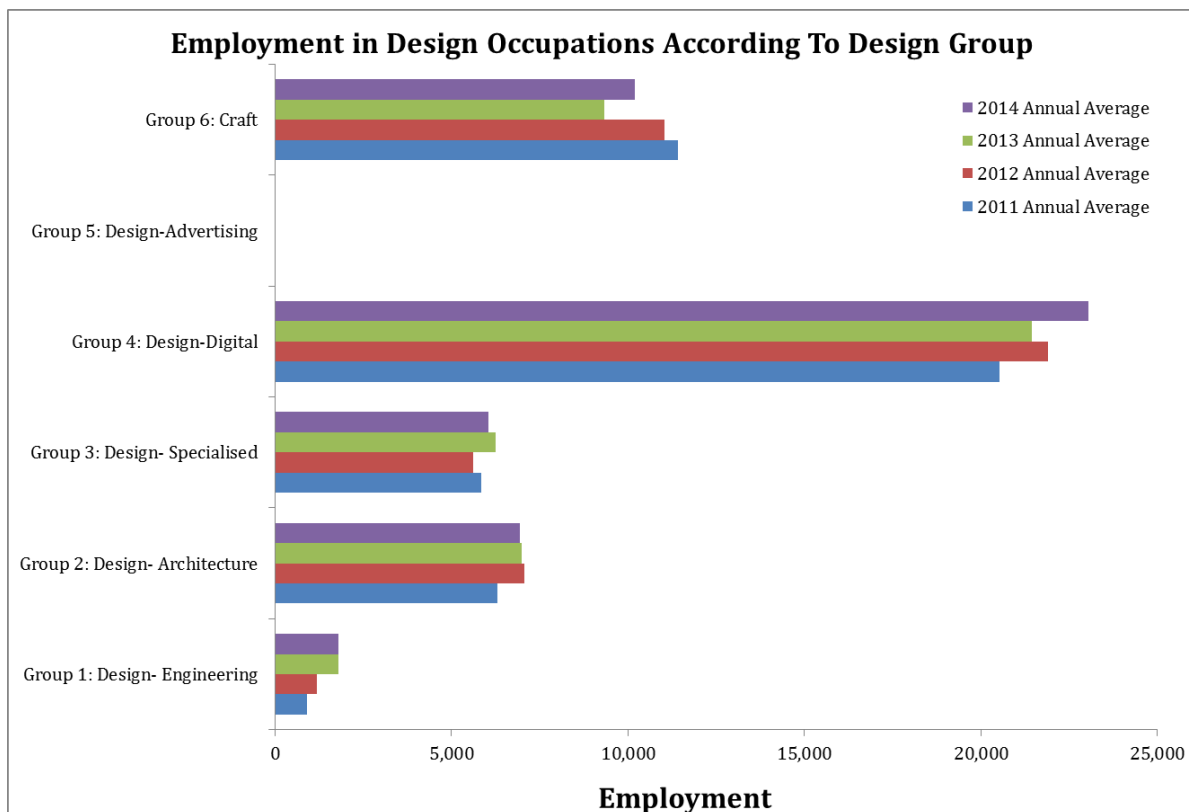
	2011	2012	2013	2014
	Annual Average Number Employed	Annual Average Number Employed	Annual Average Number Employed	Annual Average Number Employed
Total Employment in Design Occupations (not including employment in Advertising)	44,992	46,803	45,805	48,047
Employment in Design Occupations (not including employment in Advertising) as a % of Total Employment in Ireland	2.49%	2.54%	2.40%	2.48%

Source: Quarterly National Household Survey, Central Statistics Office, Ireland; Total Employment in Ireland- Quarterly National Household Survey, Central Statistics Office, Ireland.

Employment in design occupations is greatest in the Digital-Design Group, which is responsible for approximately twice as much employment as the next most prolific Design Group of CRAFT. **In 2014, the Digital Design Group accounted for 48 % of employment in design occupations⁴⁰ as defined in the 'Irish Design Footprint'.** Employment levels of design occupations are similar in the Design Groups of Architecture and Specialised Design, with Engineering related design occupations reporting the smallest level of employment. Figure 2, presents the employment for each of the Design Groups, and while no judgement is made on trends over this short time period, the extended data set does validate the overall picture with regards to the levels of designers employed in each Design-Group.

⁴⁰ The total employment cited for design does not include any employment associated with the Advertising Design Group.

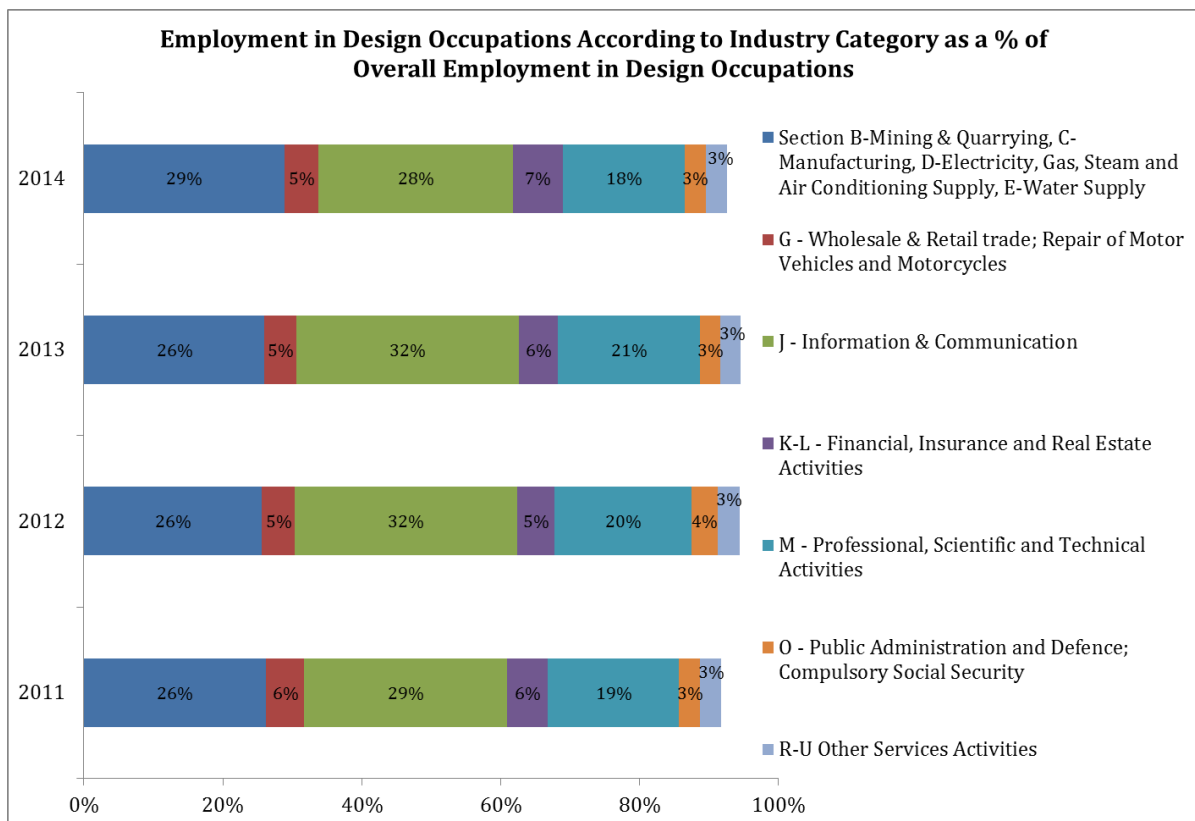
Figure 2 Employment in design occupations across the Irish Economy, between 2011-2014, according to Design Group.



Source: Quarterly National Household Survey, Central Statistics Office, Ireland, as provided by CSO.

It can be seen from Figure 3, that **employment in design-occupations are spread across the economy, and are particularly prevalent in three categories: Industry, Information and Communication and Professional Scientific and Technical Activities, with ~ 75% of designers employed across these three categories.** The Professional, Scientific and Technical sector includes the NACE Rev 2 codes assigned to the Specialised Design, Architecture and Engineering Groups and while this category is a key employer of designers it is not the dominant Category in this regard. Thus, analysis of the sectoral spread of employment in design occupations supports the conclusion that **design activity is not limited to sectors more traditionally associated with design, but rather design activity is important across a wider range of business and non-business sectors of the Irish economy.**

Figure 3 Employment in design occupations for each Category as a % of total employment ⁴¹ in design occupations for years 2011-2014. ^{42,43}



Source: Quarterly National Household Survey, Central Statistics Office, Ireland, as provided by CSO.

3.2.2 International Comparison of Employment in Design Occupations

To develop a sense of how the employment contribution of design occupations in Ireland performs internationally, comparison is made with employment measurements made based on occupational data published for the UK. It is noted that there is no exact match to the definition for the ‘Irish Design Footprint’, and so adjustments are made to

⁴¹ The total employment calculation for Design does not include employment in the Design-Advertising Group, as this data was not available.

⁴² NACE Rev. 2 Categories: B (Quarrying and Mining), C (Manufacturing) and D (Electricity, gas, steam and air-conditioning supply) and E (Water supply, sewerage, waste management and remediation). NACE Rev.2 Category M includes 74.11 (Specialised Design Activities) and 71.11 (Architectural Activities) and 71.12 (Engineering Activities and Related Technical Consultancy). NACE Rev. 2 Category J includes 62.01, 58.29 and 58.21.

⁴³ We note that data for a number of sectors is omitted as estimates are too small to be considered reliable. Thus, the total % of employment in the chart does not add to 100%.

narrow and widen the definition of the 'Design Footprint' so as to compare data appropriately.

Firstly, the Irish measurements herewith are compared with data published by the UK DCMS in their economic estimates of the creative industries.^{44,45} The UK DCMS focus on the broader concept of the Creative Economy, however, five of the Groups defined (in terms of IC and SOC codes) for the Creative Economy largely overlap with Groups defined in the 'Irish Design Footprint': these Groups are Architecture, Specialised Design, Digital, Advertising and Craft. Relative to the work of the UK DCMS, Ireland includes Draughtspersons (in Architecture Group), tailors and dressmakers (Specialised Design Group). Ireland also includes design and development engineers in the Engineering Group, whereas there is no equivalent Group in the UK DCMS system of measurement.

Given that employment data is not available for Ireland for the Advertising Group and the occupational data for Engineering is not included in the UK DCMS measurements, the Advertising and Engineering Groups are left out in this comparator analysis.

As can be seen from the data in Table 5, based on the four Design Groups – a narrower definition of the 'Design Footprint' - the contribution of design/creative based occupations in 2013 to total employment in the UK is estimated as 2.66% of total employment in the UK in 2013. This compares to 2.3% for Ireland. **The analysis indicates that based on this narrower definition of the 'Design Footprint' (consisting of: Architecture, Specialised Design, Digital and Crafts Groups) the contribution of these occupations⁴⁶ to total employment in Ireland has a similar impact to employment in the UK (in 2013) –regardless of whether they are defined as 'design' or 'creative'.**

⁴⁴ Creative Industries Economic Estimates, January 2015, UK Department for Culture Media & Sport

⁴⁵ The UK DCMS use the Annual Population Survey as their data source which is equivalent to the QHNS. The Annual Population Survey (APS) is a combined statistical survey of households in Great Britain which is conducted quarterly by the Office for National Statistics (ONS). It combines results from the Labour Force Survey (LFS) and the English, Welsh and Scottish Labour Force Survey which are funded by the Department for Education and Skills (DfES), the Department for Work and Pensions (DWP), the National Assembly for Wales and the Scottish Executive.

⁴⁶ Regardless of whether they are labelled design or creative occupations.

Table 5 Employment across occupations (Design/Creative) in the UK and Ireland, and the contribution to the total employment in each country. ⁴⁷

	UK-DCMS- 2013		Ireland 2013
	Creative Jobs in Creative Industries	Creative Jobs outside Creative Industries	Design Jobs, inside and outside the Design-Intensive Industries
Design- Architecture	65,000	42,000	6,988
Design- Specialised	75,000	55,000	6,259
Design-Digital	236,000	249,000	21,437
Design- CRAFTS	4,000	88,000	9,321
Employment in Design/Creative Occupations	380,000	434,000	
Total Employment in Design/Creative Occupations	814,000		44,004
Total Employment in UK	30,643,000		
Total Employment in Ireland			1,910,000
% of Employment that are Design-Related Creative Jobs	2.66%		2.30%

Source: UK data: Creative Industries Economic Estimates, January 2015, UK Department for Culture Media & Sport. This work utilises the Annual Population Survey as their data source. Ireland data: QHNS.

Within this narrower definition for the ‘Design Footprint’, the occupations associated with the Digital Design Group made the biggest contribution to employment in design for both the UK and Ireland. It constituted 49% of employment within this narrower definition of the ‘Design Footprint’ in Ireland in 2013, and 60% of employment in the UK in 2013.⁴⁸ This translates to a contribution of 1.12% for Ireland and 1.58% for the UK to total employment in 2013 by occupations associated with the Digital-Design Group.

Data has also been published by the UK Design Council which can be used as a comparison for Ireland. In this case the UK Design Council defines a wider definition of

⁴⁷ We note that the UK DCMS do not define the Groups as contributors to the design footprint, but rather they consider them as contributors to the Creative Economy.

⁴⁸ Total employment in design occupations is estimated as the sum of employment across the four Design Groups as indicated in Table 5.

the 'Design Footprint' relative to the 'Irish Design Footprint'. The UK Design Council categorises their 'UK Design Footprint' within a series of Design Groups, however they include additional occupational data within these groups over that of the Irish definition.

Based on the analysis completed by the UK Design Council, an estimate of 1,313,900 workers in design occupations was made for the UK in 2014⁴⁹. This amounts to 4.31% of total employment in the UK in 2014, as indicated in Table 6⁵⁰. In comparison, the estimate for Ireland in 2014 is (including the Engineering Design Group but excluding the Advertising Group) was 2.48 % as indicated in Table 6 also.

It is noted that the UK Design Council includes Civil Engineers (in Architecture Group), Gardeners and Landscapers (in Architecture Group), Artists (in Speciality Design Group), Mechanical Engineers and Engineering Professionals n.e.c (in (Engineering/Multidisciplinary Group)), whereas Ireland does not include these SOCs in their data.

In an effort to compare 'like with like', an estimate of the contribution of design occupations to employment in Ireland was also made based on a wider definition of the 'Design Footprint'. This wider definition included occupations of civil engineers⁵¹ and engineering professionals n.e.c. ⁵² in line with the UK Design Council approach. The contribution of the 'Design Footprint' in Ireland in this case was calculated at 3.0% of total employment in 2014, as indicated in Table 6.

Obviously with the inclusion of additional data for Ireland relating to the design-related occupations that the UK Design Council included in their analysis - such as occupations related to Advertising, Artists, etc.- the employment contribution of design occupations for Ireland would move further closer to the value reported by the UK Design Council.

⁴⁹ It is noted that in most instances, in the report of the UK Design Council 'The Design Economy: The Value of design to the UK, 2015' data for Design Economy Employment is reported for each Design Group. This employment data within each Design Group includes design roles, but also non-design roles within the design-intensive sector. For the Irish analysis, we are limited to design occupations, and so we cannot do direct comparisons with the UK Design Council Data except in the case of 2014, where the Design Economy Employment data is split out by design roles and non-design roles.

⁵⁰ The UK Design Council uses the Annual Population Survey as their data source which is equivalent to the QHNS.

⁵¹ Estimated at 6,900 in 2014 for Ireland based on QHNS data reported in the EGFSN Skills Bulletin 2015

⁵² Estimated at 3,700 in 2014 for Ireland based on QHNS data reported in the EGFSN Skills Bulletin 2015

Table 6 Employment in Design occupations in 2014 for the UK- based on the UK Design Council 'UK Design Footprint', and for Ireland - based on the 'Irish Design Footprint' and a widened 'Design Footprint' which includes civil and mechanical engineering.

	Employment in Non-design Occupations in Design Industries - 2014	Employment in Design Occupations in Design Industries - 2014	Employment in Design Occupations in Non-Design industries - 2014	Total Employment in Design Occupations - 2014	Total Employment in Country-2014	Employment in Design Occupations as % of Total Employment in Country - 2014
UK - Design Council 'UK Design Footprint'	279,700	299,600	1,014,300	1,313,900	30,453,900	4.31%
Ireland- 'Irish Design Footprint'				48,047	1,940,000	2.48%
Ireland - Widened 'Design Footprint' towards UK Design Council Definition to include civil and engineering professionals n.e.c.				58,647	1,940,000	3.02%

Source: UK - UK Design Council data based on Annual Population Survey. Ireland- QHNS.

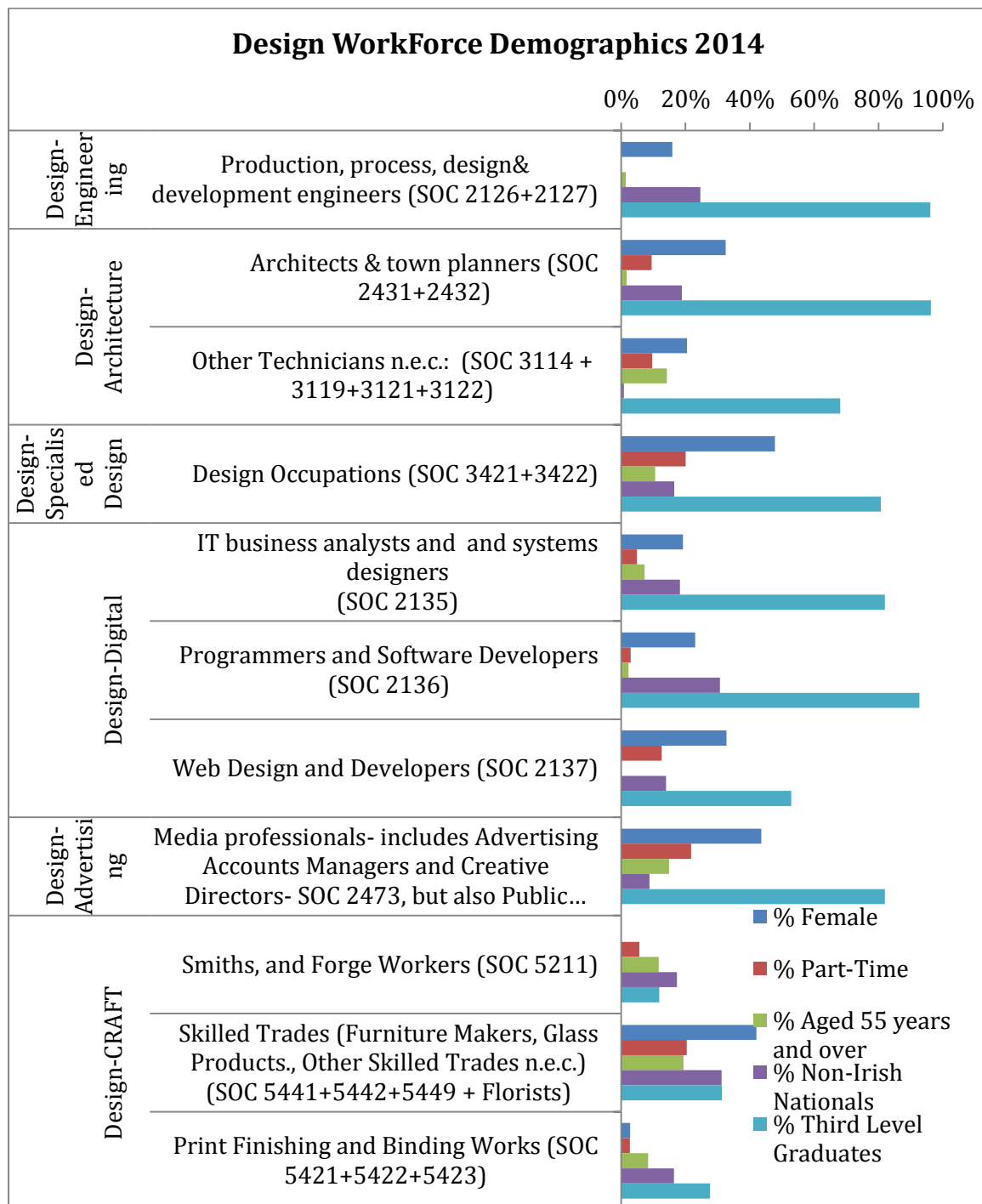
3.3 Design Workforce Characteristics

3.3.1 Design Workforce Demographics

A number of key demographics of the Design Workforce in 2014 are summarised in Figure 4. Where feasible, data for the individual SOC codes is provided. A full tabulation of the wider range of demographic data is provided in Appendix 4 for 2014. It is noted that the primary source of the data is the QHNS, but the demographic data presented here is based on data reported through the Expert Group for Future Skills Needs

(EGFSN) National Skills Bulletin 2015. In the data reported, there are some instances of aggregation of SOC codes and some instances where there is absence of data for SOC codes of interest to this study: the caveats with regards to the demography data are also provided in Appendix 4.

Figure 4 Proportion of designers in each Design Group/Group subcategory according to gender, part-time, aged > 55 years, non-national and with 3rd level qualification in 2014.



Source: QHNS data extracted from EGFSN National Skills Bulletin 2015. Data Caveats: Design and Development Engineers is reported combined with production and process engineers; Extra SOC codes (3114 and 3119) are included in the Architecture Group, and SOC 2435 (Chartered Architectural Technologists) is missing; the Advertising Group includes extra SOC codes (2471+2472); in the CRAFT Group, extra SOC codes are included in print finishing (5421, 5422) and data for SOC 5411, 5413, 5414, 5419, 5224 and 8137 is not available.

A number of key observations can be made based on review of the 2014 design workforce demographic data, as follows:

- **% Females**

- Females were the minority in the workforce in all of the Design Groups/subcategories in 2014.
- However, the relative proportion of females in the workforce in 2014 was higher in the Specialised Design and Advertising and Skilled Trades Groups/subcategory with between 40-50% of the workforce represented by female workers. The proportion of female workers in the other subcategories is lower, lying in the range of 33% (web designers) to 0% (Smiths and Forge Workers).
- **Designers are mostly male at approximately 75% of the design workforce employed in 2014 . This compares to 54.3% of the 1.94 million persons employed in Q 4 2014 across the whole economy being male.⁵³**

- **% Part Time**

- Part time workers represented less than 22% of the workforce across all Groups/subcategories in 2014.
- The Groups/subcategories with the highest proportion of part-time workers in 2014 were: Media, Skilled Trades, and Design Occupations (part-time workers ranging between 20%-22%).
- The remaining Groups/subcategories reported < 12.5 % of the workforce as part-time in 2014.
- **Designers mostly work full-time at approximately 90% of the total design workforce employed in 2014. This is higher than the overall proportion of full time workers employed across the economy, which was estimated as 77% of the total 1.94 million persons employed in Q 4**

⁵³ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

2014.⁵⁴ The high proportion of full time workers is driven by the high proportion of full time workers in the Programmers and Software Developers subcategory: this sub category within the Digital Design Group accounts for a significant proportion of the design workforce (~ 25% based on the current data set) while part-time workers only account for 3% of the workers in this Design subcategory.

- **%>55 Age**

- In 2014, the Groups/subcategories with the highest proportion of older workforce were: Skilled Trades, Media, Architectural Technicians⁵⁵ and Design Occupations. Between 10%-20% of the workforce in these design occupations is reported as being over 55 years.
- The proportion of the workforce who were over 55 years of age was below 10% for the remaining Design-Groups/subcategories in 2014.
- **Designers are represented by a larger proportion of younger workers than the national average.** Overall, the proportion of the design workforce employed in 2014 that were aged > 55 years was 8.7%. In comparison, those aged > 55 years accounted for 16.4% of the total employment in the country in Q4 2014.⁵⁶

The lower proportion of workers > 55 years for the design workforce stems from the young age profile of the workers in the Programmers and Software Developers subcategory: this subcategory within the Digital Design Group accounts for significant proportion of the design workforce (~ 25% based on the current data set) while workers employed that are > 55 years only account for 2.3% of the employment in Digital-Design.

- **% of Non-Nationals**

- Three clusters of Groups/subcategories were identified based on the levels of non-nationals in the design workforce in 2014:

⁵⁴ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

⁵⁵ This subcategory is broader than just architectural technicians.

