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Using Business Registers to conduct a regional analysis of Enterprise Demography and Employment in the Tourism Industries: Learning from the Irish Experience

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Abstract:

Business registers are the foundation upon which all business statistics are compiled. In addition to providing sampling and weighting frames, they provide a rich source of information on national and regional economy and industry structures. The comprehensive coverage of business registers is of particular relevance in the context of tourism, which is a fragmented sector, dispersed across a variety of industries.

This paper presents a profile of enterprise demography and employment for the tourism industries in Ireland at county level, which corresponds with level 4 of the European Union spatial classification 'NUTS'. New metrics, entitled '*Tourism Dependency Ratios*' are derived and mapped. These ratios illustrate how the tourism supply side can be analysed and understood from a spatial perspective. A Full-Time Equivalent (FTE) estimate of employment in the Tourism Industries is also provided, which is especially important, as it provides a more stable and comparable measure of employment over time.

Keywords: Tourism, business registers, employment, regional

Introduction

Tourism activity is a complex, demand driven, phenomena. The tourism sector, as defined by the International Recommendations for Tourism Statistics (UNWTO, 2010), reflects this complexity by classifying a comprehensive but fragmented set of industries to tourism. This complexity poses challenges for many domains within official statistics as it requires a fine level of disaggregation of activity; the equivalent of NACE class level[1]. Traditional Labour Force Surveys, for example, may not be able to provide estimates of employment for tourism industries even at a national level. For this reason, traditional tourism statistics have tended to focus on demand side surveys, with relatively less focus on the supply side, apart from accommodation arrivals and bed-night statistics.

At the sub-national level, the challenges of compiling tourism statistics magnify. However, there are a range of data sources already in existence, although not typically associated with tourism statistics that may provide useful complementary information. Such data sources, such as, administrative data or other commercially created datasets are not typically designed to align with statistical concepts. Consequently, these data usually require extensive work in order to derive usable statistical information. So there is a trade-off; administrative or other very large datasets are realistically the only source of high quality, sub-national data available but these data will, most likely, not align conceptually with tourism statistics concepts. Thus, a balance must be struck; in order to derive good quality, sub-national tourism statistics, strict International Recommendations on Tourism Statistics (IRTS) concepts may need to be relaxed.

[1] NACE is the economic activity classification used by Eurostat. Class level corresponds with 4 digit level disaggregation.

Administrative and similar, large datasets have a number of advantages, namely; they are already well established and in many cases, may be sufficiently large to provide robust, sub-national data. This paper concentrates on business demography statistics and argues that these census data may be able, at least partially, to fill some of the gaps in our understanding of tourism industries and employment at a regional level, for example, how important is tourism