⁵⁶ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

- Cluster 1- 20-30% of the workforce was represented by non-nationals in a number of Groups/subcategories: Skilled Trades, Programmes and Software Developers and Design Engineers.
 - Cluster 2- 10-20% of the workforce was represented by non-nationals in the following Groups/subcategories: Architects and Town Planners, Design Occupations, IT Business Analysts and Systems Designers, Web Designers, Smiths and Forge Workers and Print Finishing and Binding Workers.
 - Cluster 3- <10% of the workforce was represented by non-nationals in two groups/subcategories: Architectural Technicians and Media.
- o **Overall, the proportion of the design workforce employed in 2014 that were non-nationals was 21%. In comparison, non-nationals accounted for 14.8% of total employment across the full economy in Q4 2014.⁵⁷**
- The higher proportion of non-nationals in the design workforce employed stems primarily from the high proportion of non-nationals employed in the Programming and Software Development subcategory and the Skilled Trades subcategory.
- **% of Third- Level Graduates**
 - o Three clusters of Groups/subcategories were also identified based on the levels of the design workforce with third level qualifications in 2014:
 - Cluster 1- 80-100% of the workforce had third level qualifications within the following Groups/subcategories: Engineering, Architects and Town Planners, IT Business Analysts and Systems Designers, Programmes and Software Developers, Media Professionals and Design Occupations.
 - Cluster 2- 50-70% of the workforce had third level qualifications within the Architectural Technicians and Web Designers Groups/subcategories.

⁵⁷ Based on Q4 2014 QHNS data as reported in the National Skills Bulletin 2015.

- Cluster 3- <32% of the workforce had third level qualifications within the Smiths and Forge Workers, Skilled Trades, and Print Finishing and Binding Workers Groups/subcategories.
- **Designers demonstrate a higher level of third level qualifications than the national average. Overall 66% of the design workforce employed in 2014 had third level education. This compares to 54% of those employed in Q4 2014 in the total economy having a third level qualification.**

However at a disaggregated level, the proportion of workers with third level qualifications in the web-design subcategory and the Craft Group are below the national average.

In addition, there a number of salient points that can be extracted based on comparing the overall demographic profile of the various Groups/subcategories in 2014:

1. Relative to the other Groups/subcategories in the design workforce, the Skilled Trades, Design Occupations and Media Professionals groups/subcategories, have:
 - A higher proportion of females in their workforce.
 - A higher proportion of part time workers.
 - The highest proportion of workers >55 years of age in their workforce.

However, their profiles deviate when it comes to skills requirements:

- Design Occupations and Media Professionals groups/subcategories reported a higher proportion of the workforce that had third level qualifications, and Skilled Trades reported a much lower proportion of its workforce being made up of third level graduates.
 - The Skilled Trade subcategory reported higher proportions of non-nationals to that of Design Occupations and Media Professionals.
2. The subcategories in the Digital Design Group present similar profiles to each other for a number of the variables:

- Young workforce: each subcategory has a low proportion of the workforce that is > 55 years of age.
 - The workforce is constituted by higher proportions of non-nationals relative to many other design groups/subcategories.
 - Each subcategory indicates that > 80% of the workforce have third level qualifications.
3. The Architects and Town Planners subcategory and the Engineering Group also have a number of commonalities in the profile of their respective workforces:
- Young workforce: a small proportion of the workforce is > 55 years of age.
 - Workforces that are well educated - with more than 90% of workers having third level education,
 - A significant proportion of non-national in the workforces ~ 20% of the workforce in these 2 subcategories.
4. Within the Craft Group, there are some clear distinctions and similarities in the demographic profiles of the subcategories:
- Smiths and Forge Workers and Print Finishing and Binding Workers are male dominated occupations, in comparison to Skilled Traders which reports one of the highest female proportions in its workforce.
 - All three subcategories in the CRAFT Group report much lower levels of third level education than in the rest of the design workforce.

The demographic profile for the design workforce by groups/subcategories was also reviewed for the timeframes 2011-2013, and the data is tabulated and presented in Appendix 4 with the associated caveats regarding the data. Overall the data for the earlier years supports the demographic profile behaviour reported for 2014.

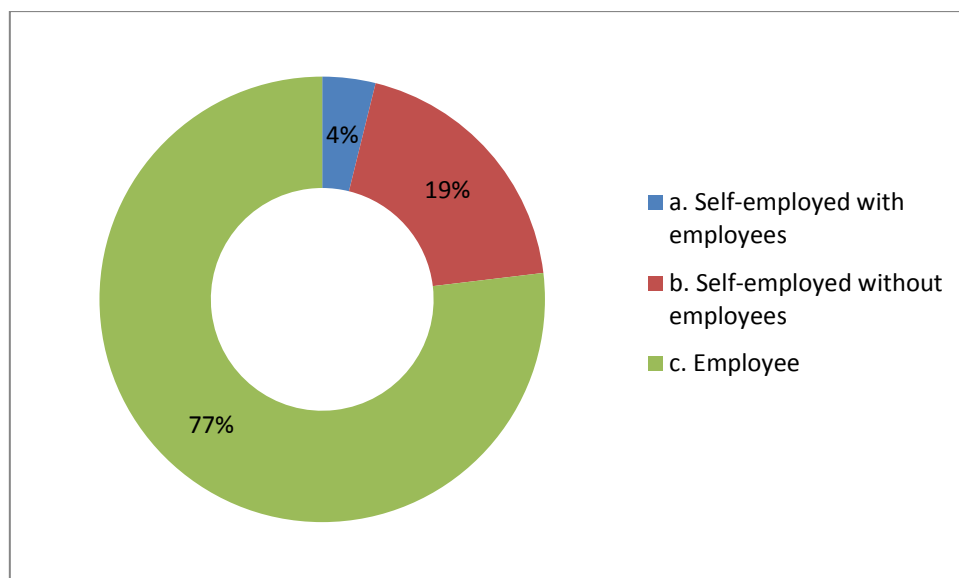
3.3.2 Employment Status across the Design Workforce in Ireland

Based on QHNS data available, a picture of the employment status in the design workforce was developed according to the categories of:

- Self-employed - with employees
- Self-employed without employees
- Employee

Figure 5 portrays the proportion for each of these categories in 2014 based on the occupations included in the 'Irish Design Footprint'. As can be seen, the dominant form of employment across the design workforce is as an employee, with 77% of employment fitting within this category. This is slightly below the proportion of employment represented by employees, when the employment status of total employment in Ireland is considered: in Q4 2014, 83% of persons in employment across the total economy were employees.

Figure 5 Proportion of all workers in the design workforce that were: self-employed with employees, self-employed without employees, employees in 2014.



Source: Source: Quarterly National Household Survey, Central Statistics Office, Ireland, as provided by CSO.

Employment status data was available for the Digital Group, the Craft Group and for an aggregation of the Engineering, Architecture, Specialised Design and Advertising Groups (aggregated Groups). This data is presented in Appendix 5 for the time series 2011-2014.

The data indicates that within the aggregated Groups, the proportion of employment as employees is 67% in 2014- much less than the full economy proportion of 83%.

Furthermore, the proportion of employment as employees in the CRAFT is lower again at 57% of the workers in this Group in 2014. Conversely, the proportion of employees making up employment in the Digital Design Group is higher than the national figure, at 92% in 2014.

Furthermore, the data indicates that for Digital Design, the small portion of workers that are self-employed tend to work alone. With regards to the aggregated Groups, self-employed with no employees represents a significant proportion of this cohort at 25% of employment, and this proportion is even greater in the Craft Group, representing 36% of employment in this Group in 2014.

Thus, the design workforce deviates somewhat from the national picture of employment status and the nature of the deviation depends on the Design Group under consideration:

- For the Digital Group, the contribution of self-employed to employment (8%) was lower than the national average of 17% in 2014.
- For the aggregated Groups and the Craft Group, the proportion of self-employed (33% and 44% respectively) was much greater than the national average of 17% in 2014.
- For the aggregated Groups and the Craft Group, the proportion of self-employed persons with no employees was 25% and 36% respectively in 2014, which is much greater than the national figure of ~12% in 2014.

Overall, it can be concluded that within the design workforce, outside of designers in the Digital Design Group, designers are more likely to be self-employed than other workers in the total Irish workforce. Furthermore, these self-employed

designers are more likely not to employ other persons than other self-employed workers in design occupations in Ireland.

3.3.3 Design Work Force Characteristics - International Comparison

A comparison can be made of some of the design workforce characteristics in Ireland to those in the UK – based on analysis of the UK Design Council.⁵⁸ Table 7 sets out data for a range of workforce characteristics for the design workforce in the UK and Ireland alongside the total workforce characteristics for each country.

Table 7 Comparison of the design workforce characteristics for Ireland and the UK- based on the workforce as defined for the ‘Irish Design Footprint’ and the ‘UK Design Footprint’.

	Ireland: Design Work Force	Ireland: Total Work Force		UK: Design Work Force	UK: Total Work Force
Gender	75:25 male:female	54:46 male:female		78:22 male:female	53:47 male:female
Age	91% of designers < 55 years	83.6% of workforce < 55 years		63% of designers < 45 years	57% of workforce < 45 years
Qualification	66 % with third level	54% with third level		68 % with third level	41% with third level
Part-time	10% part time	23% part time		14% part time	27% part time
Employment Status	23% self- employed	17% self- employed		27% self- employed	15% self- employed

Source: Ireland- QHNS as reported through the EGFSN Nationals Skills Bulletin. UK – UK Design Council based on Annual Population Survey.

The design workforce characteristics are found to be similar in the UK and Ireland, relative to the national workforce characteristics in each country:

- In both the UK and Ireland there are a higher proportion of males amongst the design workforce than exists across the workforce more generally.

⁵⁸ The Design Economy: The value of design to the UK, 2015, UK Design Council

- While the age consideration for UK and Ireland is different, the same message can be extracted for both countries: the design workforce is younger than the national average of the workforce.
- The design workforce as a whole has higher qualifications than the total workforce in both countries.
- In both the UK and Ireland, designers are less likely to be part-time workers than other workers in the workforce.
- Designers in both countries are more likely to be self-employed than other workers in the workforce.

3.4 Utilisation of Design Related Skills by Innovative Firms⁵⁹

3.4.1 Utilisation of Design Skills by Innovative Firms in Ireland

An estimate of the extent to which design skills are utilised by innovative firms in all business Sectors across the economy can be made based on the analysis of the data collected in the 2010 Community Innovation Survey. Firms were asked ‘During the three years 2008 to 2010, did your enterprise employ individuals in-house with the following skills, or obtain these skills from external sources?’

- Design of objects or services
- Graphic arts/layout/advertising
- Multimedia
- Web design
- Software development
- Market research
- Engineering/applied sciences
- Mathematics/statistics/database management

For the purposes of this study, the following skills are deemed to be design skills:⁶⁰

⁵⁹ A parallel research study ‘A Study of the Role and Importance of Design in Firms in Ireland in Non-Design-Intensive Sectors, December 2015, A report for the Department of Jobs, Enterprise and Innovation by CM International and PDR’ also provides a picture of the use of design skills in innovative firms in both quantitative and qualitative terms.

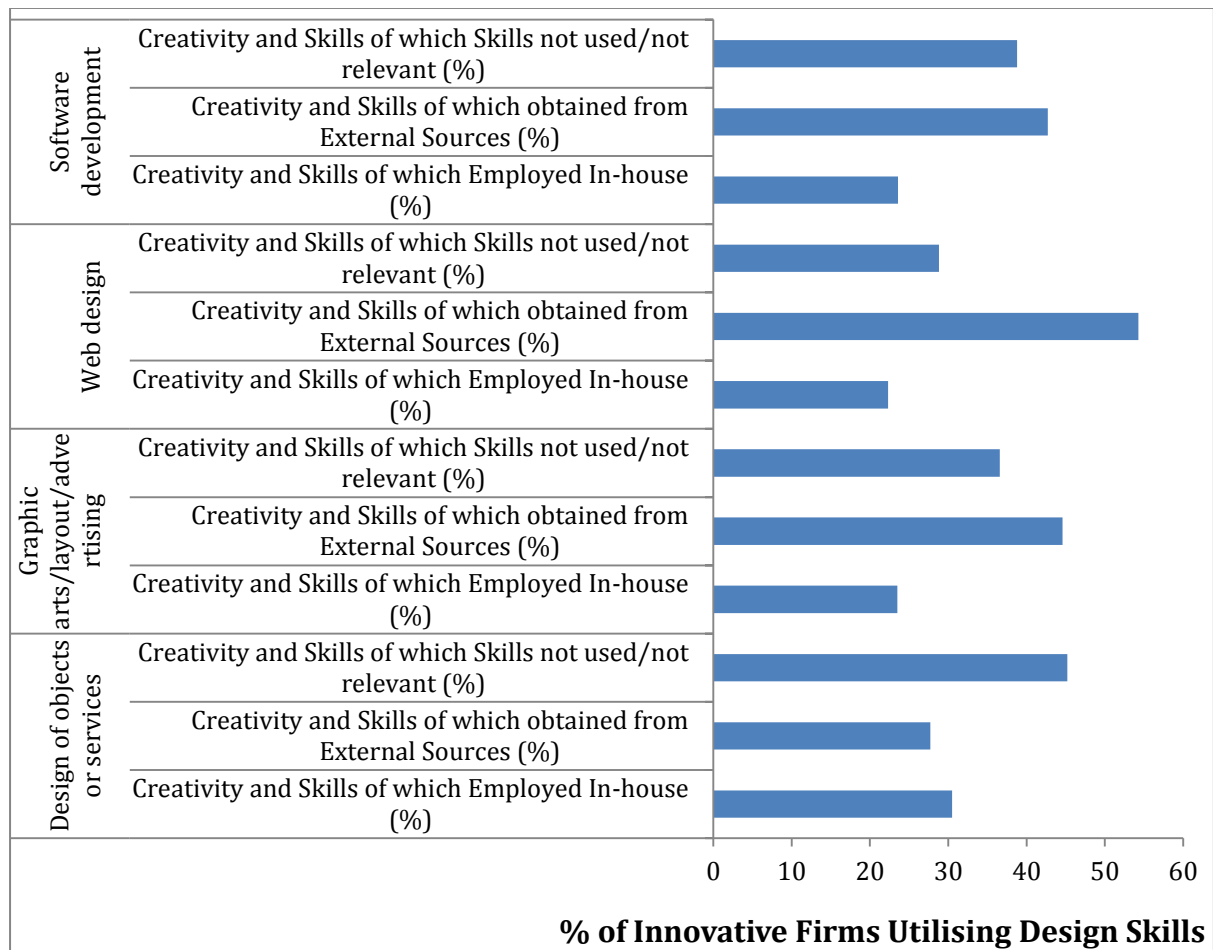
- Design of objects or services
- Graphic arts/layout/advertising
- Web design
- Software development

It is noted that only firms with 10 or more persons engaged are included in the CIS survey, and that NACE 2 74.1 is not included in the firms surveyed (this NACE 2 code represents the Specialised Design Group within the 'Irish Design Footprint'). Figure 6 presents the response of firms that indicated that they were innovation active. Figure 6 highlights, the % of innovative firms that employed individuals for specific design skills and/or obtained these skills from external sources, and Table 8 provides a ranking of the proportion of innovative firms selecting each option for utilisation of the different design-related skills.

It is noted that the publically available Irish CIS 2010 data on innovative firms provides data for firms that indicated that they accessed skills externally and/or they employ skills in-house, similarly for responses on in-house employment of skills. Thus, for each skill set the 3 responses highlighted in Figures 6 and 7 do not add to 100%.

⁶⁰ Engineering/applied sciences is not included as a design skill as it is not specific to design engineering skills.

Figure 6 Proportion of innovative firms in Ireland (across industry and selected services- NACE Rev 2 05-39, 46 49-53, 58,61 – 66 and 71) that utilised different design skills in 2010.



Source: Community Innovation Survey (CIS) 2010, CSO.

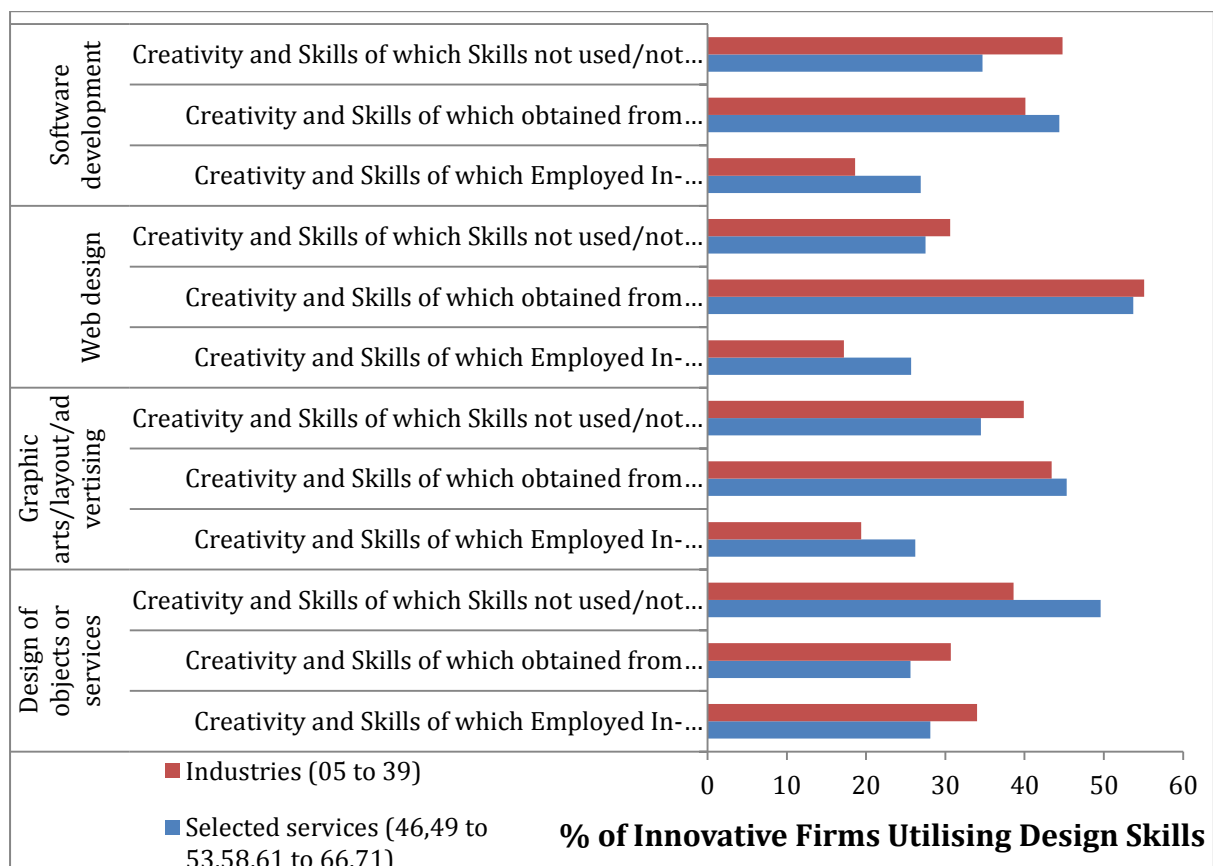
Table 8 Ranking of the proportion of innovative firms selecting each option for accessing design-related skills (highest proportion = 1).

	Software Development	Web Design	Graphic Arts/layout/advertising	Design of Objects or Services
Eternally Sourced	1	1	1	3
In-House	3	3	3	2
Not Relevant	2	2	2	1

With support of the CIS (2010) data reported by Eurostat (which provides data on the level of overlap between those employing both in-house skills and accessing skills externally), it is determined **that for software development, web design and graphic arts, a higher proportion of innovative firms utilise design skills⁶¹ than consider design not relevant.** Furthermore **for these types of design skills, more innovative firms seek skills from external sources than employ the skills in-house.**

For skills related to design of objects or services, a higher proportion of innovative firms also utilise these skills than consider them not relevant/not used. However, in comparison to the other design skills considered, innovative firms demonstrated a preference to employ these skills in-house rather than access them externally.

Figure 7 Proportion of innovative firms in Ireland in industry (NACE Rev 2 05-39) and selected services (NACE Rev 2 46, 49-53, 58,61 – 66 and 71) separately, that utilised different design skills in 2010.



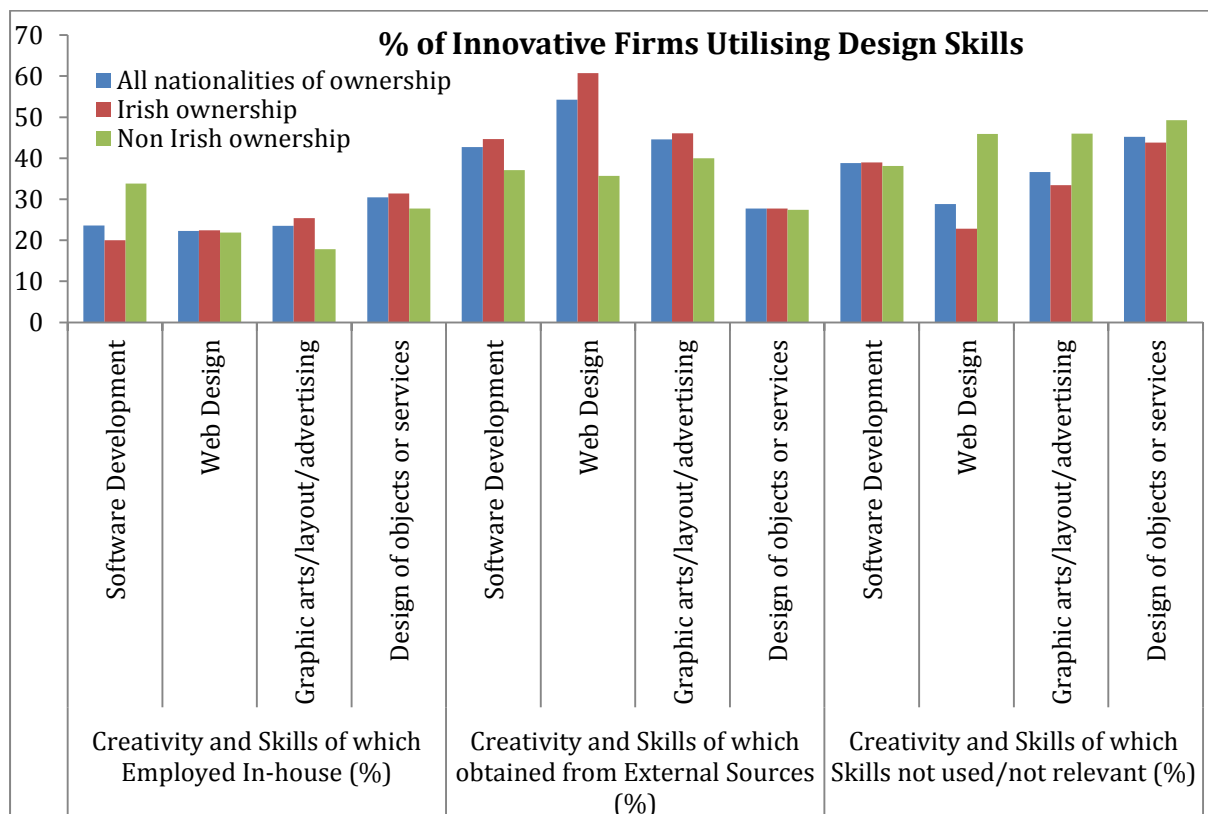
Source: Community Innovation Survey (CIS) 2010, CSO.

⁶¹ Based on either external or in-house skills.

The Irish CIS (2010) data is presented again in Figure 7, but the data is disaggregated into the responses from firms in Industry (NACE 2 05-39) and Services Sectors (NACE Rev 2 46, 49-53,58,61-66, 71).

For Software Development, Web Design, Graphic and Design of Objects or Services the ranking of responses for firms for both the Services Sectors and Industry Sectors is generally the same as that indicated in Table 8 for all firms. The exception is for software development where a higher % of innovative firms in the Industry Sectors indicate that such skills are not used/not relevant than the proportion of innovative firms utilising such skills externally or in-house. For software development, a higher proportion of innovative firms in the Industry Sectors that utilise such skills access the skills externally than employ them in-house. In comparison, in the Services Sectors, a higher proportion of innovative firms access these software skills externally then consider them not used/not relevant. Across the three options for responses, the smallest proportion of innovative firms in the Services Sectors utilise in-house software development skills.

Figure 8 Proportion of innovative firms that utilised design skills in 2010, according to ownership status.



Source: Community Innovation Survey (CIS) 2010, CSO.

The type and level at which firms utilise design skills does vary according to Irish-owned and FDI firms as can be seen in Figure 8⁶². In particular:

- the proportion of innovative Irish owned firms employing in-house software development skills is significantly less than for FDI firms,
- the proportion of Irish-owned firms employing in-house graphics skills and skills related to designing of objects or services is higher than for FDI firms.
- A higher proportion of innovative Irish-owned firms over FDI firms utilised design-related skills by accessing them externally.
- A lower proportion of innovative Irish-owned firms consider the various design-related skills not used/not relevant relative to the innovative FDI firms.

Overall, Irish-owned innovative firms demonstrate a higher tendency to utilise design skills related to web design, graphic arts/layout/advertising and design of objects or services than foreign-owned firms. The utilisation of skills related to software development was similar for both Irish-owned and foreign-owned firms.

Table 9 summarises the comparison between the utilisation of design-related skills by innovative Irish-owned and innovative FDI firms⁶³. The symbols indicate whether the proportion of innovative Irish-owned firm is higher (>), lower (<) or the same (-) as the proportion of innovative FDI firms.

⁶² Again, this data is based on the Irish CIS data reported, which does not take into account the level of overlap in responses between those firms that access skills externally and access firms internally.

⁶³ Again, this data is based on the Irish CIS data reported, which does not take into account the level of overlap in responses between those firms that access skills externally and access firms internally.

Table 9 Comparison of the proportion of Irish-owned firms utilising design skills relative to the proportion of foreign-owned firms utilising design skills.

	Skills Employed in-house	Skills Obtained from External Sources	Skills not used/not relevant
	Irish-owned	Irish-owned	Irish-owned
Software Development	<*	>	-
Web Design	-	>*	<*
Graphic Arts/layout/advertising	>	>	<*
Design of Objects or Services	>	-	<

* Indicates where the difference is greater than 10%.

Finally, the utilisation of design skills by different size firms in Ireland was reviewed and the data is presented in Figures 9(a) - 9(c). The data indicates that **a higher proportion of innovative smaller firms (10-49) access software development, graphics and web design skills externally rather than in-house.** In comparison for skills related to design of objects or services, a slightly higher proportion of these smaller firms access in-house skills rather than via external sources. This approach to accessing design-related skills was also found to hold for medium innovative firms (50-249).

For larger innovative firms (250+), a higher proportion of firms accessed skills in-house for both software development and design of objects and skills than accessed skills externally. In contrast a higher proportion of larger innovative firms accessed web design and graphics skills externally than employed these skills in-house.

Apart, from web-design skills, the data indicates that the larger the innovative firm, the greater the tendency is to utilise design-related skills: the tendency to utilise web design skills was similar regardless of firm size.

Figure 9(a) Proportion of innovative firms accessing design skills in-house in 2010.

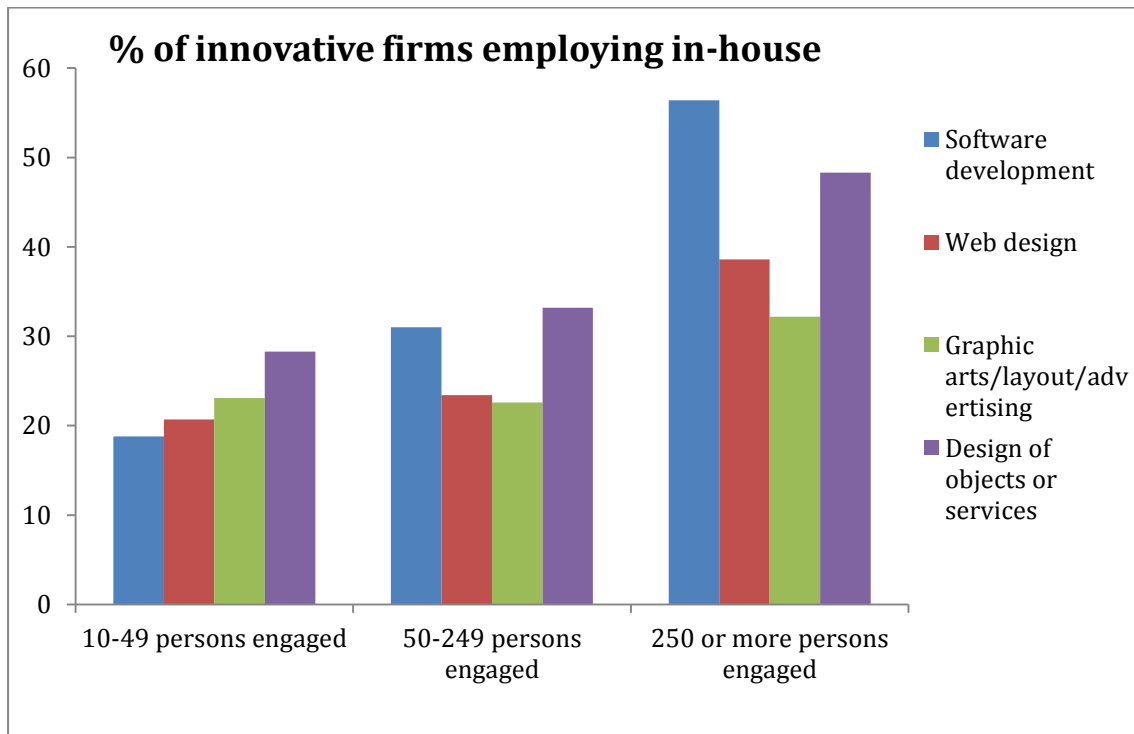


Figure 9(b) Proportion of innovative firms indicating design skills not relevant in 2010.

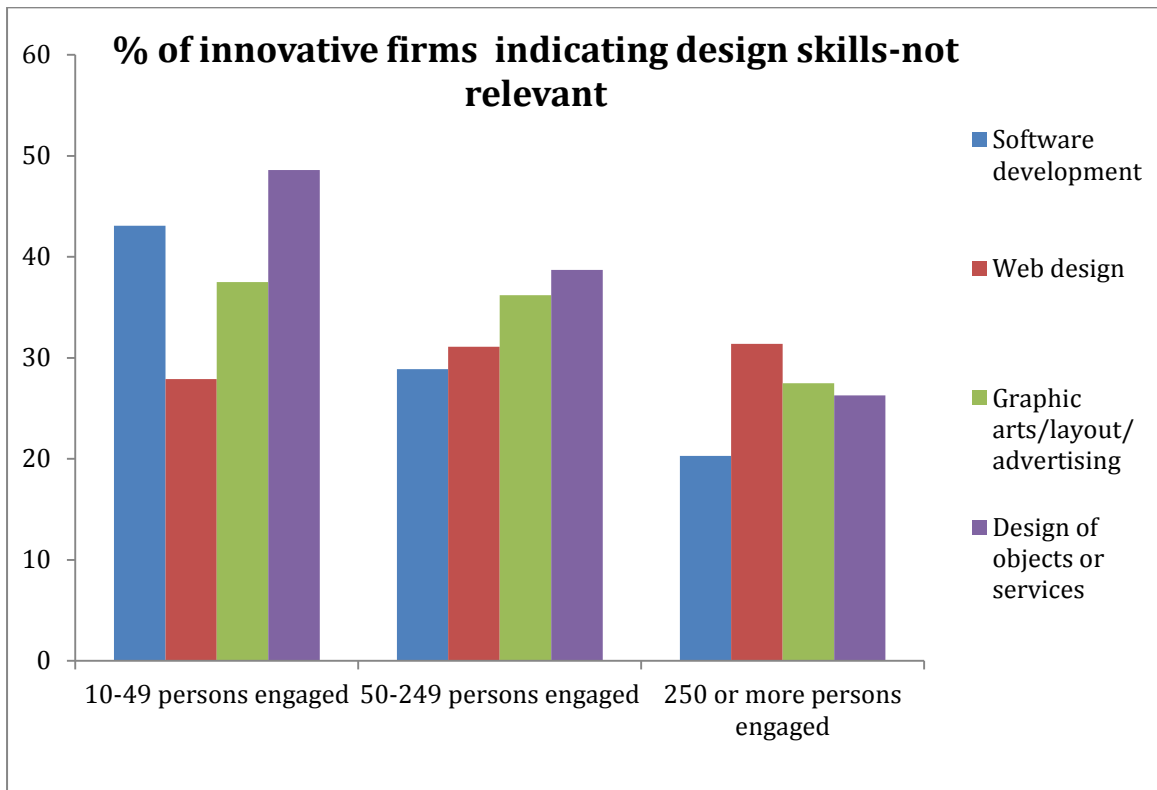
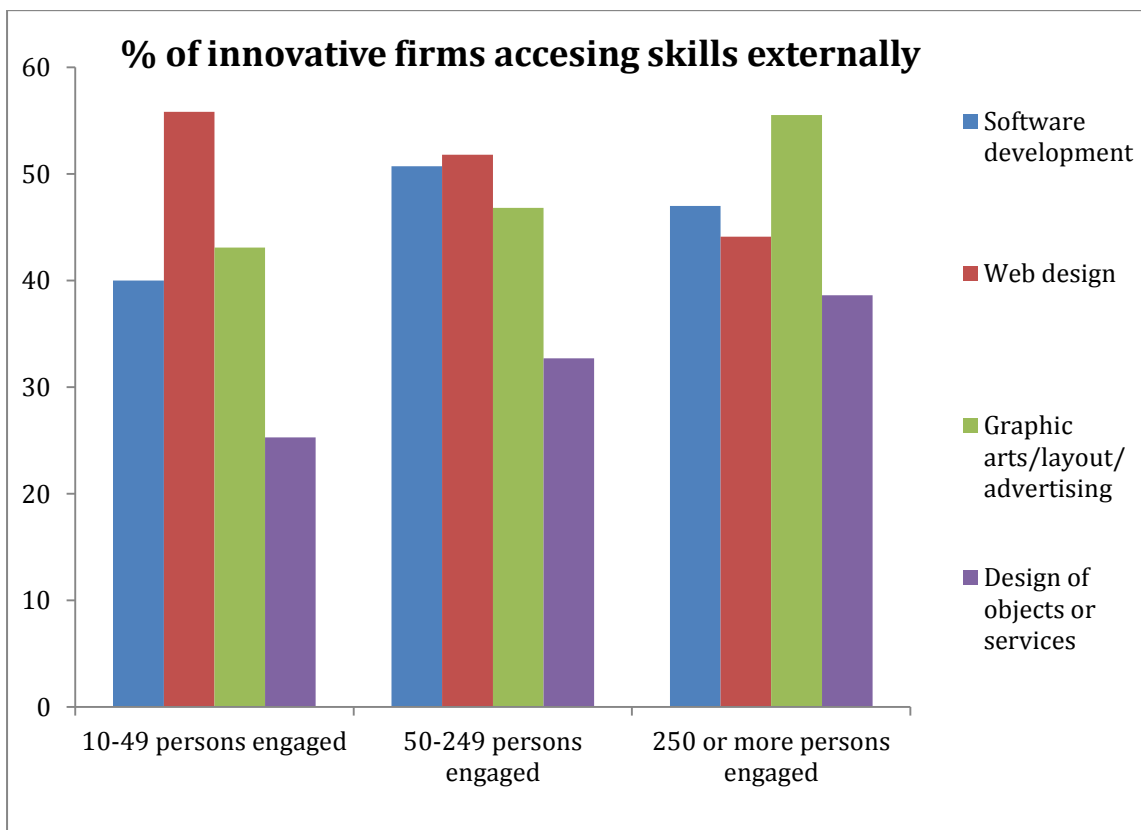


Figure 9 (c) Proportion of innovative firms accessing design skills externally in 2010.



Source: Community Innovation Survey (CIS) 2010, CSO.

3.4.2 International Comparison of Utilisation of Design Skills by Innovative Firms

The proportion of innovative firms in the Services Sectors and the Industry Sectors respectively that access or do not access design skills can be compared across Member State countries., based on CIS data provided by Eurostat.

Based on Irish CIS (2010) data reported for Ireland, the number of innovative firms in the Industry Sector (NACE 2 B-E, not including G (Construction) is estimated at 1,629, and the number of innovative firms in the Services Sectors (defined here as NACE 2 G46-M71) is 2,445⁶⁴. It is noted that the CIS Survey coverage not extend to include firms in NACE 2 74.1 which relates to the NACE 2 code assigned to the Specialised Design Group in the 'Irish Design Footprint'.

The proportion of innovative firms that do or do not access these design related skills is shown in the charts in Appendix 6. It is noted that the data indicates separately the proportions of firms that utilise external skills only, in-house skills only and also the firms that utilise both in-house and external skills. The charts indicate the proportion of innovative firms in each country according to Industry and Services Sectors for each of the 4 design related skills.

For each of the design-related skills, there is variation across countries as to the level and approach of innovative firms to how or if such skills are utilised. However, an estimated collective ranking of the proportion of innovative firms selecting each option for was made and these rankings are highlighted in Table 10 and Table 11 for the Industry and Services Sector respectively⁶⁵. Table 10 and Table 11 also highlight how the skills utilisation ranking order for Ireland compares with the international ranking across each of the design-related skills.

⁶⁴ It is noted that there is some small differences between the CIS and Eurostat reported data. The Eurostat data base reports 1,646 innovative firms for the industry sector and 2,472 innovative firms for Services Sectors. The variations are small and do not impact the messaging.

⁶⁵ The ranking was based on a simple method of estimating the average level of innovative firms selecting each option.

Table 10 Overall ranking of utilisation of design skills by innovative firms across European countries and comparison to Ireland ranking of utilisation of design skills.

	Software Development	Web Design	Graphic Arts/layout/ advertising	Design of Objects or Services
Eternally Sourced	2	1 / 2	2	3
In-House	3	3	3	2
Not Relevant/Not Used	1	1 / 2	1	1
In-house and externally sourced	4	4	4	4
Comparison to Ireland	Same order of ranking for Industry Sectors	Ireland's order: 1. External 2. Not Relevant 3. In-house	Same order of ranking for Industry Sectors	Same order of ranking for Industry Sectors

Source: Eurostat CIS data

For the Industry Sectors, the behaviour of Irish based innovative firms follows similar patterns in terms of the utilisation levels and source of design skills as for the general pattern demonstrated across the European States collectively.

Table 11 Overall ranking of the approach to utilisation of design skills by innovative firms in Industry Sectors across European countries and comparison to Ireland ranking of approach to utilisation of design skills.

	Software Development	Web Design	Graphic Arts/layout/ advertising	Design of Objects or Services
Eternally Sourced	1	1	1	2
In-House	3	3	3	3-wide spread
Not Relevant/Not Used	2	2- significant variation across countries	2	1
In-house and externally sourced	4	4	4	4
Comparison to Ireland	Same order of ranking for Services Sectors	Same order of ranking for Services Sectors	Same order of ranking for Services Sector	Ireland's order: 1. Not 2. In-house 3. External

Source: Eurostat CIS data

For the Services Sectors, there is some deviation in the ranking order for Ireland relative to the European collective pattern for Design of Objects or Services.

For Design of Objects or Services skills, a higher proportion of Irish based innovative firms indicate that they access these skills in-house over externally. However, the proportion indicating the use of in-house and external skills are close for Ireland and the spread across countries in the proportion of innovative firms citing use of in-house skills is very varied for this particular skill. Thus, no real significance is drawn from the deviation.

Overall, the behaviour of Irish based innovative firms follows similar patterns in terms of the utilisation levels and source of design skills as for the general pattern demonstrated across the European States collectively.

In summary, a number of salient points can be extracted from the review of utilisation of design-related skills in innovative firms across Europe:

- A higher proportion of innovative firms across European countries utilise software development skills than do not: this is true for both the Industry and Services Sectors. There is a strong signal that when these skills are required there is a preference for external access of software development skills amongst innovative firms across the countries.

The same characteristic as described above was found to be true for innovative firms in Ireland. Further, Ireland is below the European average in terms of the proportion of innovative firms in the Industry Sector that consider skills related to software development as not relevant/not used. However, Ireland is above the European average in terms of the proportion of innovative firms in the Services Sector that consider skills related to software development as not relevant/not used.

- On average a higher proportion of innovative firms across Europe in both the Services and Industry Sectors engage skills related to graphic arts/layout/advertising than do not utilise these skills. Firms that do utilise these skills are more likely to access these skills externally than employ them in-house. Only a small proportion (in the range of 0-20%) of innovative firms employs both in-house skills and obtains them from external sources. Similarly a higher proportion of innovative firms in Ireland in both Services and Industry Sectors engage skills related to graphic arts/layout/advertising than do not utilise these skills; and the preference is to access the skills externally. Further, Ireland is below the European average in terms of the proportion of innovative firms in both the Industry and Services Sectors that consider skills related to graphic arts/layout/advertising not relevant/not used.

- On average, similar proportions of innovative firms in the Industry Sector across European countries utilise and do not utilise skills related to design of objects or services. In the Industry Sector, when they do utilise these types of skills, they demonstrate a slight preference towards employing them in-house over accessing them externally.

In the Services Sector, on average a higher proportion of innovative firms across the European countries do not utilise skills related to design of objects or services. However, when firms do utilise these skills, based on average values, it was found that innovative firms across Europe exhibit a slight preference for external access of these skills over employment in-house.

In comparison, a higher proportion of innovative firms in the Industry Sector in Ireland utilise skills related to design of objects or services than do not, and the firms in Ireland also demonstrate a slight tendency towards accessing skills in-house over accessing external skills. In the Services Sector, similar proportions of innovative firms utilise and do not utilise skills related to design of objects or services. Contrary to the case across all European countries, Irish based innovative firms demonstrate a slight preference for accessing the skills in-house over external access.

- A higher proportion of innovative firms on average across the European countries in both the Industry and Services Sectors utilise skills related to web design than do not. In both the Services and Industry Sectors the innovative firms in Europe on average demonstrate a tendency to access skills externally over employing them in-house.

Innovative firm in Ireland also follows the aforementioned patterns for utilisation of web design, demonstrating a very clear preference for externally accessing skills over employing them in-house.

3.5 Summary of Findings on the Value and Characteristics of the Design Workforce

3.5.1 Employment in Design Occupations⁶⁶

1. Employment in design occupations in Ireland (excluding those employed in design related occupations in Advertising) ranged between 45,000–48,000 over the years 2011- 2014: in 2014, Digital-Design accounted for 48% of employment in design occupations.
2. The average contribution to employment in Ireland was 2.48% per year by design occupations over the 2011-2014 timeframe.
3. Growth in employment in design occupations was 6.7% over the 2011-2014 timeframe, thus broadly keeping abreast with growth in the overall Irish economy over the 2011-2014 timeframe⁶⁷.
4. While definitions of the ‘Design Footprint’ may vary to encompass a narrower or broader remit for design than is the case for the ‘Irish Design Footprint’, it was found that the impact on total employment in Ireland by persons working in design occupations is similar to that in the UK when compared on a ‘like with like’ measurement basis.
5. UK data also indicates that a high proportion of employment in design roles is contributed from the occupations associated with the Digital Design Group: in 2014 employment in digital design roles accounted for 38% of employment in design occupations in the UK.
6. The analysis supports the conclusion that employment of designers in Ireland is not limited to sectors more traditionally associated with design, but rather designers are employed across a wide range of economic sectors in Ireland

⁶⁶ The data findings are based on analysis of data taken from the Quarterly Household National Surveys (QHNS)

⁶⁷ Estimated at 7.25% between Q4 2011 and Q4 2014 based on employment figures measured through the QHNS and published by the CSO.

3.5.2 Characteristics of the Design Workforce⁶⁸

7. Workers across all Design Groups are mostly male at approximately 75% of the design workforce employed in 2014. This is higher than the proportion of males employed across the whole economy which is estimated at 54.3% of the 1.94 million persons employed in Q 4 2014.⁶⁹
8. Designers mostly work full time, with approximately 90% of the total design workforce in full-time employment in 2014. This is higher than the overall proportion of full time workers employed across the economy, which was estimated as 77% of the total 1.94 million persons employed in Q 4 2014.⁷⁰
9. Designers are represented by a larger proportion of younger workers than the national average. Overall, the proportion of the design workforce employed in 2014 that were aged > 55 years was 8.7%. In comparison, those aged > 55 years accounted for 16.4% of the total employment in the country in Q4 2014.
10. One fifth (21%) of the designers employed in Ireland in 2014 were non-nationals. In comparison, non-nationals accounted for 14.8% of total employment across the full economy in Q4 2014.
11. Designers demonstrate a higher level of third level qualifications than the national average. Overall 66% of the design workforce employed in 2014 had third level education. This compares to 54% of those employed in Q4 2014 in the total economy having a third level qualification. However at a disaggregated level, the proportion of workers with third level qualifications in the web-design subcategory and the Craft Group are below the national average.
12. Outside of designers in the Digital Group, designers are more likely to be self-employed than other workers in the total Irish workforce. Furthermore, these self-employed designers are more likely to work alone than other workers in other occupations in Ireland.

⁶⁸ The data findings are based on analysis of data taken from the QHNS as reported in the reports of the EGFSN National Skills Bulletins.

⁶⁹ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

⁷⁰ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

13. The design workforce characteristics are found to be similar in the UK and Ireland, relative to the national workforce characteristics in each country.

3.5.3 Utilisation of Design-Related Skills by Innovative Firms^{71,72}

14. For all types of design-related skills considered (software development, web design, graphic arts/layout/advertising and design of objects or services) a higher proportion of innovative firms utilise design skills than do not.
15. For skills related to software development, web design and graphic arts/layout/advertising, innovative firms that utilise these skills have a tendency to access them externally. In contrast innovative firms that utilise skills related to design of objects or services have a tendency to employ them in-house.
16. Overall, Irish-owned innovative firms demonstrate a higher tendency to utilise design skills related to web design, graphic arts/layout/advertising and design of objects or services than foreign-owned firms. The utilisation of skills related to software development was similar for both Irish-owned and foreign-owned firms.
17. Apart, from web-design skills, the data indicates that the bigger the innovative firm, the greater the tendency is to utilise design-related skills: the tendency to utilise web design skills was similar regardless of firm size.
18. Small and medium firms that utilise design skills tend to access software development, graphics and web design skills externally rather than in-house and employ skills related to design of objects or services in-house.
19. For larger innovative firms (250+), a higher proportion of firms accessed skills in-house - for both software development and design of objects and services -

⁷¹ These findings were developed based on analysis of the Community Innovation Survey, in Ireland and for other European countries: the findings are based on business sectors of the economy.

⁷² A parallel research study 'A Study of the Role and Importance of Design in Firms in Ireland in Non-Design-Intensive Sectors, December 2015, A report for the Department of Jobs, Enterprise and Innovation by CM International and PDR' also provides a picture of the use of design skills in innovative firms in both quantitative and qualitative terms.

than accessed these skills externally. In contrast a higher proportion of larger innovative firms accessed web design and graphics skills externally than employed these skills in-house.

20. Overall, the behaviour of Irish based innovative firms follows similar patterns, in terms of the utilisation levels and source of the design related skills considered (software development, web design, graphic arts/layout/advertising and design of objects or services), as for the general pattern demonstrated across the European States collectively.

4. Design Sectors

4.1 Introduction

As outlined in Chapter 2, in defining the 'Irish Design Footprint' a series of Design Sectors were mapped within each of the Design Groups.

As also outlined in Chapter 2, for the purposes of measuring economic contribution related to the design intensive industries, the preferred measurements to be made are as follows:

- Total employment in Design Sectors (design and non-design roles)
- Total GVA of Design Sectors
- Total exports from Design Sectors

However, as discussed in Chapter 2, data availability issues currently prohibit the estimation of employment and GVA of the total Design Sectors. Employment data and GVA data is available for some of the Design Sectors mapped within the Design Groups, and data for these sectors will be reported in this chapter and compared internationally. It is noted that employment figures in this analysis includes both employment in the design roles and non-design roles in the Design Sectors.

The total contribution of agency-client firms accounts for ~ 80% of total exports⁷³. Export data is reported across all of the Design Sectors based on analysis of exports from agency-client firms: though it is noted that the analysis is limited to firms with 10 or more persons engaged. This particularly impacts the estimation of exports from Sectors in the Craft and Specialised Design Groups: firms in these Sectors tend to be micro and small firms and so exports from these firms will not be captured due to the 10 person criterion for inclusion.

⁷³ Agency exports accounts for ~78% of total exports from Ireland in 2012, which were 91,688 €mn in Goods and 85,527 €mn in services). Export data for Goods - http://www.cso.ie/en/media/csoie/releasespublications/documents/externaltrade/2013/gei_dec2013.pdf Export data for Services: <http://www.cso.ie/en/releasesandpublications/er/its/internationaltradeinservices2013/>, Annual Survey of Economic Impact, 2013, DJEI.

4.2 Employment in Design Sectors

4.2.1 Employment in Design Sectors in Ireland

Table 12 presents the data that is available for specific NACE Rev 2 codes across the Design Groups with regards to employment for 2008-2012. In this case, the employment figures relate to both employment in design-roles and employment in non-design roles in each sector.

Given the intermittent nature of the data by year, and the absence of data for several of the Design Sectors/ Groups, **the total employment across the Design Sectors cannot currently be measured for Ireland based on the available official statistics.**

However, the approach was taken to focus on the latest available data for three specific NACE Rev 2 codes: 71.12 (Engineering Activities and Related Technical Consultancy), 71.11(Architectural Activities), and 74.1 (Specialised Design Activities.).

It is noted that the data source for these measurements is the Annual Service Inquiry, which captures firms of 1 person and larger.

On inspection of the data as set out in Table 12, a number of observations of note can be made:

- If in 2011, all the designers within the occupations defined in the Engineering Group were employed within the businesses associated with NACE Rev 2 71.12, then this would account for less than 10% of design roles in the sector- which is below the definitional limit of designers (30% design roles) required for categorisations as a Design Sector. However, it is also noted that mechanical and civil engineers have not been included in the 'Irish Design Footprint' (as they were in the 'UK Design Footprint' developed by the UK Design Council). It is likely that in this industry sector (71.12) some mechanical and civil engineers are employed, however without access to the data for allowing mapping of occupations within 4 digit NACE Rev 2 codes, the extent to which these occupations are engaged in this sector cannot be ascertained. Thus, in the absence of further detail, the starting assumption of NACE Rev 2 71.12 as a Design Sector is retained in this study.

- The Specialised Design Group includes activities associated with fashion design, graphic design, interior design and industrial design. Given the level of employment associated with occupations in the Specialised-Design Group, the data indicates that many of these types of designers work outside of the Specialised Design Activities Sector (NACE 2 74.1).
- The latest data available is for 2011/2012, and so while each of the 3 Design Sectors has shown a decline in employment since 2008- 2011/2012, the absence of more recent data does not give any insight into how the sectors have been performing during the economic recovery.

Table 12 Data available for number of persons employed in the Design Groups/Group subcategories in the ‘Irish Design Footprint’.

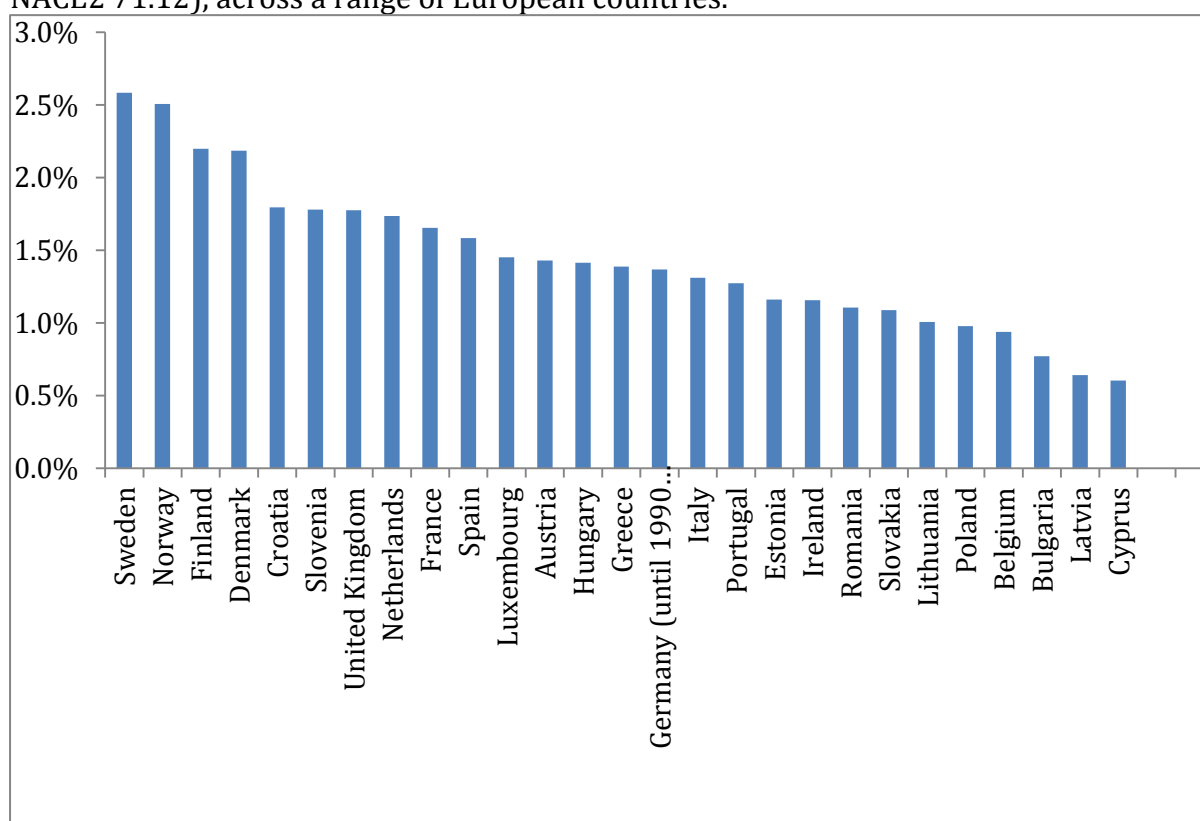
Group	Description	NACE 2	Category	Total Number of persons employed						
				2008	2009	2010	2011	2012	2013	2014
Design-Engineering	<i>Engineering activities and related technical consultancy</i>	71.12	Services	17545	14739	13116	12648	:	:	
	<i>Manufacture of other products and woods</i>	16.29	Manufacturing	529	:	448	419	:	:	
	<i>Manufacture of consumer electronics</i>	26.4	Manufacturing	748	471	:	:	:	:	
Design-Architecture	<i>Architectural Activities</i>	71.11	Services	11360	7864	6562	5768	5,058	:	
Design-Specialised	<i>Specialised Design Activites</i>	74.1	Services	3190	2839	2596	2586	2647	:	
	<i>Manufacture of other wearing apparel and accessories</i>	14.19	Manufacturing	:	172	172	:	:	:	
Design-Digital	<i>Computer Programming Activities</i>	62.01	Services	:	:	:	:	:	:	
	<i>Other Software Publishing</i>	58.29	Services	:	:	:	:	:	:	
	<i>Publishing of Computer Games</i>	58.21	Services	:	:	:	:	:	:	
Design-Advertising										
Design-Craft	<i>Manufacture of Jewellery</i>	32.12	Manufacturing	:	:	:	:	:	:	
	<i>Binding and related services</i>	18.14	Manufacturing	:	:	:	:	:	:	
	<i>Manufacture of ceramic household and ornamental articles</i>	23.41	Manufacturing	:	:	:	:	:	:	
	<i>Manufacture of other furniture</i>	31.09	Manufacturing	:	:	:	:	731	:	
	<i>Repair of Furniture and other home furnishings</i>	95.24	Services	:	:	:	:	:	:	

Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics- industry and services databases.

4.2.3. Employment in Design Sectors: International Comparison

Figure 10(a)-10(c) provides a comparison of the contribution of the 3 Design Sectors (71.12, 71.11 and 74.1) to employment in **the business economy** (excluding employment associated with financial and insurance activities)⁷⁴ across a number of European countries.

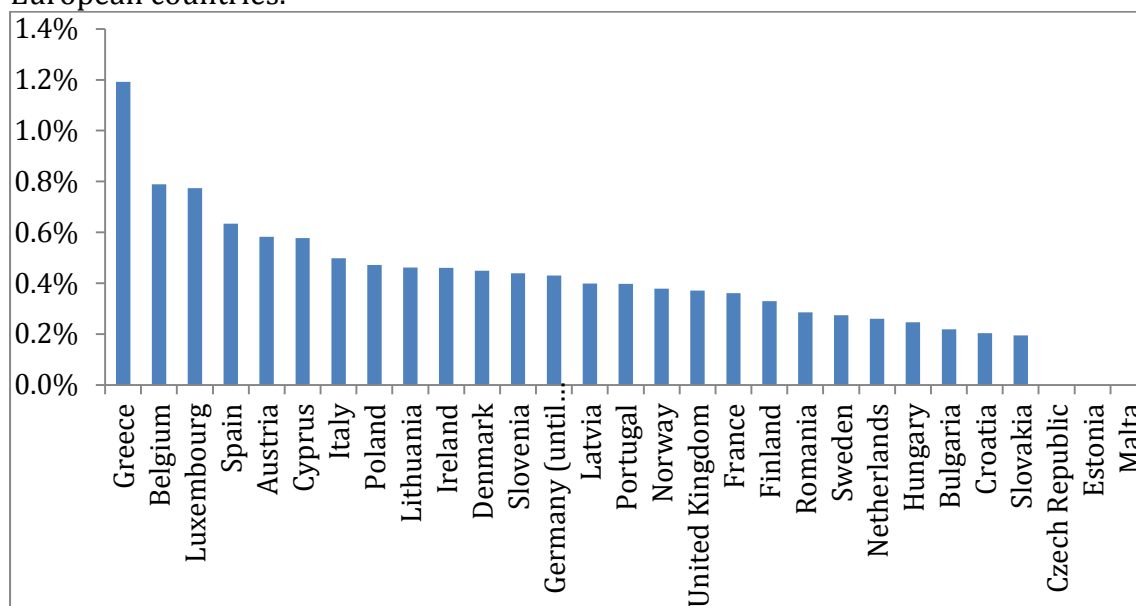
Figure 10 (a) Contribution to employment in the business economy in 2011 by the Design-Engineering Activities and Related Technical Consultancy Sector (based on NACE2 71.12), across a range of European countries.



Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics- services databases.

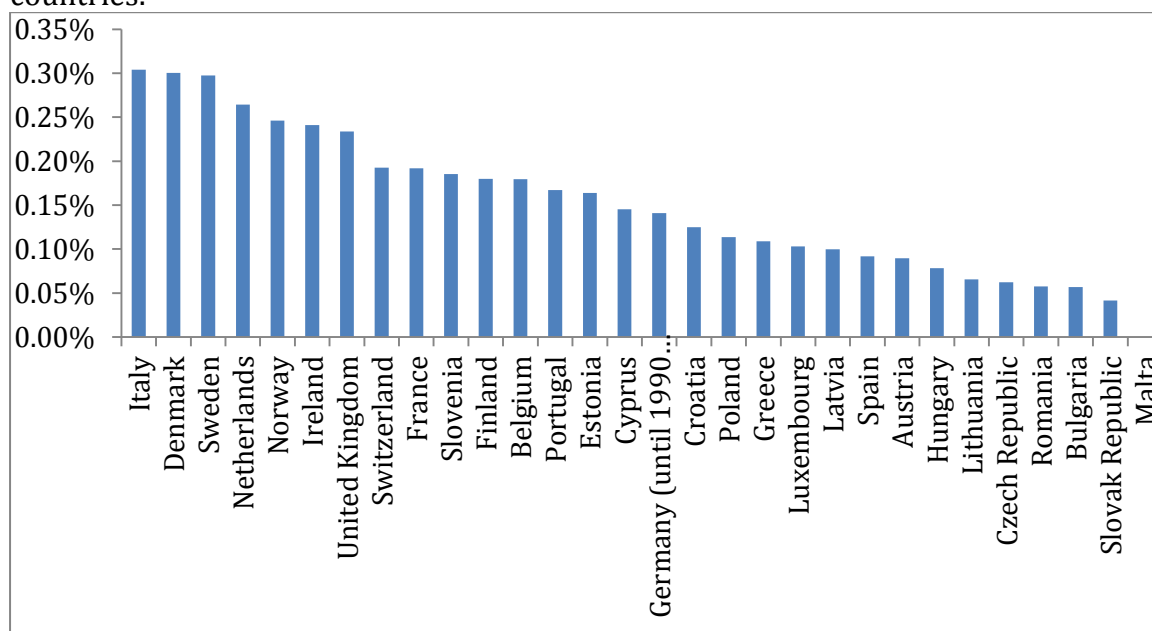
⁷⁴ Employment in the business economy represents employment in NACE B-N, excluding financial and insurance activities.

Figure 10 (b) Contribution to employment in the business economy in 2012 by the Design-Architectural Activities Sector (based on NACE2 71.11), across a range of European countries.



Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics- services databases.

Figure 10 (c) Contribution to employment in the business economy in 2012 by the Specialised Design Activities Sector (based on NACE2 74.1), across a range of European countries.⁷⁵



Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics-services databases.

⁷⁵ It is noted that based on data reported by the Department of Culture, Media and Sport reports employment based on their Annual Population Survey and reported of 95,000 employed in NACE Rev 2 71.11 in 2013, as opposed to the 71,000 reported in the Eurostat database, and report employment of 122,000 in 2013 for NACE Rev 2 74.1 as opposed to the 42,000 figure reported through Eurostat – indicating some potential discrepancies in the figures for the UK.

On review of the data presented in Figure 10(a)-10(c), the contribution to employment in the business economy for each country is typically highest in the Engineering Activities and Related Technical Consultancy Sector (NACE 2 72.12), followed by the Architectural Activities Sector (NACE 2 71.11) and then the Specialised Design Activities Sector (NACE 2 74.1).

Based on data available across countries for each sector, Ireland is ranked 19/27 in the Engineering Sector, 10/26 in the Architecture Sector and 6/29 in the Specialised Design Sector, in terms of contribution to employment in the business economy.

4.3 GVA in Design Sectors

Given the intermittent nature of the data by year, and the absence of data for several of the Design Sectors **the total GVA contribution from the Design Sectors cannot be measured for Ireland currently based on the available official statistics.**

Table 13 presents the data that is available for the Design Sectors with regards to GVA for 2008-2012. The approach was again taken to focus on three specific NACE Rev 2 codes: 71.12 (Engineering Activities and Related Technical Consultancy), 71.11(Architectural Activities), and 74.1 (Specialised Design Activities.).

It is noted that the data source for these measurements is the Annual Service Inquiry, which captures firms of 1 person and larger.

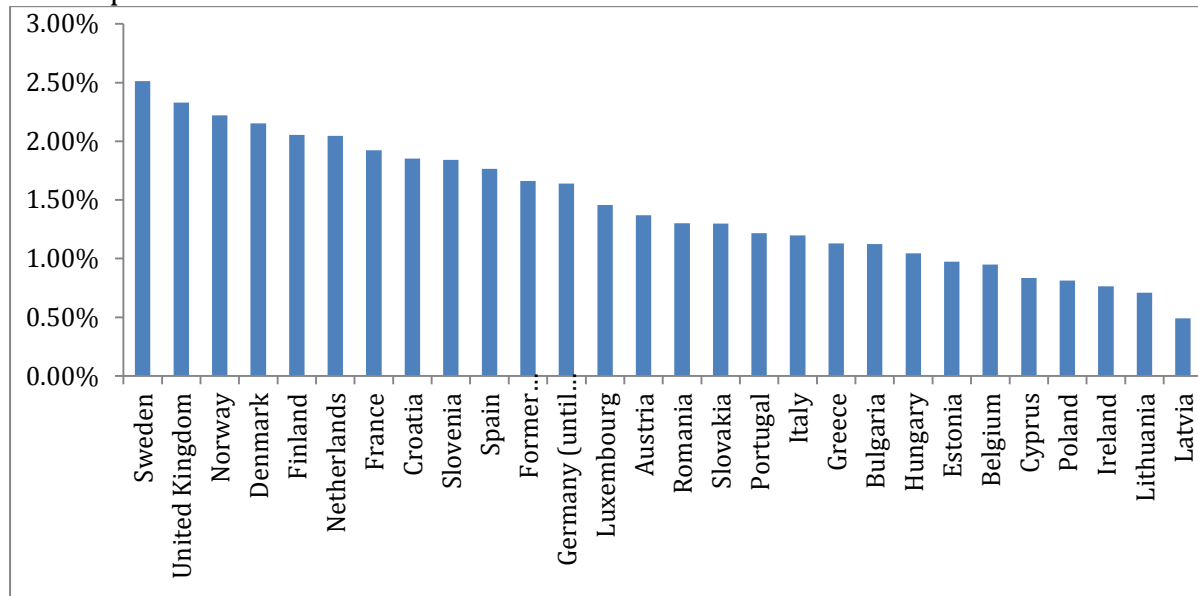
Figure 11(a)-11(c) provides a comparison of the contribution of the 3 sectors (71.12, 71.11, 74.1) to employment in the business economy (excluding employment associated with financial and insurance activities) across a number of European countries.

Table 13 Data available for GVA in the Design Sectors in the 'Irish Design Footprint'.

Group	Description	NACE 2	Category	Gross Value Added at Factor Cost (€ mns)						
				2008	2009	2010	2011	2012	2013	2014
Design-Engineering	<i>Engineering activities and related technical consultancy</i>	71.12	Services	955.4	821.3	686.3	671.6	:	:	
	<i>Manufacture of other products and woods</i>	16.29	Manufacturing	20.8	:	15.1	11.7	:	:	
	<i>Manufacture of consumer electronics</i>	26.4	Manufacturing	76.3	53.4	:	:	:	:	
Design-Architecture	<i>Architectural Activities</i>	71.11	Services	700.9	368.5	248.3	301.6	211.1	:	
Design-Specialised	<i>Specialised Design Activities</i>	74.1	Services	117.9	88.9	93	79.1	78.4	:	
	<i>Manufacture of other wearing apparel and accessories</i>	14.19	Manufacturing	:	3.4	9.2	:	:	:	
Design-Digital	<i>Computer Programming Activities</i>	62.01	Services	:	:	:	:	:	:	
	<i>Other Software Publishing</i>	58.29	Services	:	:	:	:	:	:	
	<i>Publishing of Computer Games</i>	58.21	Services	:	:	:	:	:	:	
Design-Advertising										
Design-Craft	<i>Manufacture of Jewellery</i>	32.12	Manufacturing	:	:	:	:	:	:	
	<i>Binding and related services</i>	18.14	Manufacturing	:	:	:	:	:	:	
	<i>Manufacture of ceramic household and ornamental articles</i>	23.41	Manufacturing	:	:	:	:	:	:	
	<i>Manufacture of other furniture</i>	31.09	Manufacturing	:	:	:	:	28.5	:	
	<i>Repair of Furniture and other home furnishings</i>	95.24	Services	:	:	:	:	:	:	

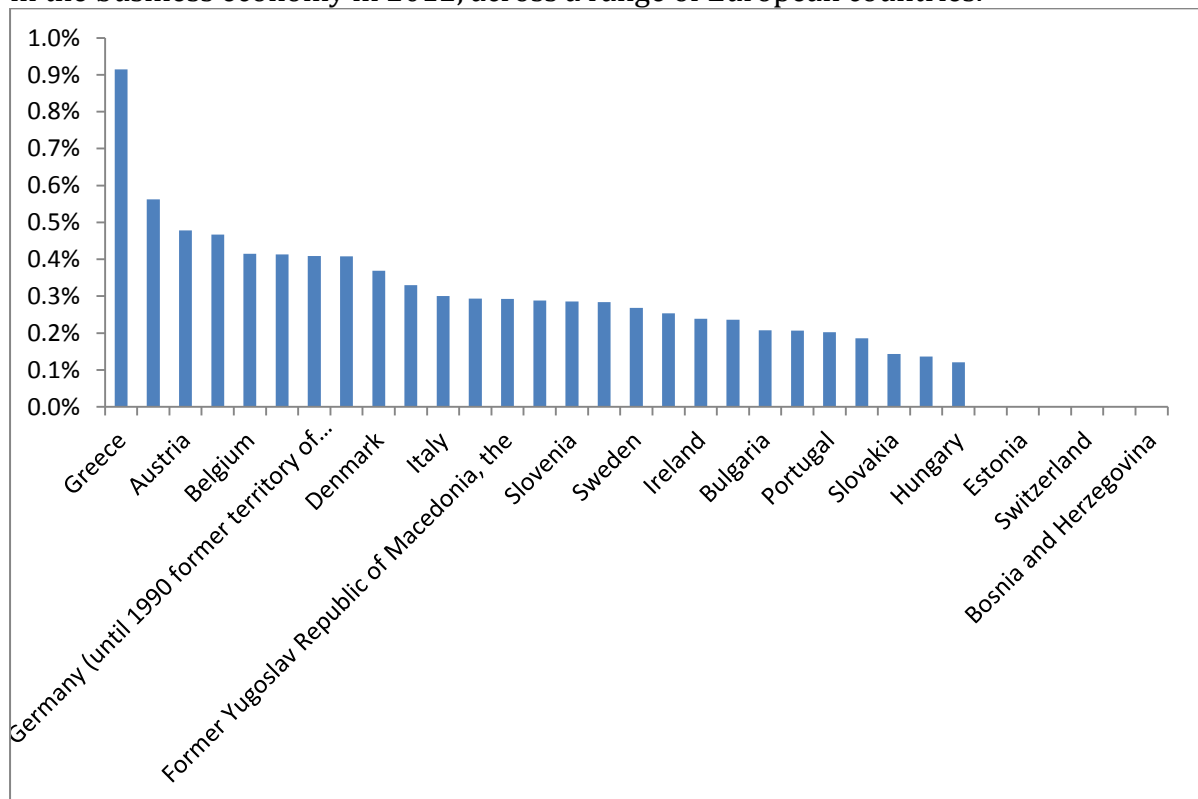
Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics- industry and services databases.

Figure 11(a) Contribution of Gross Value Added at factor cost by the Engineering Activities and Related Technical Consultancy Sector (based on NACE Rev 2 71.12) to total Gross Value Added at factor cost in the business economy in 2011, across a range of European countries.



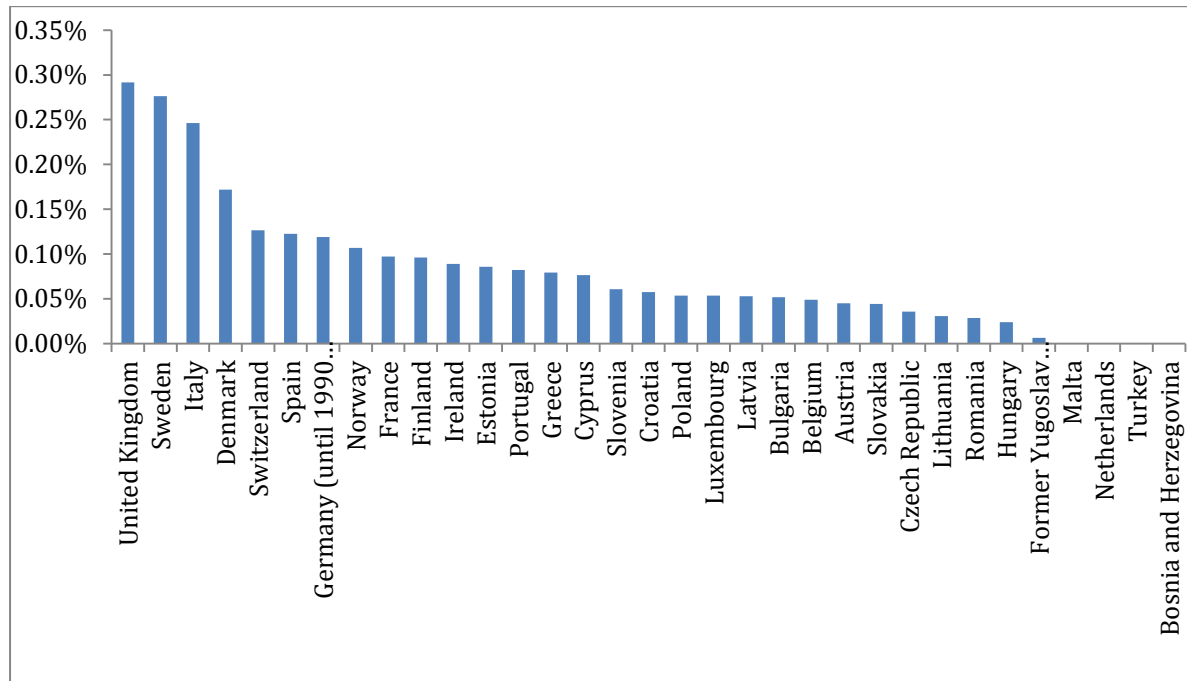
Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics-services databases.

Figure 11(b) Contribution of Gross Value Added at factor cost by the Architectural Activities Sector (based on NACE Rev 2 71.11) to total Gross Value Added at factor cost in the business economy in 2012, across a range of European countries.



Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics-services databases.

Figure 11(c) Contribution of Gross Value Added at factor cost by the Specialised Design Activities Sector (based on NACE Rev 2 74.1) to total Gross Value Added at factor cost in the business economy in 2012, across a range of European countries.



Source: Eurostat Structural Business Statistics: Detailed Annual Enterprise Statistics-services databases.

On review of the data presented in Figure 11(a)-11(c), the contribution to GVA in the business economy for each country is typically highest in the Engineering Activities and Related Technical Consultancy Sector (NACE 2 72.12), followed by the Architectural Activities Sector (NACE 2 71.11) and then the Specialised Design Activities Sector (NACE 2 74.1).

Based on data available across countries for each sector, Ireland is ranked 26/28 in the Engineering Sector, 19/27 in the Architecture Sector and 11/29 in the Specialised Design Sector.⁷⁶

⁷⁶ It is acknowledged that cross comparison between 2012 and 2011 data in comparing the Engineering Sector to the Architecture and Specialised Design Sector.

4.4 Exports from Design Sectors

Export data was extracted from the ABSEI Survey⁷⁷ for the NACE Rev 2 codes as assigned within the 'Irish Design Footprint'. This analysis is limited in that data covers only exports by agency-client firms. This survey also only covers firms with 10 or more persons engaged, and so exports from micro-businesses and small business are not captured.

Figure 12 portrays the proportion of exports for each Design Group in 2012 (2013 data was not available for the Architecture Group for confidentiality reasons and so the total value of exports from the Design Sectors cannot be estimated for 2013).

The value of exports for each of the Design Groups for the period 2008-2013 time frame is set out in Table 14. It is noted that no NACE Rev 2 code was assigned to the Design-Advertising Group within the definition of the 'Irish Design Footprint' and as such there is no export data associated with this Design Group.

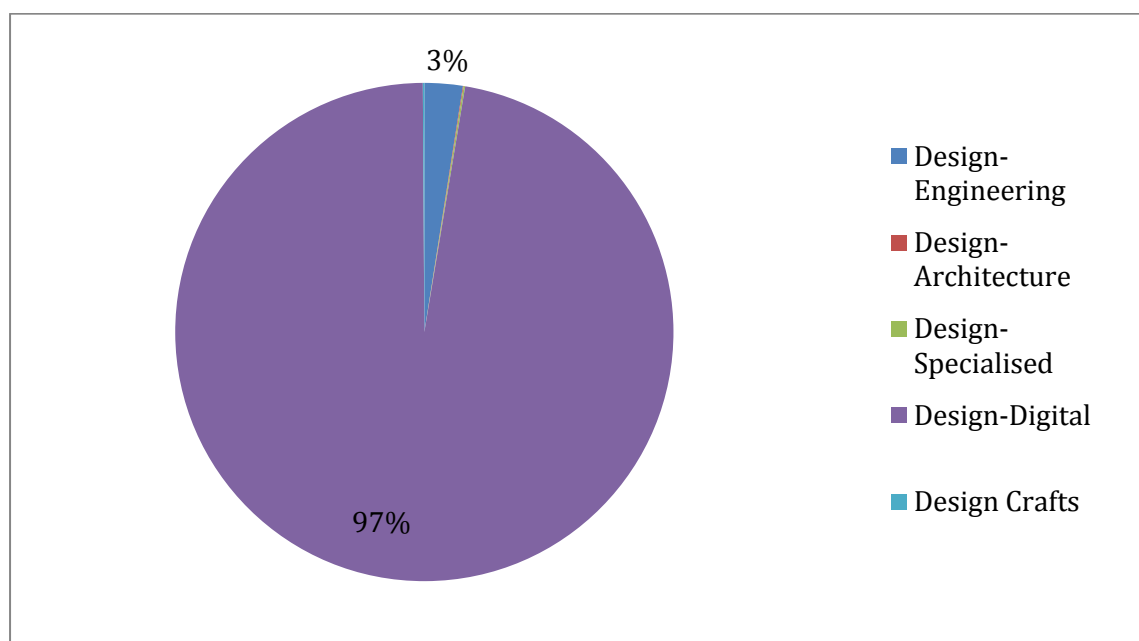
The total value of exports for the agency-client firms in the design-intensive industries as set out in the definition for the 'Irish Design Footprint' was €34,642.429 million in 2012:19.5% of total exports in the economy in 2012. From the chart in Figure 12 it can be seen that collectively the Sectors captured by the Design-Digital Group are by far the dominant contributors to exports- the Digital Group contributes 97% of total design exports by agency firms in 2012. The next biggest contributor to exports is the Engineering Group, at approximately 3% of exports. However, the value of exports from the Digital Group is more than an order of magnitude higher than exports from the Engineering Group.

It is noted that the Craft and Specialised Design Groups are represented by a large number of small firms. Consequently it is acknowledged that the exports from the Crafts and Specialised Design Groups are underrepresented in the data presented in Table 14: data from the survey is based on agency-client firms and firms with 10 or more persons engaged.

It is also noted that within each Design Group, a small numbers of firms (typically 6-10 firms) account for ~ 90% of exports for a given Design Group.

⁷⁷ ABSEI survey coverage is across all NACE codes.

Figure 12 Proportion of total design exports in 2012 according to the Design Sectors associated with the Design Groups within the ‘Irish Design Footprint’.



Source: ABSEI database, DJEI.

Table 14 Annual value of exports from each of the Design Groups over the time period 2008-2011.

	2008	2009	2010	2011	2012	2013
	€k	€k	€k	€k	€k	€k
Design-Engineering	648,807	620,301	623,619	886,990	858,494	952,560
Design-Architecture	12,717	9,335	9,549	13,524	16,647	C
Design-Specialised	17,157	14,305	21,745	33,381	34,229	41,200
Design-Digital	25,352,861	24,944,918	26,199,827	30,653,923	33,699,705	37,360,151
Design Crafts	44,673	27,986	37,575	38,441	33,354	39,118
Total	26,076,216	25,616,844	26,892,315	31,626,260	34,642,429	38,393,030

Source: ABSEI database, DJEI.

Exports from the Design Sectors increased by 33% over the period 2008-2012. The growth rate over the 2008-2012 period is presented in Table 15 for each of the Design-Groups. All Design Groups, with the exception of the Crafts Group, exhibit strong growth in exports that exceed the average export growth rate of 12.6% for agency-client firms across all industry sectors over the period of 2008 - 2012. However, it is noted that the limitation of the coverage of the agency-client survey to firms with 10 or more persons

engaged is likely to have a significant impact on the measurement of the contribution of exports from the Design-Craft Group: previous analysis in this study has indicated 36% of the workforce in this Group are self-employed with no-employees and so any exports from this cohort will not be measured in this analysis, even in the event that they are an agency-client firm. Furthermore, it is worth noting that for the Craft Group, the value of exports increased by 40% in 2013 relative to the export value in 2009.

Table 15 Growth rate of exports between 2008-2012 for each Design Group in the ‘Irish Design Footprint’.

Design Group	Growth Rate 2008-2012	Growth Rate 2009-2013
Design-Engineering	32.32%	53.56%
Design-Architecture	30.90%	
Design-Specialised	99.51%	188.02%
Design-Digital	32.92%	49.77%
Design Crafts	-25.34%	39.78%

Source: ABSEI database, SPD, DJEI, 2015.

Additional analysis of the data revealed that exports from the Digital Design Sectors were dominated (at 99.8% of total exports from the Digital Design Sectors) in 2012 by exports from FDI companies.

The other Design Groups are predominantly indigenous firms: with no contribution from FDI companies in the sectors associated with Craft, Architecture or Specialised Design and a mix of FDI and indigenous exports from the Engineering Group.

Thus, overall, FDI firms in the Digital Group are responsible for ~97% of total exports from the Design Sectors in Ireland.

In summary, the **Digital Group is a dominant source of exports for the ‘Irish Design Footprint’, representing 97% of exports from agency-client firms in Design Sectors and 24.3% of all exports by agency-client firms in 2012.** As a proportion of total exports (not just agency-client firms), it’s is estimated that the Design-Digital

Group accounts for ~ **19% of total exports from Ireland in 2012**⁷⁸, and **these design exports are predominantly associated with the FDI base in Ireland.**

The total exports associated with agency-client firms across the Design Groups, other than the Digital Group, was €0.94 bn in 2012, or 0.54% of total exports in the economy in 2012.

In comparison, the UK Design Council estimated the value of goods and services exports from the Design Sectors in the UK as £9.8bn in 2013 (2.1% of total UK exports in 2013). Thus, **in absolute terms, the value of exports from Design Sectors in Ireland (at > €37 bn in 2013-not including Sectors in the Engineering Group) is reported as higher than that of the exports from Design Sectors in the UK.**

4.5 Summary of Findings on Design Sectors in Ireland

1. The total employment and GVA in the Design Sectors cannot currently be measured for Ireland based on the available official statistics for Ireland.
2. Based on data available for three Design Sectors in Ireland in 2011/2012, it was determined that the contribution to GVA and employment in the business economy by firms was highest in the Engineering Activities and Related Technical Consultancy Sector (NACE 2 72.12), followed by Architectural Activities Sector (NACE 2 71.11) and then the Specialised Design Activities Sector (NACE 2 74.1): this is typical across other European countries also.
3. Based on the employment and GVA contribution in the business economy, Ireland performs better overall in terms of ranking position against other European countries for the Specialised-Design Activities Sector over the Engineering Activities and Related Technical Consultancy Sector and Architectural Activities Sector.

⁷⁸ Based on agency-client firms accounting for ~ 80% of all exports in the economy

4. The total exports by agency-client firms in Design Sectors as included in the definition for the 'Irish Design Footprint' was €34, 642.429 million in 2012:19.5% of total exports in the Irish economy in 2012.
5. Exports from the agency-client firms operating in the Design Sectors increased by 33% over the period 2008-2012, significantly greater than the average export growth rate of 12.6% for agency-client firms across all business sectors over the period.
6. The Design Sectors associated with the Digital Group are a dominant source of exports for Ireland. Agency-client firms operating within the Design Sectors of the Digital Group represent 97% of total exports by agency-client firms within the Design Sectors of the six Groups in the 'Irish Design Footprint'. The Design Sectors in the Digital Group account for 19% of total exports from Ireland in 2012 and these exports are predominantly associated with the FDI base in Ireland.
7. Outside of the Digital Group, exports by agency-client firms in the other Design Sectors was estimated as €0.94 bn in 2012 or 0.54% of total exports in the economy in 2012:
 - the Design Sectors in the Engineering Group accounted for ~ €860 million.
 - Design Sectors in the Craft, Architecture and Specialised Design Groups accounted for ~ €85 million- though it is recognised that a significant number of businesses in these sectors have less than 10 persons engaged and so the value of €85 million reported for exports from these Design Sectors is an underrepresentation⁷⁹ of the exports from these Design Sectors.
8. Exports from the Design Sectors in Ireland were valued at more than €38 bn in 2013, much greater than the £9.8 bn (estimated at ~ €12.78bn based on

⁷⁹ Export measurements were made based on agency client forms and from firms with 10 or more persons engaged.

a€1:£0.77 exchange rate) reported by the UK for exports from a similar set of Design Sectors.

5. Summary of Key Findings and Conclusions on the Economic Value and Characteristics of the 'Irish Design Footprint'

5.1 The 'Irish Design Footprint': Key Data Findings

Based on the analysis of data for Ireland and elsewhere, a number of key data findings were developed and are set out below with regards to the value and characteristics of the 'Irish Design Footprint'.

Employment in Design Occupations

1. Employment in design occupations in Ireland (excluding those employed in design related occupations in Advertising) ranged between 45,000–48,000 over the years 2011- 2014: in 2014, Digital-Design accounted for 48% of employment in design occupations.
2. The average contribution to employment in Ireland was 2.48% per year by design occupations over the 2011-2014 timeframe.
3. Growth in employment in design occupations was 6.7% over the 2011-2014 timeframe, thus broadly keeping abreast with growth in the overall Irish economy over the 2011-2014 timeframe.
4. While definitions of the 'Design Footprint' may vary to encompass a narrower or broader remit for design than is the case for the 'Irish Design Footprint', it was found that the impact on total employment in Ireland by persons working in design occupations is similar to that in the UK when compared on a 'like with like' measurement basis.
5. UK data also indicates that a high proportion of employment in design roles is contributed from the occupations associated with the Digital Design Group: in

2014 employment in digital design roles accounted for 38% of employment in design occupations in the UK.

6. The analysis supports the conclusion that employment of designers in Ireland is not limited to sectors more traditionally associated with design, but rather designers are employed across a wide range of economic sectors in Ireland

Characteristics of the Design Workforce

7. Workers across all Design Groups are mostly male at approximately 75% of the design workforce employed in 2014. This is higher than the proportion of males employed across the whole economy which is estimated at 54.3% of the 1.94 million persons employed in Q 4 2014.⁸⁰
8. Designers mostly work full time, with approximately 90% of the total design workforce in full-time employment in 2014. This is higher than the overall proportion of full time workers employed across the economy, which was estimated as 77% of the total 1.94 million persons employed in Q 4 2014.⁸¹
9. Designers are represented by a larger proportion of younger workers than the national average. Overall, the proportion of the design workforce employed in 2014 that were aged > 55 years was 8.7%. In comparison, those aged > 55 years accounted for 16.4% of the total employment in the country in Q4 2014.
10. One fifth (21%) of the designers employed in Ireland in 2014 were non-nationals. In comparison, non-nationals accounted for 14.8% of total employment across the full economy in Q4 2014.
11. Designers demonstrate a higher level of third level qualifications than the national average. Overall 66% of the design workforce employed in 2014 had third level education. This compares to 54% of those employed in Q4 2014 in the total economy having a third level qualification. However at a disaggregated

⁸⁰ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

⁸¹ Based on Q4 2014 QHNS data as reported in the EGFSN National Skills Bulletin 2015.

level, the proportion of workers with third level qualifications in the web-design subcategory and the Craft Group are below the national average.

12. Outside of designers in the Digital Group, designers are more likely to be self-employed than other workers in the total Irish workforce. Furthermore, these self-employed designers are more likely to work alone than other workers in other occupations in Ireland.
13. The design workforce characteristics are found to be similar in the UK and Ireland, relative to the national workforce characteristics in each country.

Utilisation of Design-Related Skills by Innovative Firms

14. For all types of design-related skills considered (software development, web design, graphic arts/layout/advertising and design of objects or services) a higher proportion of innovative firms utilise design skills than do not.
15. For skills related to software development, web design and graphic arts/layout/advertising, innovative firms that utilise these skills have a tendency to access them externally. In contrast innovative firms that utilise skills related to design of objects or services have a tendency to employ them in-house.
16. Overall, Irish-owned innovative firms demonstrate a higher tendency to utilise design skills related to web design, graphic arts/layout/advertising and design of objects or services than foreign-owned firms. The utilisation of skills related to software development was similar for both Irish-owned and foreign-owned firms.
17. Apart, from web-design skills, the data indicates that the bigger the innovative firm, the greater the tendency is to utilise design-related skills: the tendency to utilise web design skills was similar regardless of firm size.
18. Small and medium firms that utilise design skills tend to access software development, graphics and web design skills externally rather than in-house and employ skills related to design of objects or services in-house.

19. For larger innovative firms (250+), a higher proportion of firms accessed skills in-house - for both software development and design of objects and services - than accessed these skills externally. In contrast a higher proportion of larger innovative firms accessed web design and graphics skills externally than employed these skills in-house.
20. Overall, the behaviour of Irish based innovative firms follows similar patterns, in terms of the utilisation levels and source of the design related skills considered (software development, web design, graphic arts/layout/advertising and design of objects or services), as for the general pattern demonstrated across the European States collectively.

Design Sectors in Ireland

21. The total employment and GVA in the Design Sectors cannot currently be measured for Ireland based on the available official statistics for Ireland.
22. Based on data available for three Design Sectors in Ireland in 2011/2012, it was determined that the contribution to GVA and employment in the business economy by firms was highest in the Engineering Activities and Related Technical Consultancy Sector (NACE 2 72.12), followed by Architectural Activities Sector (NACE 2 71.11) and then the Specialised Design Activities Sector (NACE 2 74.1): this is typical across other European countries also.
23. Based on the employment and GVA contribution in the business economy, Ireland performs better overall in terms of ranking position against other European countries for the Specialised-Design Activities Sector over the Engineering Activities and Related Technical Consultancy Sector and Architectural Activities Sector.
24. The total exports by agency-client firms in Design Sectors as included in the definition for the 'Irish Design Footprint' was €34, 642.429 million in 2012:19.5% of total exports in the Irish economy in 2012.

25. Exports from the agency-client firms operating in the Design Sectors increased by 33% over the period 2008-2012, significantly greater than the average export growth rate of 12.6% for agency-client firms across all business sectors over the period.
26. The Design Sectors associated with the Digital Group are a dominant source of exports for Ireland. Agency-client firms operating within the Design Sectors of the Digital Group represent 97% of total exports by agency-client firms within the Design Sectors of the six Groups in the 'Irish Design Footprint'. The Design Sectors in the Digital Group account for 19% of total exports from Ireland in 2012 and these exports are predominantly associated with the FDI base in Ireland.
27. Outside of the Digital Group, exports by agency-client firms in the other Design Sectors was estimated as €0.94 bn in 2012 or 0.54% of total exports in the economy in 2012:
- the Design Sectors in the Engineering Group accounted for ~ €860 million.
 - Design Sectors in the Craft, Architecture and Specialised Design Groups accounted for ~ €85 million- though it is recognised that a significant number of businesses in these sectors have less than 10 persons engaged and so the value of €85 million reported for exports from these Design Sectors is an underrepresentation⁸² of the exports from these Design Sectors.
28. Exports from the Design Sectors in Ireland were valued at more than €38 bn in 2013, much greater than the £9.8 bn (estimated at ~ €12.78bn based on a €1:£0.77 exchange rate) reported by the UK for exports from a similar set of Design Sectors.

⁸² Export measurements were made based on agency client forms and from firms with 10 or more persons engaged.

5.2 Conclusions on the Economic Value and Characteristics of the 'Irish Design Footprint'

Despite the data related issues encountered in this study a number of important research findings have been uncovered with regard to the value and characterisation of the 'Irish Design Footprint' and they support the development of the following conclusions with regards to the economic value and characterisation of the 'Irish Design Footprint':

- **Design has a significant economic impact on the Irish Economy** as demonstrated by the contribution of designers to total employment (2.48% in 2014) and the contribution of Design Sectors to total exports from Ireland (19.5% in 2012).
- **This economic impact is significantly influenced by the Digital Design Group**, which contributes 97% of all exports from the Design Sectors in 2012 and 1.2% of employment in design roles in 2014.
- **When the Digital Design Group is excluded from the analysis, the remaining Design Groups are measured to contribute €0.94 bn⁸³ to exports and 1.28% to total employment – a still considerable contribution to the Irish economy.**
- **The employment impact of the 'Design Footprint' for Ireland is comparable to that in the UK when compared on a similar basis. However, exports from the Design Sectors in Ireland were valued at more than €37 bn in 2013, much greater than the £9.8 bn (estimated at €12.78 bn⁸⁴) reported by the UK for exports from a similar set of Design Sectors.⁸⁵**

⁸³ As the measurement was focused on firms with 10 or more persons engaged, it is acknowledged that the contribution to exports by firms in the Craft and Specialised Design Sectors is not fully reflected in this figure.

⁸⁴ Based on an exchange rate of 0.77:1 €:£.

⁸⁵ The Engineering Sector (NACE2 72.12) is not included in the comparative analysis for exports as the UK Design Council did not include an Engineering Group in their analysis.

- The Design Workforce in Ireland over all can be characterised as:
 - male dominated
 - young
 - educated
 - in full time employment
 - higher level of non-nationals than the national average.
 - entrepreneurial i.e. a higher proportion of self-employed than the national average

Of course within the Design Groups and subcategories the profiles deviate somewhat from this overarching profile, particularly across the Craft related workers.

- While the research found that a higher proportion of innovative firms utilise design skills than do not, design-skills appeared to be less utilised by FDI firms than by indigenous firms.⁸⁶
- **The research indicates the opportunity for enhancing the value of design to Ireland by encouraging more females to engage in design occupations.**
- **Based on international comparison, the research indicates an opportunity for increasing economic impact from design in Ireland by focusing on increasing activity in Design-Engineering.** Comparison of GVA and employment impact measurements across European countries for the Design Sectors of Engineering Activities and Related Technical Consultancy, Architectural Activities and Specialised Design Activities indicates that Ireland performs best on a comparative basis for the Specialised Design Sector, followed by the Architectural Sector, and less well for the Engineering Sector. Given that in absolute terms the Engineering Sector is typically the biggest contributor to GVA and employment in each country (of the three aforementioned sectors), this finding highlights that there may be an economic opportunity for Ireland in focusing on this Engineering Sector.

⁸⁶ Based on analysis of the Community Innovation Survey.

Finally, **it is acknowledged that much further work is needed to fully measure and capture the economic impact of design activities in the Irish economy.** The cross disciplinary nature of design makes it difficult to measure and this is an issue that is being grappled with by all countries looking to develop estimates of the value of design. **However, based on the analysis carried out here, it is considered that future measurements of design should be based on official statistics and then further supplemented with survey analysis as appropriate.**

Appendix 1

Appendix 1: IC and SOC codes for the Design Footprint- a UK Ireland comparison

Table AP1 Comparison of the map of IC and SOC codes for the ‘Irish Design Footprint’ relative to the map developed by the UK Design Council for the ‘UK Design Footprint’.

	Indicates Codes included based on inclusion in OECD definition of Design								
	Indicates Codes included based on inclusion in UK Craft Council definition of Design								
	Indicates Codes included based on inclusion in Irish Craft Council Definition of Design (mapped from SOC(90) codes)								
Group	Description	SOC (2010)	Included in UK Design Council Definition	Description	NACE 2	Included in UK Design Council Definition	SOC (2010) included in UK Design Council Definition but not in Irish Design Definition		
Design-Engineering	Design and Development Engineers	2126	Y	<i>Engineering Activities and Related Technical Consultancy</i>	71.12	N	Mechanical Engineers	2122	
				<i>Manufacture of Other Products and Woods</i>	16.29	Y	Engineering Professionals n.e.c.*	2129	
				<i>Manufacture of Consumer Electronics</i>	26.4	Y			
Design-Architecture	Architects	2431	Y	<i>Architectural Activities</i>	71.11	Y	Civil Engineers	2121	
	Town Planning Officers	2432	Y				Gardeners and Landscapers*	5113	
	Chartered Architectural Technologist	2435	Y						
	Architectural and Town Planning Technicians	3121	Y						
	Draughts Persons	3122	Y						
Design-Specialised	Graphic Design	3421	Y	<i>Specialised Design Activites</i>	74.1	Y	Artists*	3411	
	Product, Clothing, and Related Designers	3422	Y	<i>Manufacture of Other Wearing Apparel and Accessories</i>	14.19	Y			
Design-Digital	IT Business Analysts, Architects and Systems Designers	2135	Y	<i>Computer Programming Activities</i>	62.01	Y			
	Programmers and Software Development Professionals	2136	Y	<i>Other Software Publishing</i>	58.29	Y			
	Web Design and Development Professionals	2137	Y	<i>Publishing of Computer Games</i>	58.21	Y			

* Engineering Professionals n.e.c ,* Gardeners and Landscapers, * Artists: In the UK Design Council map, the occupations are only included when they occur within specific IC codes.

Table AP1 ctd.. Comparison of the map of IC and SOC codes for the ‘Irish Design Footprint’ relative to the map developed by the UK Design Council for the ‘UK Design Footprint’.

	Indicates Codes included based on inclusion in OECD definition of Design						
	Indicates Codes included based on inclusion in UK Craft Council definition of Design						
	Indicates Codes included based on inclusion in Irish Craft Council Definition of Design (mapped from SOC(90) codes)						
Group	Description	SOC (2010)	Included in UK Design Council Definition	Description	NACE 2	Included in UK Design Council Definition	SOC (2010) included in UK Design Council Definition but not in Irish Design Definition
Design-Advertising	Advertising accounts managers and creative directors	2473	Y				
Design-Craft	Smiths and forge workers	5211	Y	<i>Manufacture of Jewellery</i>	<i>32.12</i>	Y	
	Furniture makers and other craft woodworkers	5442	Y	<i>Binding and related services</i>	<i>18.14</i>	N	
	Glass product and ceramics makers decorators and finishers	5441	Y	<i>Manufacture of ceramic household and ornamental articles</i>	<i>23.41</i>	Y	
	Weavers and knitters	5411	Y	<i>Manufacture of other furniture</i>	<i>31.09</i>	N	
	Other skilled trades n.e.c	5449	Y	<i>Repair of Furniture and other home furnishings</i>	<i>95.24</i>	N	
	Upholsterers	5412	N				
	Print Finishing and Binding Workers	5423	N				
	Footwear and leather working trades	5413	N				
	Tailors and dressmakers	5414	Y				
	Textiles, garments and related trades n.e.c	5419	N				
	Precision instrument makers, and repairers	5224	N				
Sewing Machinists	8137	N					

Appendix 2

Appendix 2: Data Sources

Potential data sources for use in estimating the economic contribution (and other auxiliary descriptive measures) of design in Ireland are described below. In the first, instance, details of the development of the Central Business Register are provided, as this forms the sampling frame for a number of the relevant survey-based data sources. Subsequently, a number of data sources are described with regard to the methodological approach for collecting data, the business coverage provided, specific points of note and limitations of the data source as they pertain to the current exercise.

Table AP2 provides a summary of data access, data coverage and availability of data according to SOC and IC codes for each of the data sources.

Table AP3 sets out a summary of the potential data sources to be utilised for this study with regards to the preferred measurements for this study, along with limitations of the data and availability of data for international comparison for the preferred measurements.

1. Central Business Register

The Central Business Register is compiled and maintained by the Central Statistic's Office (CSO). It forms the sample frame for all of the CSO's business surveys and is updated on a continual basis. This register is developed and updated based on data from:

- The Revenue Commissioners
- The Company Registrations Office
- CSO's own data based on business survey returns

Revenue Commissioner Data Provided for the Central Business Register

Businesses register with the Revenue Commissioners for the relevant taxes. Most of these businesses will be either registered for self-assessed income tax or corporation tax (if incorporated). They then may be registered for other taxes depending on the

nature or size of the business: VAT if over the threshold(s), PREM⁸⁷ (for payments of PAYE, PRSI, USC, LPT) if they have employees, Excise (if involved in oil, tobacco or other excisable products), etc. The Revenue Commissioner provides the CSO with a copy of these registration files on a periodic basis (including any de-registrations).

A sole trader, regardless of size, should be registered for income tax. Self-assessed cases are required to file Form 11 returns annually with Revenue, providing a record of different incomes streams: trading income, investment income, rental income etc. CSO also receive periodic data dumps of these files.

Thus, the Revenue Commissioner data provided for the CSO Business Register includes data for: businesses that are VAT registered; businesses that register for tax: businesses that have employees; businesses that make corporate tax returns; and businesses that make self-assessment tax returns (individual business owners can be identified from the self-assessment tax form based on identification of trade or profession- which is distinct from property).

Thus, the Central Business Register captures also those individuals that may be below the VAT threshold, and that are not incorporated: for example a self-employed person with no employees and low turnover will be included in the Business Register through the self-assessment tax return.

Company Registration Office Data Provided for the Central Business Register

The Company Registration Office (CRO) is the statutory authority for registering new companies in the Republic of Ireland.⁸⁸ The Office also registers business names. Different types of businesses can be registered with the CRO. The CRO also provides data to the CSO for the Business Register based on the registration data that they collect.

⁸⁷ Data is collected by way of PREM- related to registering of employee for tax purposes by employer-and P35 files-P35forms are annual tax/PRSI returns for employees.

⁸⁸ A company registered under the Companies Act 2014 becomes a body corporate as and from the date mentioned in its certificate of incorporation. A company has separate legal personality - it is a separate and distinct legal person. Registration of a business name does not result in the creation of an entity with separate legal personality. The owner of the business name - the individual(s) or company which has/have registered the name is the person to be contacted or sued.

When you start a business you can do so either as a sole trader, partnership or limited company. You may carry on your business using your own name. If you wish to use a business name (trading name⁸⁹) you must register your business name with the Companies Registration Office.

Thus, a sole trader that registers a business name will be captured by the CRO, but sole traders that do not register a business name will not be captured by the CRO. However, such businesses will still be captured on the CSO Business register through the data provided to CSO (for sole-traders below the VAT threshold this is based on self-assessment tax returns provided by the Revenue Commissioner).

CSO Survey

Information received through CSO data is used to update the administrative data held in the Central Business Register.

Note: In contrast to the Irish Business Register maintained by the CSO, the UK Business Register (which is maintained by the ONS) is a database of all VAT and/or PAYE registered businesses only, i.e. it does not contain administrative data on businesses below the VAT/PAYE thresholds.

A second database is maintained in the UK - The Business Population Estimate. This database was first introduced in 2011 after a consultation phase on the methodological approach. This database includes VAT and/or PAYE registered businesses, plus an estimate of the non-employing micro businesses operating below the VAT/PAYE thresholds (also known as zero class businesses). These zero class businesses are identified based on combining information about people who report they are self-employed on the ONS Labour Force Survey and HM Revenue and Customs self-assessment tax returns data.

⁸⁹ A business name is a trading name which differs from the names of the persons or the company who own the business.

2. Business Demography

Business demography data is extracted from the CSO Central Business Register.

Business demography is reported based on the set of active enterprises: where active enterprises are those enterprises that meet one or more of the following criteria:

- They are VAT registered
- They have employees
- They make a corporate tax return
- Make an income tax return > €50 k

Limitation: Businesses that do not meet any of the above criteria are not included in the Business Demography statistics. So, for example a self-employed person with no employees and with a turnover of €35k/ year will be below the VAT threshold and will not have a corporate return and so will not be included in the Business Demography Data.

3. Census of Industrial Production (CIP)

The CIP is undertaken by the CSO. This data source provides details on Business Operations including employment, exports, turnover and earnings of businesses in Industry Sectors NACE Rev 2 05-39.

The CIP covers all enterprises which have three or more persons engaged and which are wholly or principally involved in industrial production. The CIP comprises of two related inquiries – local units⁹⁰ and enterprises⁹¹

i) the Census of Industrial Enterprises covers those enterprises which are wholly or primarily engaged in industrial production and have three or more persons engaged.

⁹⁰ A local unit is defined as an enterprise or part thereof situated in a geographically identified place: local units represent the set of establishments associated with enterprise: for example there may be one establishment associated with one enterprise, however an enterprise may have multiple establishments (plant, factory warehouse, office) at different locations.

⁹¹ An enterprise is defined as the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.

(ii) the Census of Industrial Local Units which covers all industrial local units with three or more persons engaged.

The Central Business Register is used as the total enterprise population from which the survey sample is selected. However, the survey is issued to business with 3 or more engaged: thus the survey does not capture economic data related to micro business < 3 persons.

Note: CIP data forms the input to the Structural Business Statistics reported by Eurostat

Note: In order to conform to Eurostat Regulations the CSO are currently engaged in a project to expand the coverage of the CIP to all enterprises with no limitation on the number of persons engaged (this includes zero persons engaged, i.e. the business exists but there is no person actively working in it).

Note: Administrative data is **NOT** used to estimate variables for firms < 3 persons engaged.

Limitation: The economic data reported does not include the contribution of micro firms with < 3 persons engaged.

4. **Annual Services Inquiry (ASI)**

The ASI is undertaken by the CSO. This data source provides details on Business Operations including employment, exports, turnover and earnings of businesses in Sectors covering NACE Rev 2 G,H,I,J,L,M,N, 92,93,95,96.

The ASI uses the CSO Central Business Register as the total population from which to select the firms to be surveyed

Data for enterprises with 1 person engaged in the ASI is obtained using administrative data sources: self-employed individuals with no employees, with turnover levels below the VAT threshold will be included in the data reported - based on administrative sources.

Note: ASI data forms the input to the Structural Business Statistics reported by Eurostat.

Note: In order to conform to Eurostat Regulations the CSO are currently engaged in a project to expand the coverage of the CIP to all enterprises with no limitation on the number of persons engaged (this includes zero persons engaged, i.e. the business exists but there is no person actively working in it).

5. Quarterly Household National Survey

This is a survey which is carried out by the CSO on a quarterly basis. The reference population is all individuals living in private households in Ireland.

The data collected provides details on employment and wages according to Industry Sector and occupation as it contains both NACE Rev 2 and SOC(2010) classifications.

Note: As this is a survey of households, self-employed individuals with no employees, with income levels below the VAT threshold will be included in the data collected and analysed.

Note: Freelancers are in general classified as self-employed. However, in situations where a freelancer works for a single employer and receives employment rights from that employer (e.g. holiday pay) he should be classified as an employee

6. Census 2011

The census figures relate to the de facto population, i.e. the population recorded for each area represents the total of all persons present within its boundaries on the night of Sunday, 10 April 2011, together with all persons who arrived in that area on the morning of Monday, 11 April 2011, not having been enumerated elsewhere.

The census collects data on employment according to occupation and industry sector (NACE Rev 2).

Note: As all individuals are included, so too are small turnover, sole-traders with turnover below the VAT threshold.

Note: Census 2011 data on occupations is provided based on SOC2010 occupation codes in CSO Table CD373 and Table CD374.

Note: Census 2011 data on occupations is also provided based on SOC(90) occupation codes in Tables CD360 and CD322 (so that it can complete a comparison with Census 2006 data).

7. Annual Business Survey of Economic Impact

The ABSEI Survey is undertaken by the Department of Jobs, Enterprise and Innovation (DJEI). This data source provides details of business operations such as employment, turnover and exports according to NACE Rev 2 classification.

The survey is focused on agency-client firms only and is only issued to firms with 10 or more persons engaged.

The survey is focused on firms across all NACE Rev 2 codes.

Note: There is no weighting applied to large firms in ABSEI.

Note: The NACE Rev 2 classification for the individual firms is confirmed by the DAs in the agencies. It is feasible that firms included under a specific NACE Rev 2 code as reported by ABSEI may be reported under a different NACE Rev 2 classification within CSO held data.

Limitation: The data reported does not include the contribution of micro firms with < 10 persons engaged.

Limitation: The data does not cover the full gamut of firms in Ireland, but just the agency client firms.

8. Community Innovation Survey

The Community Innovation Survey (CIS) is conducted by the CSO with the assistance of DJEI.

The sampling frame is the Central Business register, and the survey size is approximately 4,650 (with a response of 73.4% in 2013).

The CIS survey samples enterprises with ten or more persons engaged in the selected NACE Rev 2 categories, which are as follows:

B (05-09) Mining and quarrying

C (10-33) Manufacturing

D (35) Electricity, gas, steam and air conditioning supply

E (36-39) Water supply; sewerage, waste management and remediation activities

G (46) Wholesale trade, except of motor vehicles and motorcycles

H (49-53) Transportation and Storage

J (58,59,60,61,62,63) Information and communication

K (64-66) Financial and insurance activities

M (71-73) Architectural and engineering activities; technical testing and analysis; scientific research and development; advertising and market research

In the 2010 innovation survey, a question was included regarding employment of creative (including design) skills.

Note: The data for the Innovation statistics reported by Eurostat (which includes data for skills related to design in innovation) is provided from the CIS for Ireland.

Limitation: The data reported does not include the contribution of micro firms with < 10 persons engaged.

Limitation: NACE Rev 2: 74.1 and NACE Rev2: 95.24 are not included in survey.

9. Eurostat- for international comparison

The Data for the Structural Business Statistics reported by Eurostat- which includes the detailed annual enterprise statistics for industry and construction and for services – is provided from the CIP, ASI and the Census of Building and Construction for Ireland.

It is reported under the structural business statistics:

<http://ec.europa.eu/eurostat/web/structural-business-statistics/data/database>

There are 2 relevant sub databases- sbs industry and construction and sbs-services.

Table AP2 sets out a summary of the access routes to the data from the relevant data sources. It also summarises the coverage in relation to business size and the availability of data according to SOC and NACE 2.

Table AP3 reviews the data available by source for the preferred measurements for the study and indicates data limitations and caveats, as well as the availability of international comparator data for the preferred measurements.

Table AP2 Relevant Data Sources, Access and Coverage for estimating the economic contribution in Design

Relevant Data Sources	Access	Includes Multiple Person Businesses	Includes Single Person Businesses	SOC (2010) Coverage	NACE 2 Coverage
Census of Industrial Production -CSO	Provided by CSO or Eurostat Database-Structural Business Statistics-Industry	Yes > 3 persons engaged	No	No	4 digit and combined to higher level groupings
Annual Services Inquiry -CSO	Provided by CSO or Eurostat Database-Structural Business Statistics-Services	Yes	Yes	No	4 digit and combined to higher level groupings
Quarterly Household National Survey -CSO	Provided by CSO	Yes	Yes	Aggregated at Design Group Level	Yes: at 1 Digit Level when tabulated with SOC codes
Quarterly Household National Survey -CSO	EGFSN Skills Bulletin Reports	Yes	Yes	Combined codes in several cases , 3 digit level, some 4 digit	Yes: at 1 Digit Level when tabulated with SOC codes
Census 2011 -CSO	CSO Database- Statbank: Table CD373 Table CD374	Yes	Yes	Yes-detailed 4 digit	Yes: at 1 Digit Level when tabulated with SOC codes
ABSEI	Provided by DJEI	Yes > 10 persons engaged	No	No	Yes: 4 digit
Eurostat	Eurostat database-Structural Business Statistics	Yes- but would need to review each country to see the extent of the coverage in their national surveys- Eurostat Regulation is full coverage, but in Ireland we are only moving to that	Yes- but would need to review each country to see the extent of the coverage in their national surveys- Eurostat Regulation is full coverage, but in Ireland we are only moving to that	No	Yes: 4 digit
Community Innovation Survey- CSO-2010	CIS main Tables – Table CIS24, Table CIS25, Table CIS26	Yes > 10 persons engaged	No	No	Yes: 4 digit But 74.1 and 95.24 not included in survey
European Innovation Survey	Eurostat database:In-house and external skills available in the enterprises (inn_cis7_csk)	Yes- but would need to review each country to see the extent of the coverage in their national surveys	No	No	Yes: 4 digit But 74.1 and 95.24 not included in survey

Table AP3 Preferred measurements for the economic contribution of design in Ireland and the potential data sources, data limitations and data caveats.

		Primary Data Source	Measure	Data Access	Additional Analysis	Limitation	Caveats	International Comparison
Design Economy	Employment - Design Economy	QHNS	Employment in design occupations in Ireland	Direct provision from Central Statistics Office	Employment in design occupations according to NACE Categories: NACE digit 1	Data available only at Design Group level- due to confidentiality issues		UK-based on Data provided in UK Design Council Report 2015
		QHNS	Employment in design occupations in Ireland	Direct provision from Central Statistics Office	Type of Employment within design workforce: self-employed v employed	Data available only at combined Design Group level- due to confidentiality issues		
		QHNS	Employment in design occupations in Ireland	EGFSN Skills Bulletin (2012-2015)	Demographics of the design workforce: gender, age, qualification, nationality	Data available only at combined SOC levels	SOC 2126- provided as combined with 2127- overestimation Code 2431+2432 provided as combined SOC 2435 is provided as combined with a number of other occupations- including surveyors and construction project managers –not included in estimates. No individual SOCs for Architectural and town planning technicians (SOC 3121) and draughts persons (SOC 3122) - actually what is reported is other technicians n.e.c. - on review of the data reported, the technicians not explicitly reported are 3114 - building and civil engineering technicians+ 3119- science engineering and production technicians n.e.c and 3121+3122- architect and town planning technicians and draughts persons –we include this to cover SOC 3121 + 3122- but inclusion likely leads to an overestimation.	UK-based on Data provided in UK Design Council Report 2015
		Census 2011	Total Employment in design occupations in Ireland	CSO Statbank -Table CD374	Employment in design occupations according to NACE Categories: NACE digit 1	No SOC 3422 –Product clothing and related designers not available No SOC 3122- Draughts Persons not available SOC 2431 + SOC 3432 provided as combined		
		Census 2011	Total Employment in design occupations in Ireland	CSO Statbank -Table CD373	At work - employee (Number) Self-employed, with paid employees (Number) Self-employed, without paid employees (Number) At work - assisting relative (Number) By sex	No SOC 3422 –Product clothing and related designers not available No SOC 3122- Draughts Persons not available SOC 2431 + SOC 3432 provided as combined		
		Community Innovation Survey	Design Skills utilised in innovation active firms	CSO Statbank: Tables CIS 24, CIS 25, CIS 26	Access of Design skills: in-house vs external	2010 only question	NACE 2: 74.1 and 95.24 not included in survey	European comparison through the EIS: Accessed through Eurostat : inn_cis7_csk
		GVA- Design Economy	No GVA data per design occupations					

Table AP3 ctd.. Preferred measurements for the economic contribution of design in Ireland and the associated data sources, data limitations and data caveats.

		Primary Data Source	Measure	Data Access	Additional Analysis	Limitation	Caveats	International Comparison
Design Sectors	Employment – Design Sectors	Census of Industrial Production and Annual Services Inquiry - Central Statistics Office	Total Employment in Design Sectors	Eurostat Database- Structural Business Statistics-industry	Employment according to Design-Group level	1. For NACE 05-39- firms < 3 people not included 2. Confidentiality issues limit the availability of some Group level data and so a Total Employment estimate for Design Sectors cannot be estimated.		1. European comparators: Eurostat database-Structural Business Statistics. 2. UK Design Council Report 2015
	GVA:Design Sectors+B23	Census of Industrial Production and Annual Services Inquiry - Central Statistics Office	Total GVA in Design Sectors	Eurostat Database- Structural Business Statistics-industry	GVA according to Design-Group level	1. For NACE 05-39- firms < 3 people not included 2. Confidentiality issues limit the availability of some Group level data and so a Total Employment estimate for Design Sectors cannot be estimated.		1. European comparators: Eurostat database-Structural Business Statistics. 2. UK Design Council Report 2015
		ABSEI	GVA in agency assisted firms in Design Sectors+D24	DJEI - ABSEI Survey	GVA according to Design-Group level	1. For firms >10 persons engaged. 2. Survey limited to agency-assisted firms: accounts for ~40% of total GNP in economy in 2013.		UK Design Council Report 2015
	Productivity:Design Sectors	Census of Industrial Production and Annual Services Inquiry - Central Statistics Office	Productivity in Design Sectors	Eurostat Database- Structural Business Statistics-industry	Productivity according to Design-Group level	1. For NACE 05-39- firms < 3 people not included 2. Confidentiality issues limit the availability of an average productivity estimate for Design Sectors.		1. European comparators: Eurostat database-Structural Business Statistics. 2. UK Design Council Report 2015
	Exports:Design Sectors+B10	ABSEI	Exports from agency assisted firms in Design Sectors	DJEI - ABSEI Survey	Exports according to Design-Group level	1. For firms >10 persons engaged. 2. Survey limited to agency-assisted firms:accounts for ~80% of exports.		UK Design Council Report 2015
	Number of Enterprises	Census of Industrial Production and Annual Services Inquiry - Central Statistics Office	Number of Enterprises in Design Sectors	Eurostat Database- Structural Business Statistics-industry	Number of enterprises according to Design-Group level	1. For NACE 05-39- firms < 3 people not included 2. Confidentiality issues limit the availability of a Total enterprises estimate for Design Sectors		1. European comparators: Eurostat database-Structural Business Statistics. 2. UK Design Council Report 2015

Appendix 3

Appendix 3: Details of measures that can and cannot be reported

Details of what we **can report** on with regard to the economic contribution (and supporting descriptive measures) of design in Ireland is set out below.

Based on Design Occupations:

- Number employed in design occupations: total and disaggregated by Design Group level.
- Numbers of designers employed in the various business sectors (NACE Rev 2 Category level).
- Ratio of self-employed designers to design employees: some disaggregation at Design Group level.
- Demographics of design workforce: age, gender, qualifications and nationality– by SOC (2010) code and Design Group (with some caveats due to rolling of subgroups).
- Utilisation of design-related skills by **innovative** firms: in-house employment vs accessing skills externally.

Coverage limited to firms with 10 or more persons engaged for enterprises in NACE Rev 2 05-39 (not 74.1).

- International comparison

It is noted that due to the availability of data over a series of time, the QHNS data was selected as the preferred data source for measurement over the Census 2011 data.

It is also noted that the data reported in the QHNS includes all employment by designers- regardless of whether they are an employee, employer, freelancer etc.

Based on Design Sectors

- Employment in Design Sectors for Design Groups 1,2,3 (Engineering, Architecture and Specialised Design), (no data for Group 4,5,6 - Digital Design, Advertising and Craft Groups): *Coverage limited to firms with > 3 persons engaged for enterprises in NACE Rev 2 05-39 (coverage not limited for other NACE 2 sectors).*

- GVA in Design Intensive Industries for Design Groups 1,2,3 (Engineering, Architecture and Specialised Design) (no data for Group 4,5,6- Digital Design, Advertising and Craft Groups): *Coverage limited to firms with > 3 persons engaged for enterprises in NACE Rev 2 05-39 (coverage not limited for other NACE 2 sectors).*
- International Comparison of GVA and employment for Design Groups 1,2,3 (Engineering, Architecture and Specialised Design).
 - Export in Design Intensive industries for all Design Groups: *Coverage limited to firms with 10 or more persons engaged. Data Source relates only to ~80% of total exports and to exports by agency client firms.*

In summary, what we can **NOT** currently report on with regard to the economic contribution (and supporting descriptive measures) of design in Ireland is:

- Total employment in the Design Economy:
- Total GVA of the Design Economy
- Total Employment of the Design Sectors
- Total GVA in the of the Design Sectors
- Total Exports of the Design Sectors

Appendix 4

Appendix 4: Demographics of the Design Workforce

Table AP4 Demographics of Design Workforce in 2014

		% Female	% Part-Time	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2009-2014 (%)	New Employment Permits Issued, 2014 (Number)	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator
Design-Engineering	Production, process, design& development engineers (SOC 2126+2127)	15.90%	0.00%	1.50%	24.60%	96.10%	9.20%	66	A.A.	0.30%	15.40%	Skill Shortage
Design-Architecture	Architects & town planners (SOC 2431+2432)	32.50%	9.50%	1.70%	18.90%	96.30%	-8.40%	0	B.A.	16.00%	15.80%	No Shortage
	Architectural and Town Planning Technicians and Draughts Persons (SOC 3121+3122)- actually what is reported is other technicians n.e.c. On review of the data reported, the technicians not explicitly reported are SOC 3114 - Building and Civil Engineering Technicians and SOC 3119- Science Engineering and Production Technicians n.e.c and SOC 3121+3122- Architect and Town Planning Technicians and Draughts Persons	20.50%	9.70%	14.20%	0.90%	68.10%	1.90%	45	A.A.	10.00%	7.40%	No Shortage
Design-Specialised Design	Design Occupations (SOC 3421+3422)	47.80%	20.10%	10.60%	16.50%	80.70%	1.00%	7	B.A.	10.10%	6.60%	No Shortage
Design-Digital	IT business analysts and and systems designers (SOC 2135)	19.20%	4.90%	7.30%	18.30%	82.00%	1.80%	379	A.A.	3.00%	15.00%	Skills Shortage
	Programmers and Software Developers (SOC 2136)	23.00%	3.00%	2.30%	30.70%	92.70%	8.00%	733	A.A.	6.20%	13.70%	Skills Shortage
	Web Design and Developers (SOC 2137)	32.80%	12.60%	0.00%	14.00%	52.90%	2.60%	48	A.A.	24.80%	24.20%	Skills Shortage
Design-Advertising	Media professionals- includes Advertising Accounts Managers and Creative Directors- SOC 2473, but also Public Relations Professions and Journalists - SOC 2471+2472	43.60%	21.80%	14.90%	8.80%	82.00%	-3.50%	10	A.A.	3.70%	9.10%	No Shortage
Design-CRAFT	Smiths, and Forge Workers (SOC 5211)	0.00%	5.70%	11.70%	17.40%	11.90%	-0.50%	1	A.A.	9.80%	13.70%	Skill Shortage
	Skilled Trades (Furniture Makers, Glass Products, Other Skilled Trades n.e.c.) (SOC 5441+5442+5449 + Florists)	42.10%	20.40%	19.40%	31.20%	31.30%	-1.10%	2	B.A.	13.40%	10.70%	No Shortage
	Print Finishing and Binding Works (5421+5422+5423)	2.80%	2.70%	8.40%	16.40%	27.60%	-6.80%	0	B.A.	5.50%	0.00%	No Shortage

Source: QHNS data extracted from National Skills Bulletin 2015

Data Caveats: Design and Development Engineers is reported combined with production and process engineers; Extra SOC codes (3114 and 3119) are included in the Architecture Group, and SOC 2435 (Chartered Architectural Technologists) is missing; the Advertising Group includes extra SOC codes (2471+2472); in the CRAFT Group, extra SOC codes are include in print finishing (5421, 5422) and data for SOC 5411,5413, 5414,5419,5224 and 8137 is not available.

Table AP5 Demographics of Design Workforce in 2013: the same data caveats apply as for 2014

		% Female	% Part-Time	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2008-2013 (%)	New Employment Permits Issued, 2013 (Number)	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator
Design-Engineering	Production, process, design& development engineers (SOC 2126+2127)	6.70%	2.80%	1.50%	16.90%	94.20%	6.80%	61	A.A			Skill Shortage
Design-Architecture	Architects & town planners (SOC 2431+2432)	30.40%	9.80%	13.50%	10.50%	97.50%	-12.30%	3	B.A			No Shortage
	Architectural and Town Planning Technicians and Draughts Persons (SOC 3121+3122)- actually what is reported is other technicians n.e.c.. On review of the data reported, the technicians not explicitly reported are SOC 3114 - Building and Civil Engineering Technicians and SOC 3119- Science Engineering and Production Technicians n.e.c and SOC 3121+3122- Architect and Town Planning Technicians and Draughts Persons	19.40%	7.50%	15.10%	3.00%	73.50%	-1.20%	15	A.A			
Design-Specialised Design	Design Occupations (SOC 3421+3422)	58.80%	22.70%	5.10%	30.20%	86.30%	-3.30%	5	B.A		16.00%	No Shortage
Design-Digital	IT business analysts and and systems designers (SOC 2135)	30.20%	7.90%	2.80%	19.60%	87.30%	2.30%	356	A.A.			Skill Shortage
	Programmers and Software Developers (SOC 2136)	17.30%	5.20%	2.10%	34.70%	93.70%	7.70%	633	A.A.		9.00%	Skill Shortage
	Web Design and Developers (SOC 2137)	20.00%	11.60%	0.00%	23.30%	71.90%	-1.60%	18	A.A.			Skill Shortage
Design-Advertising	Media professionals- includes Advertising Accounts Managers and Creative Directors- SOC 2473, but also Public Relations Professions and Journalists - SOC 2471+2472	62.50%	14.80%	13.00%	7.60%	91.40%	-9.80%	7	A.A			No Shortage
Design-CRAFT	Smiths, and Forge Workers (SOC 5211)	0.00%	11.10%	12.60%	16.10%	12.60%	-8.50%	0	A.A.			Skills Shortage
	Skilled Trades (Furniture Makers, Glass Products., Other Skilled Trades n.e.c.) (SOC 5441+5442+5449 + Florists)	29.60%	33.70%	22.70%	21.90%	22.60%	-10.10%	1	B.A.			No Shortage
	Print Finishing and Binding Works (5421+5422+5423)	8.60%	9.30%	22.70%	15.00%	21.20%	-5.90%	2	B.A.			No Shortage

Table AP6 Demographics of Design Workforce in 2012: the same data caveats apply as for 2014

		% Female	% Part-Time	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2007-2012 (%)	New Employment Permits Issued, 2012 (Number)	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator
Design-Engineering	Production, process, design& development engineers (SOC 2126+2127)	12.90%	2.20%	14.70%	17.70%	86.50%	7.00%	41				Skills Shortage
Design-Architecture	Architects & town planners (SOC 2431+2432)	42.10%	24.50%	14.90%	10.30%	100.00%	-8.10%	6				No Shortage
	Architectural and Town Planning Technicians and Draughts Persons (SOC 3121+3122)- actually what is reported is other technicians n.e.c.. On review of the data reported, the technicians not explicitly reported are SOC 3114 - Building and Civil Engineering Technicians and SOC 3119- Science Engineering and Production Technicians n.e.c and SOC 3121+3122- Architect and Town Planning Technicians and Draughts Persons	13.00%	3.00%	12.80%	5.70%	81.90%	-1.50%	16				
Design-Specialised Design	Design Occupations (SOC 3421+3422)	54.70%	16.60%	10.30%	20.20%	88.50%	-6.10%	3				No Shortage
Design-Digital	IT business analysts and and systems designers (SOC 2135)	27.00%	8.90%	10.30%	12.20%	81.80%	-2.20%	250				Skills Shortage
	Programmers and Software Developers (SOC 2136)	21.20%	4.20%	1.10%	27.20%	95.00%	9.20%	548				Skills Shortage
	Web Design and Developers (SOC 2137)	31.80%	12.10%	0.00%	16.50%	89.90%	-0.90%	12				Skills Shortage
Design-Advertising	Media professionals- includes Advertising Accounts Managers and Creative Directors- SOC 2473, but also Public Relations Professions and Journalists - SOC 2471+2472	41.00%	19.60%	11.50%	7.30%	86.50%	-11.80%	5				No Shortage
Design-CRAFT	Smiths, and Forge Workers (SOC 5211)	1.70%	8.10%	10.50%	21.60%	9.70%	-9.50%	0				No Shortage
	Skilled Trades (Furniture Makers, Glass Products, Other Skilled Trades n.e.c.) (SOC 5441+5442+5449 + Florists)	38.20%	30.70%	20.00%	21.30%	23.80%	-8.10%	2				No Shortage
	Print Finishing and Binding Works (5421+5422+5423)	16.60%	6.70%	19.60%	6.60%	11.20%	-4.60%	2				No Shortage

Table AP7 Demographics of Design Workforce in 2011: the same data caveats apply as for 2014

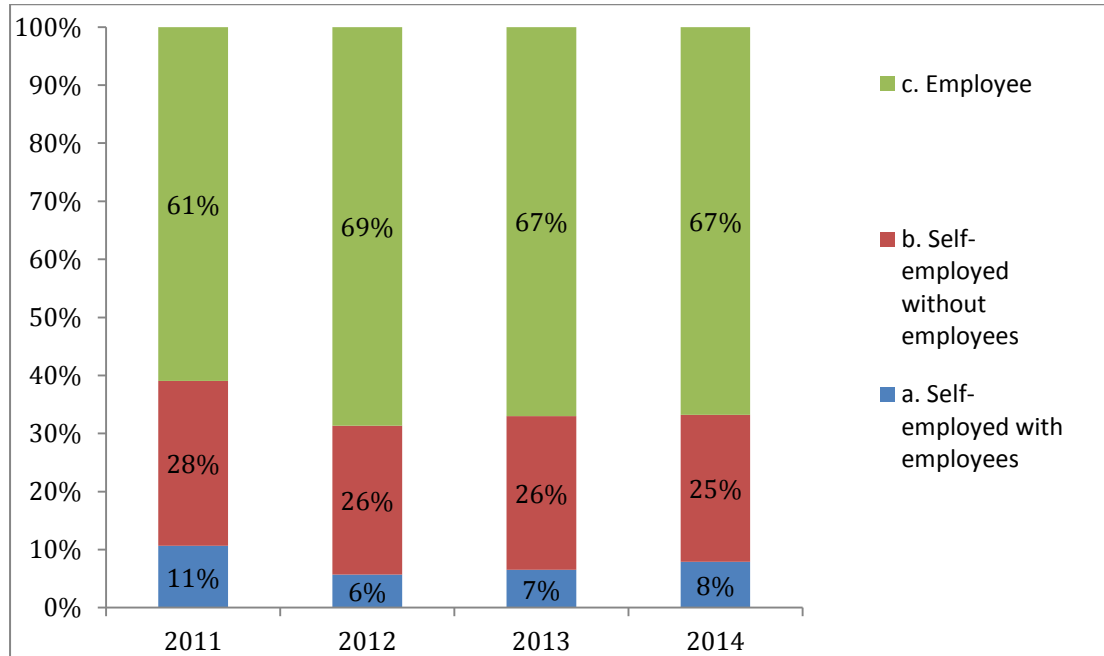
		% Female	% Part-Time	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2007-2012 (%)	New Employment Permits Issued, 2012 (Number)	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator
Design-Engineering	Production, process, design & development engineers (SOC 2126+2127)	16.40%	0.00%	3.50%	4.40%	91.10%	7.60%	39		2.80%		Skills Shortage
Design-Architecture	Architects & town planners (SOC 2431)- No data available for SOC 2432	43.70%	26.40%	22.50%	9.10%	97.20%	-15.20%	1		2.80%		No Shortage
	Architectural and Town Planning Technicians and Draughts Persons (SOC 3121+3122)- actually what is reported is other technicians n.e.c.. On review of the data reported, the technicians not explicitly reported are SOC 3114 - Building and Civil Engineering Technicians and SOC 3119- Science Engineering and Production Technicians n.e.c and SOC 3121+3122- Architect and Town Planning Technicians and Draughts Persons	11.40%	13.60%	16.20%	10.20%	79.50%	-1.80%	6		2.60%		Skills Shortage- niche area
Design-Specialised Design	Design Occupations (SOC 3421+3422)	55.10%	23.60%	11.30%	13.90%	72.60%	-7.00%	5		2.60%		No Shortage
Design-Digital	IT business analysts and systems designers (SOC 2135)	30.90%	6.50%	0.00%	19.90%	90.90%	-4.30%	176		2.80%		Skills Shortage
	Programmers and Software Developers (SOC 2136)	20.60%	5.30%	2.90%	18.80%	93.30%	7.50%	452		2.80%		Skills Shortage
	Web Design and Developers (SOC 2137)	56.60%	16.50%	0.00%	8.50%	72.00%	3.90%	18		2.80%		Skills Shortage
Design-Advertising	Media professionals- includes Advertising Accounts Managers and Creative Directors - SOC 2473, but also Public Relations Professions and Journalists - SOC 2471+2472	37.70%	16.90%	11.10%	6.90%	88.20%	-9.70%	3		2.80%		No Shortage
Design-CRAFT	Smiths, and Forge Workers (SOC 5211)	7.80%	25.00%	24.40%	10.90%	28.40%	-4.60%	2		3.10%		No Shortage
	Skilled Trades (Furniture Makers, Glass Products., Other Skilled Trades n.e.c.) (SOC 5441+5442+5449 + Florists)	26.10%	20.30%	18.70%	14.80%	30.10%	-10.10%	11		2.70%		No Shortage
	Print Finishing and Binding Works (5421+5422+5423)	16.80%	8.60%	15.70%	16.40%	17.40%	-13.10%	1				No Shortage

Extra caveat around architectures- only SOC 2431

Appendix 5

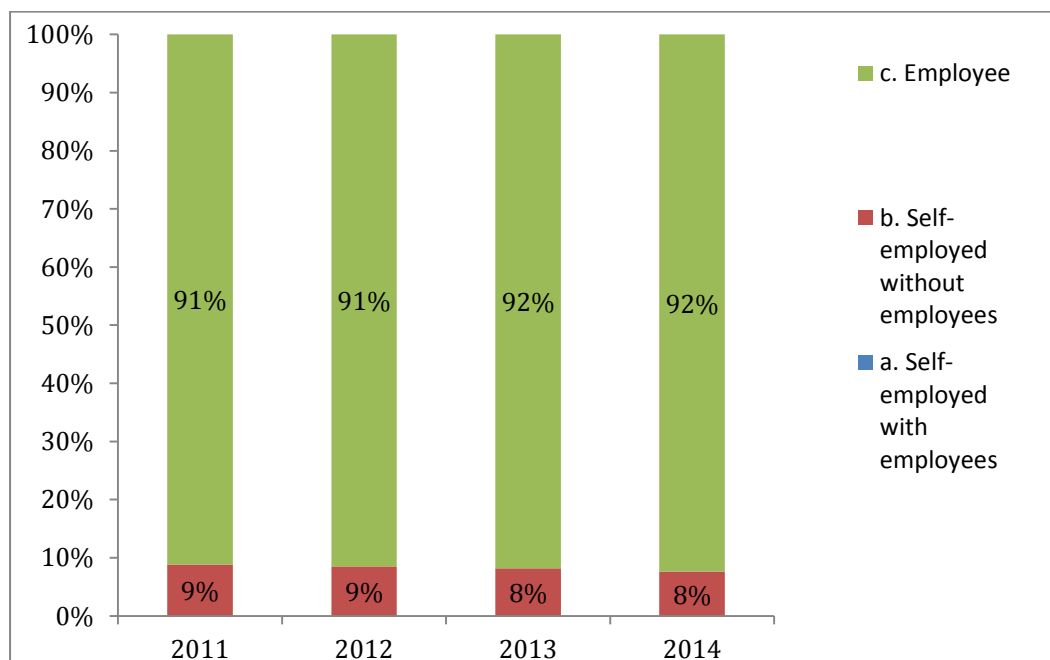
Appendix 5: Employment status in design occupations

Figure AP1 The proportion of employment according to (a) self-employed with employees, (b) self-employed without employees and (c) employees based on employment in Design Groups: Engineering, Architecture, Specialised Design and Advertising 5, for the years 2011-2014.



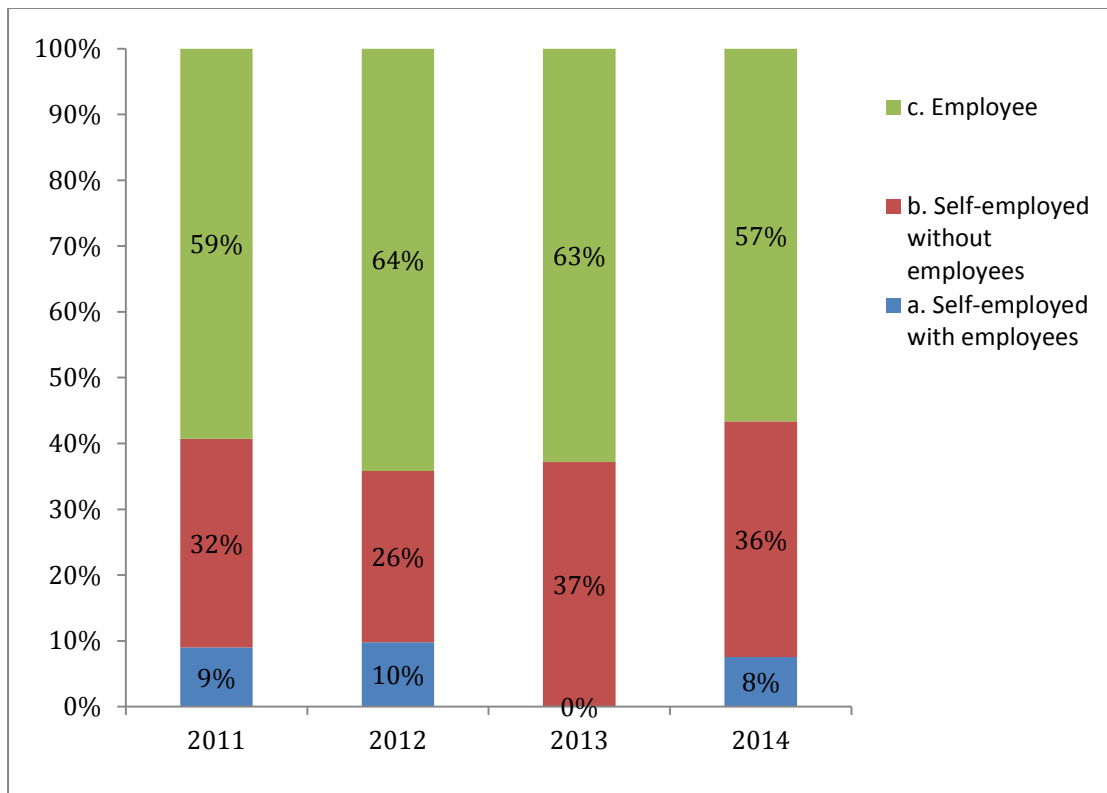
Source: QHNS, CSO

Figure AP2 The proportion of employment according to (a) self-employed with employees, (b) self-employed without employees and (c) employees based on employment in the Digital Group for the years 2011-2014.



Source: QHNS, CSO

Figure AP3 The proportion of employment according to (a) self-employed with employees, (b) self-employed without employees and (c) employees based on employment in the Craft Group for the years 2011-2014.

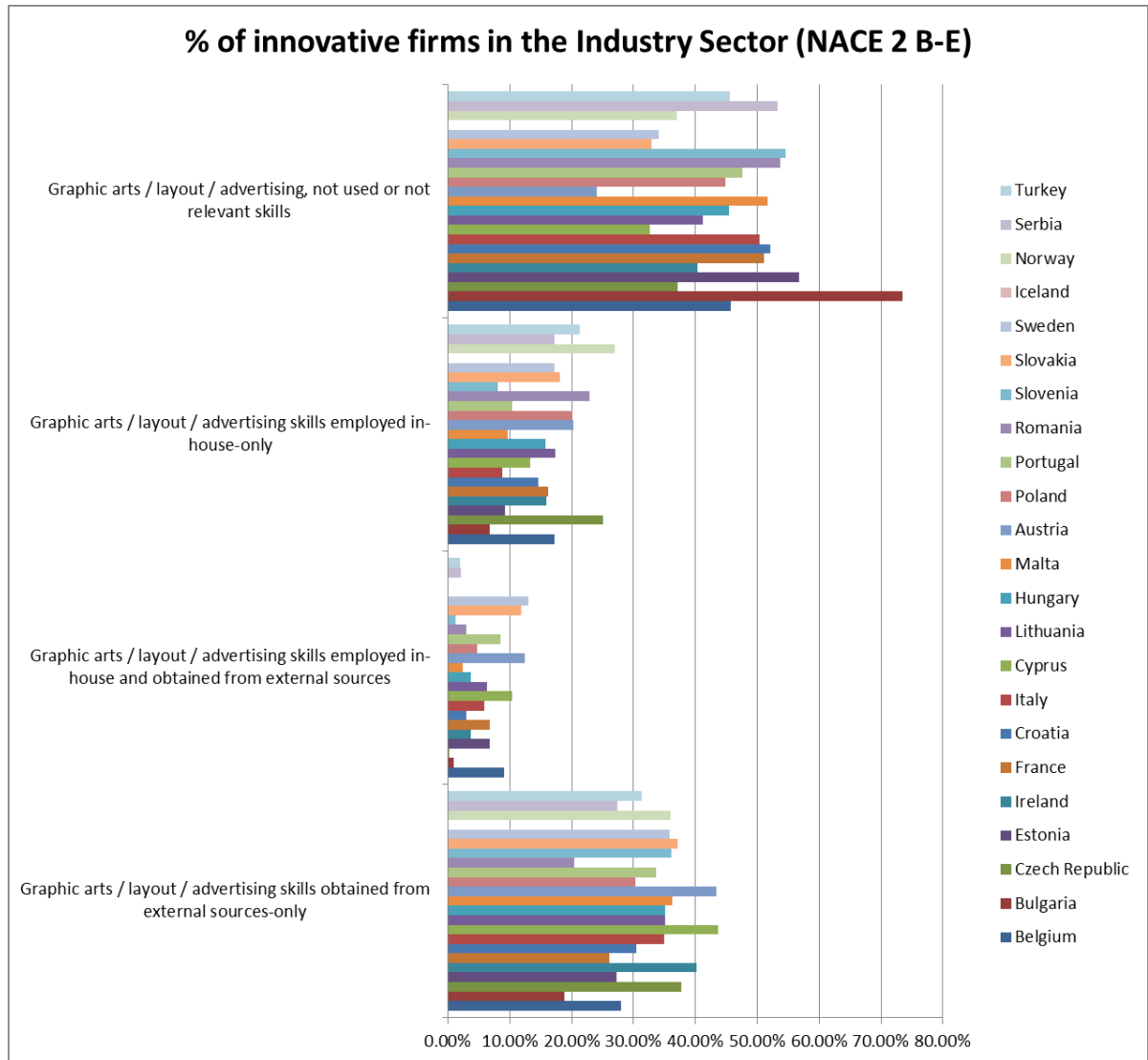


Source: QHNS, CSO

Appendix 6

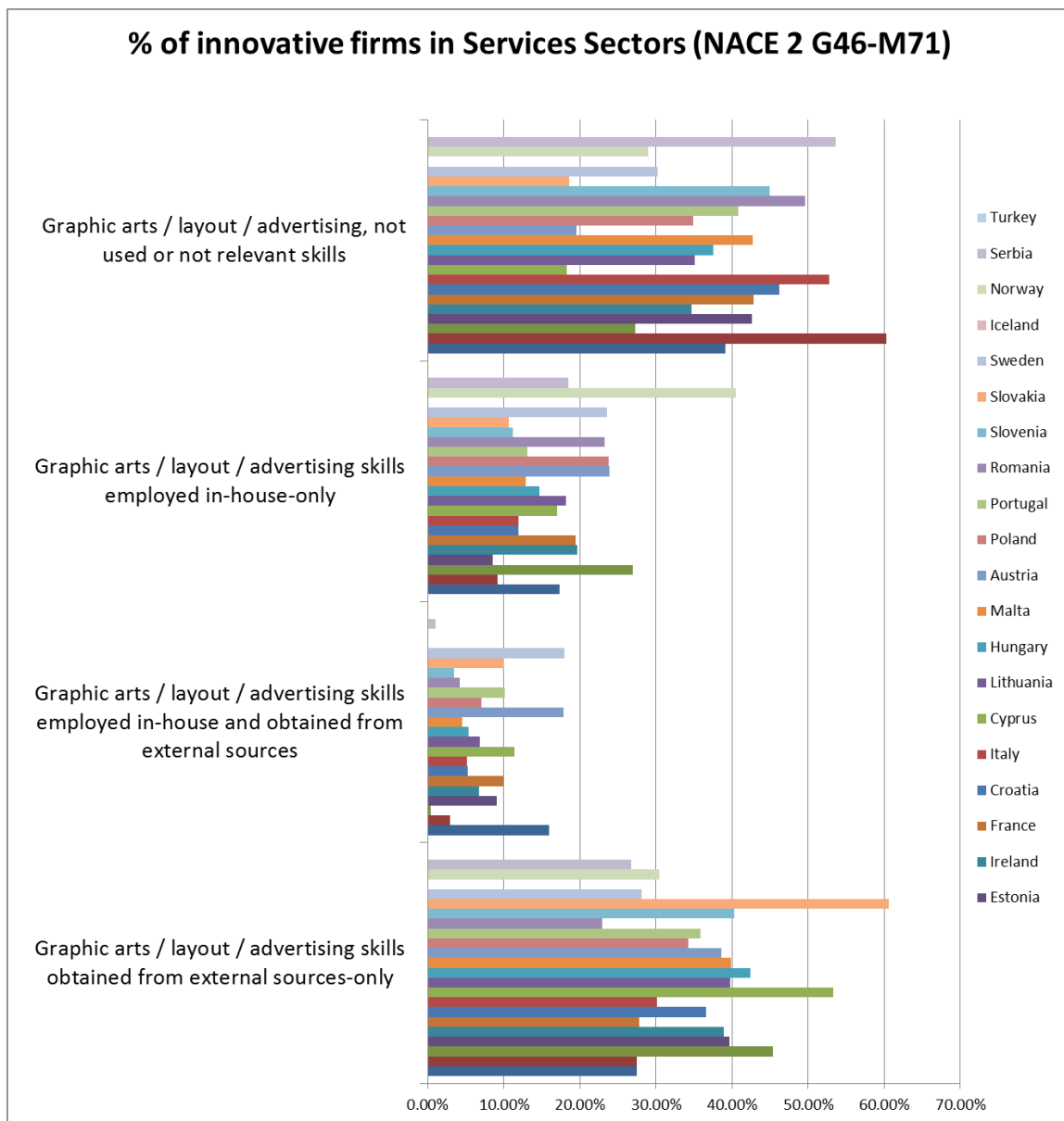
**Appendix 6: Utilisation of Design Skills -
A cross-country comparison**

Figure AP4 Proportion of innovative firms in the Industry Sectors (NACE Rev 2 B-E) utilising Graphic arts/layout/advertising skills in 2010.



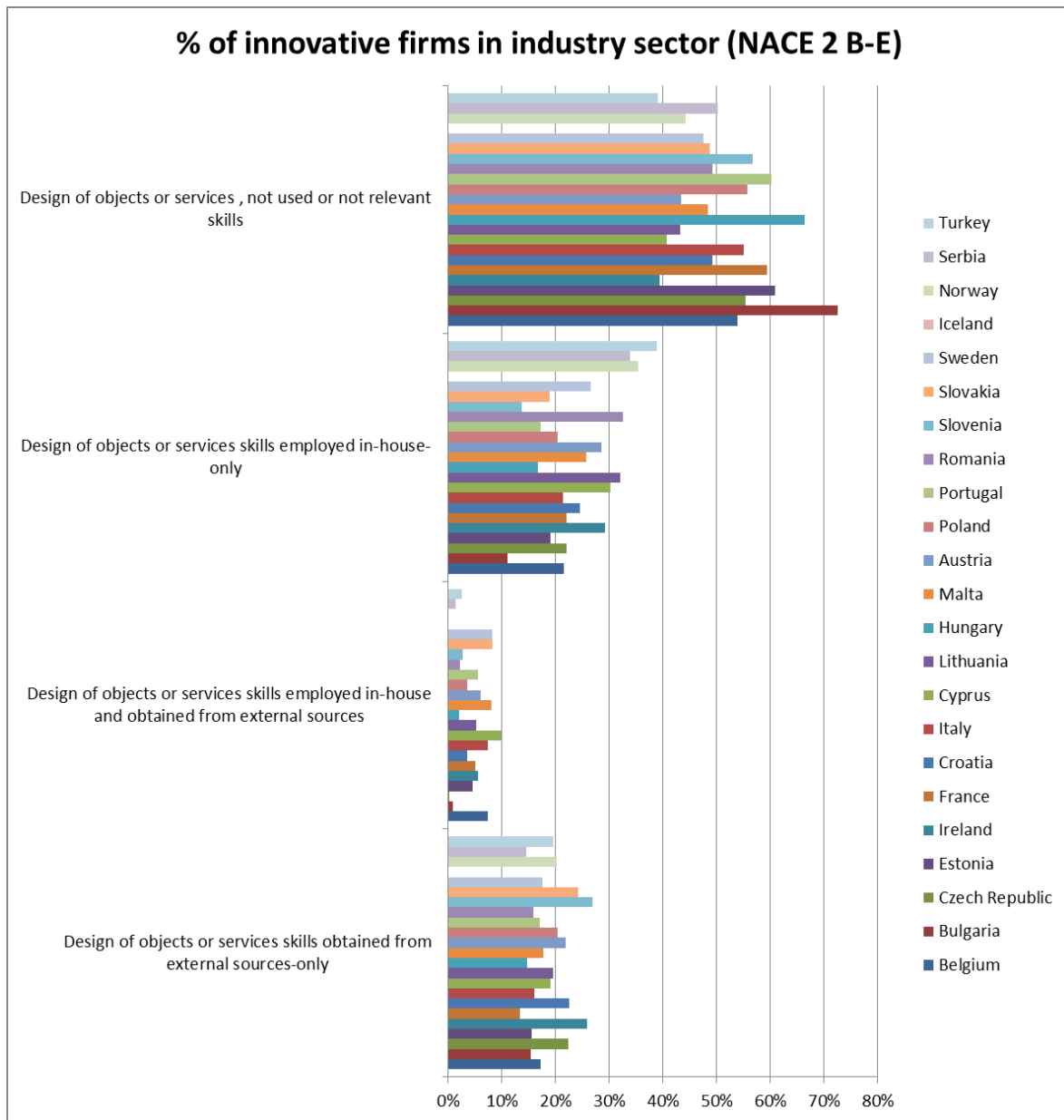
Source: Eurostat, CIS, 2010

Figure AP5 Proportion of innovative firms in the Services Sector (NACE Rev 2 G46-M71) utilising Graphic arts/layout/advertising skills in 2010.



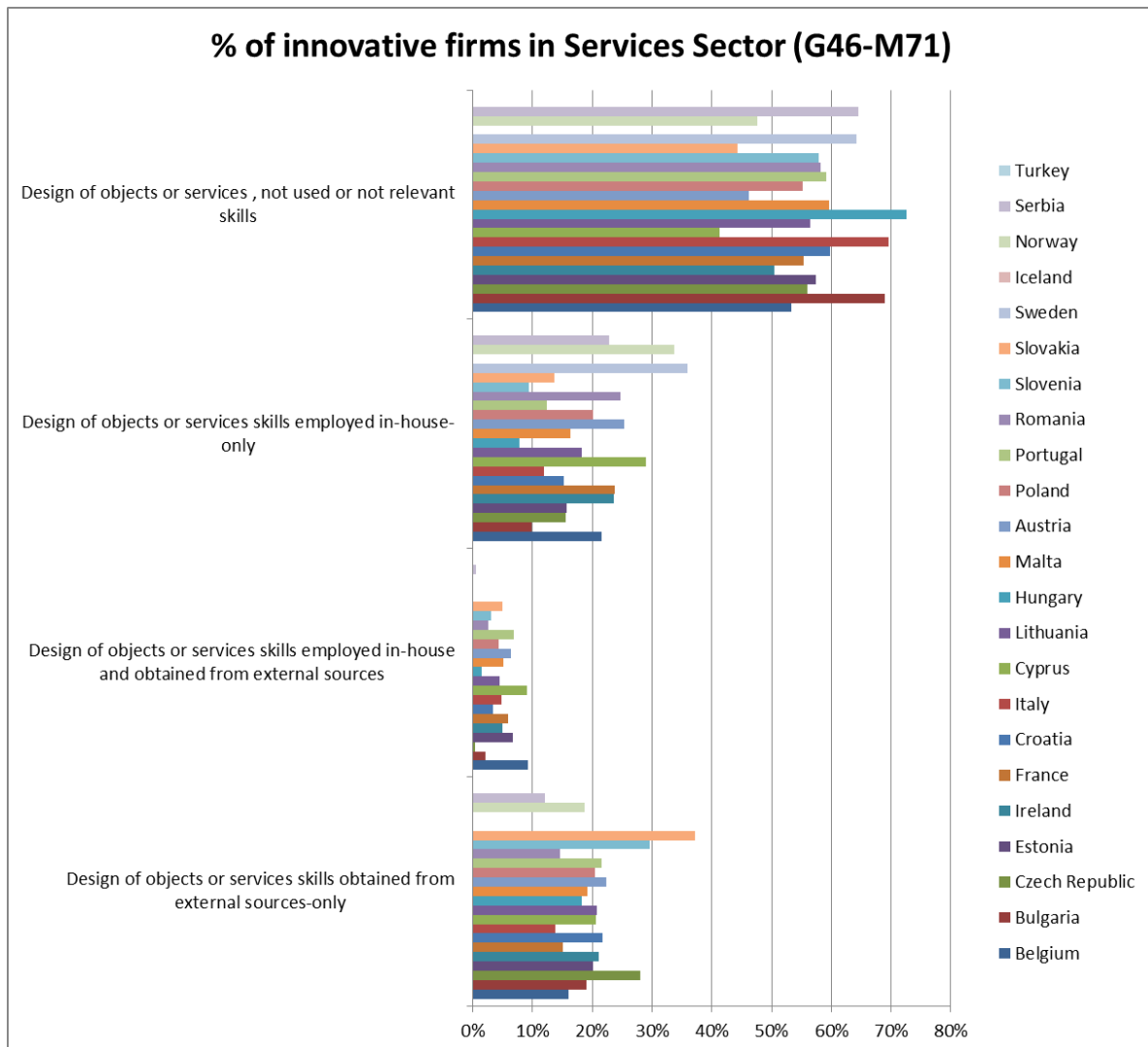
Source: Eurostat, CIS, 2010

Figure AP6 Proportion of innovative firms in the Industry Sectors (NACE Rev 2 B-E) utilising design of objects or services skills in 2010.



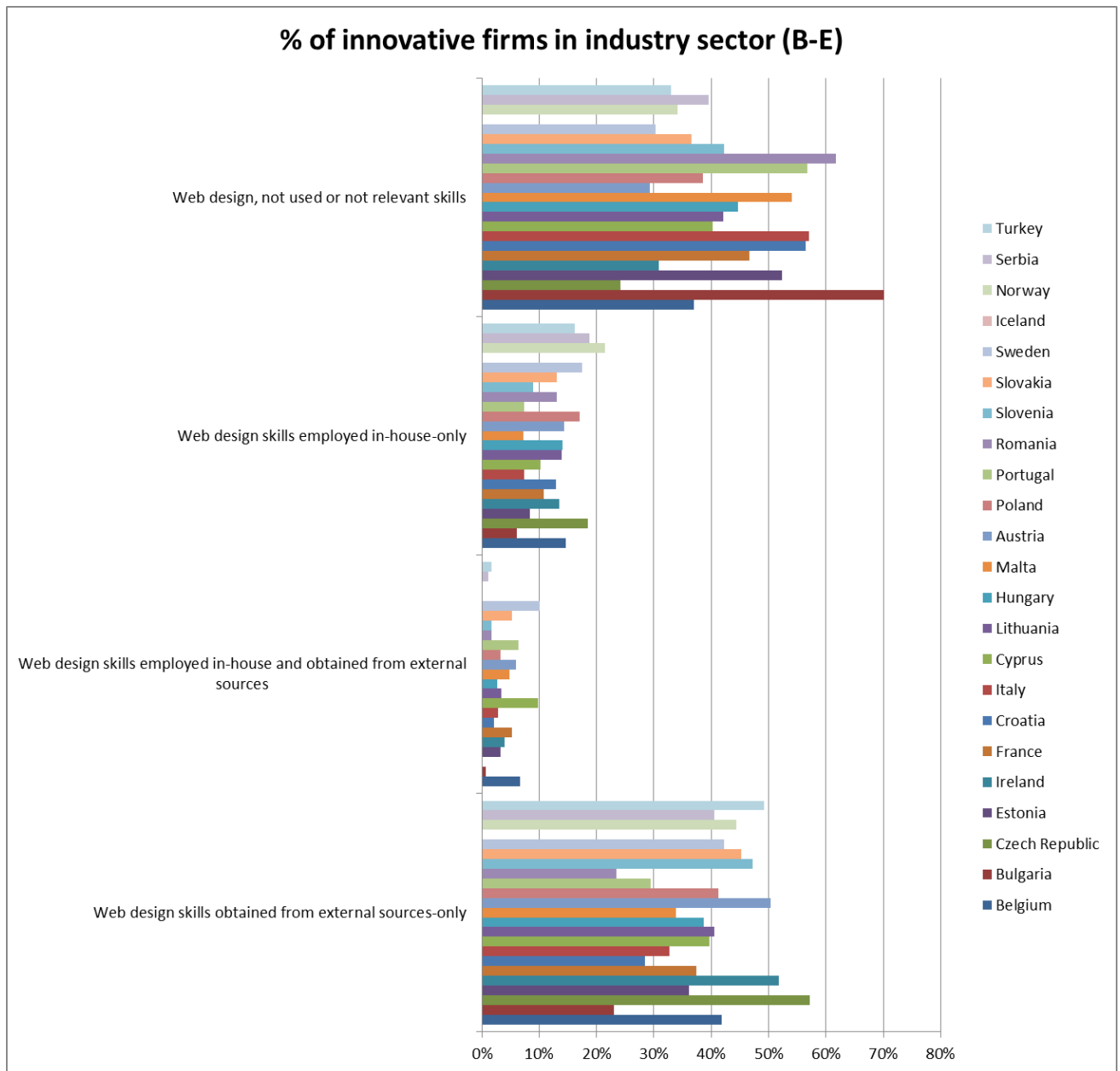
Source: Eurostat, CIS, 2010

Figure AP7 Proportion of innovative firms in the Services Sector (NACE Rev 2 G46-M71) utilising design of objects or services skills in 2010.



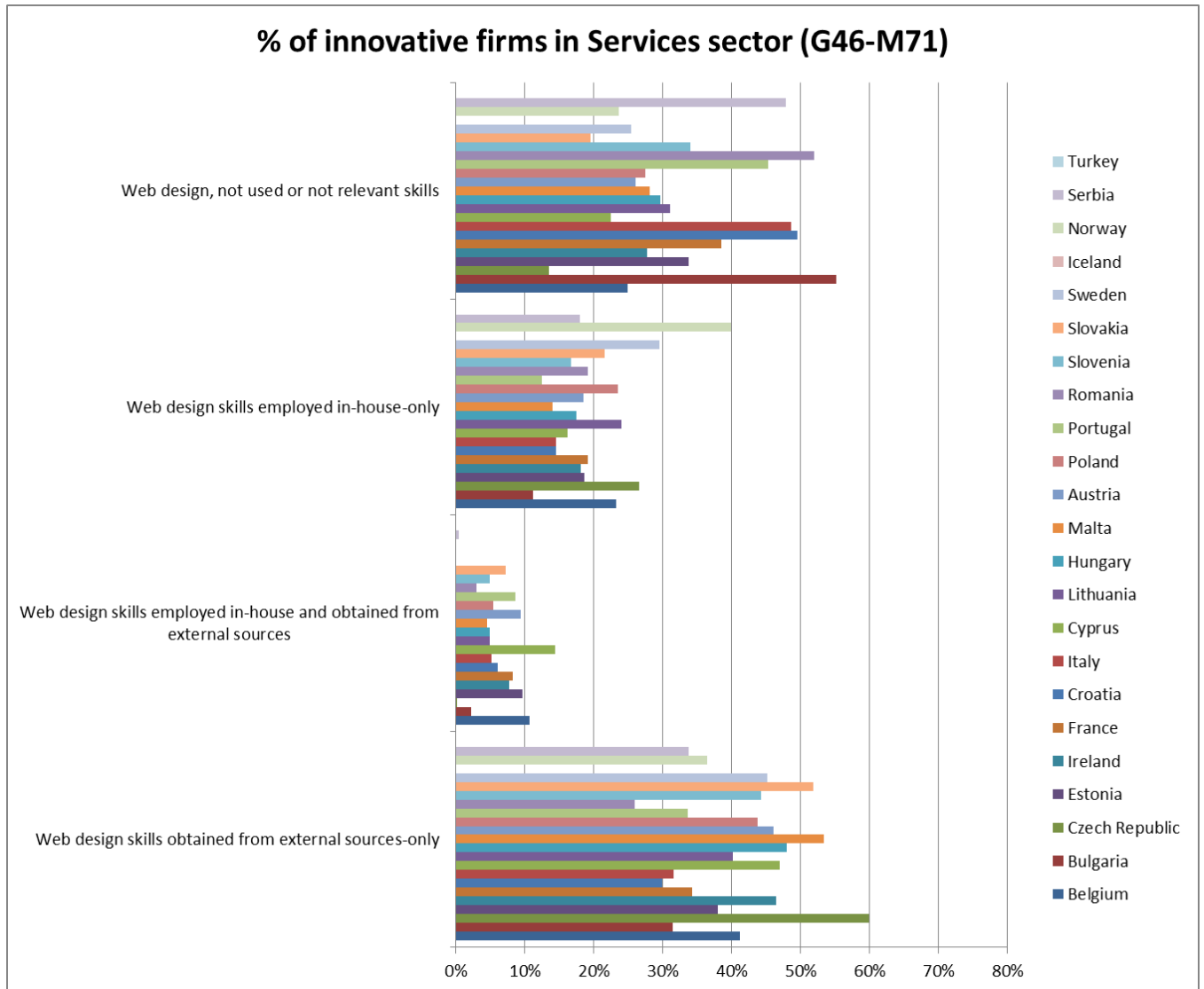
Source: Eurostat, CIS, 2010

Figure AP8 Proportion of innovative firms in the Industry Sector (NACE Rev 2 B-E) utilising web design skills in 2010.



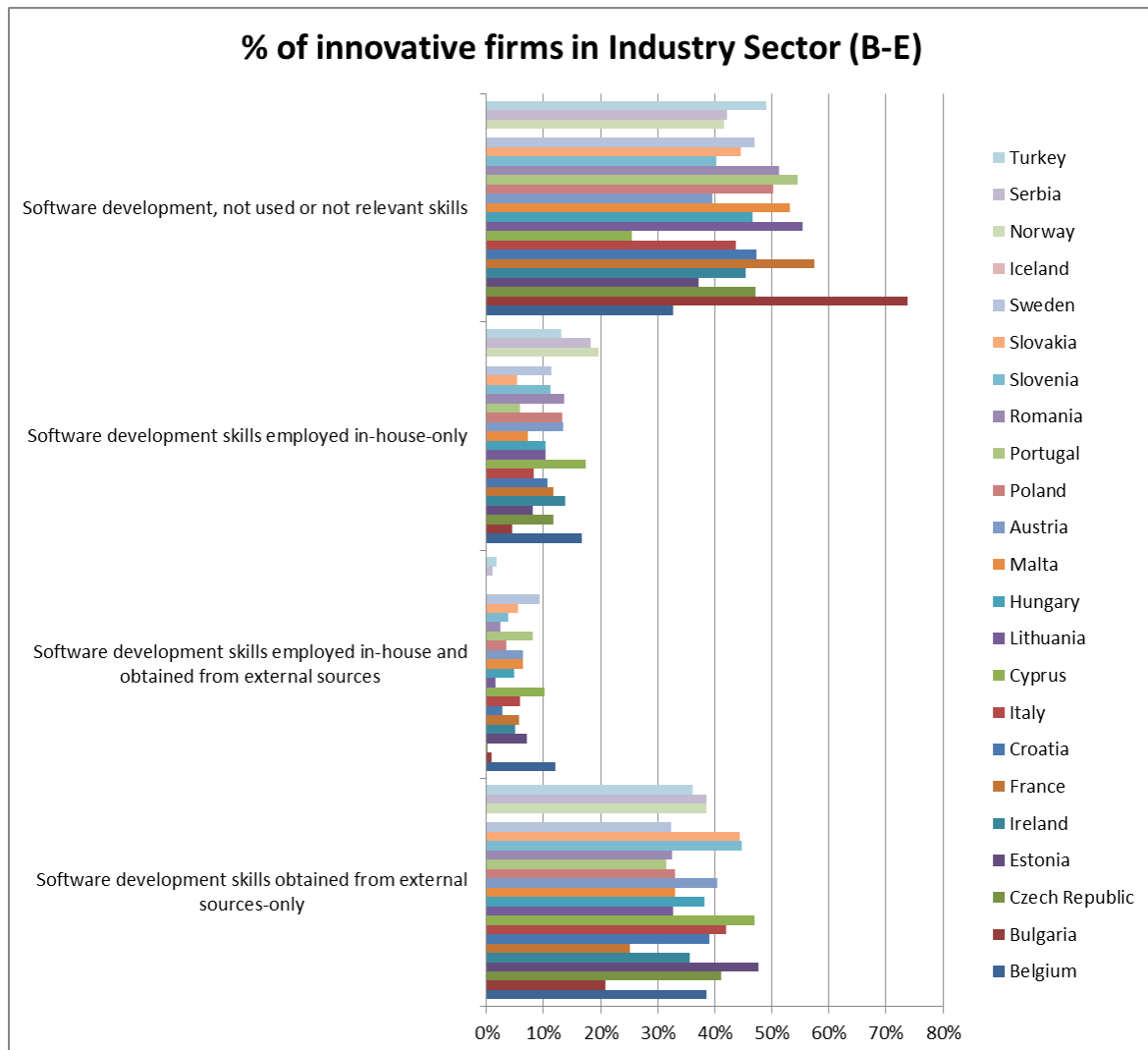
Source: Eurostat, CIS, 2010

Figure AP9 Proportion of innovative firms in the Services Sector (NACE Rev 2 G46-M71) utilising web design skills in 2010.



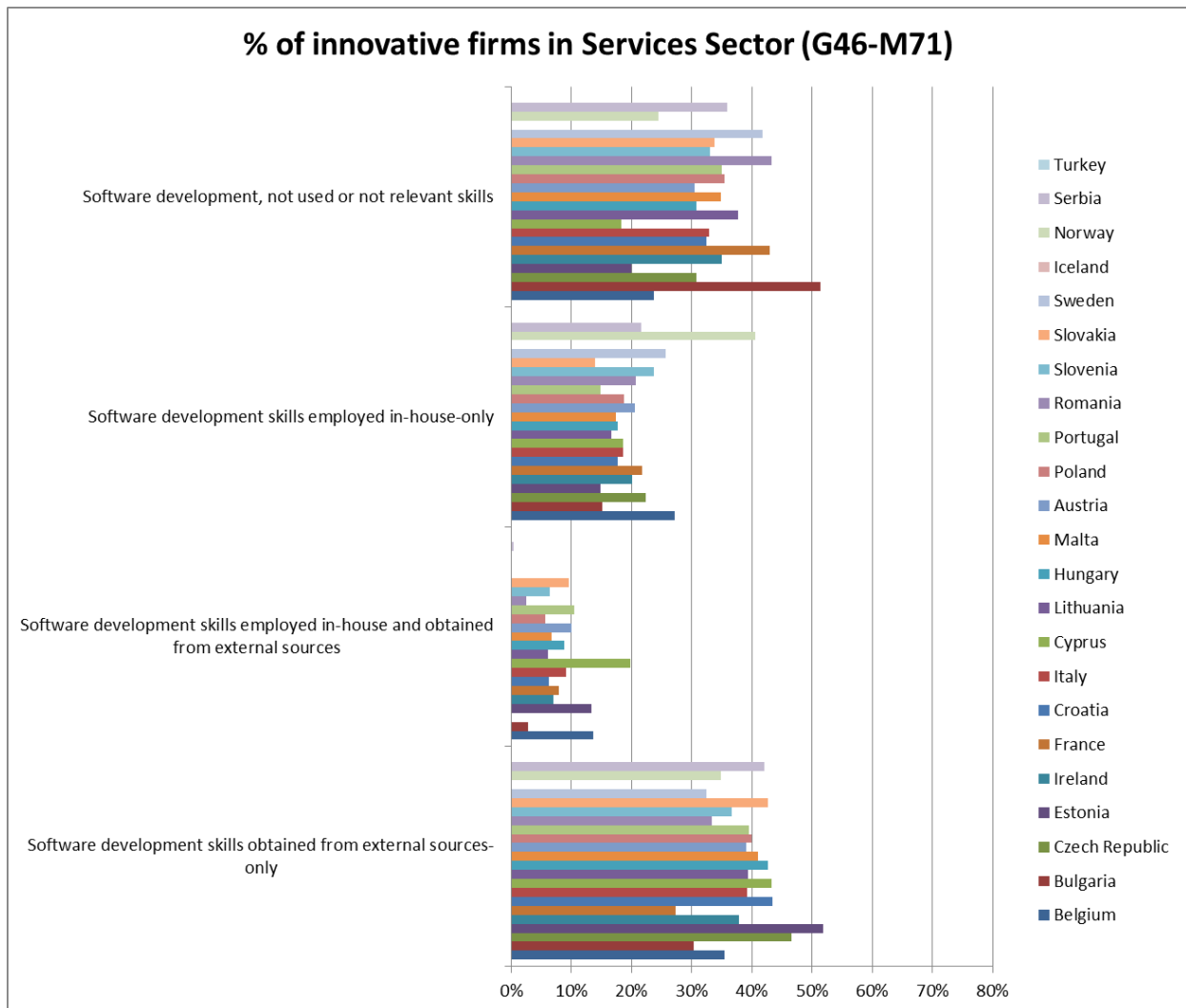
Source: Eurostat, CIS, 2010

Figure AP8 Proportion of innovative firms in the Industry Sector (NACE Rev 2 B-E) utilising software development skills in 2010.



Source: Eurostat, CIS, 2010

Figure AP11 Proportion of innovative firms in the Services Sector (NACE Rev 2 G46-M71) utilising software development skills in 2010.



Source: Eurostat, CIS, 2010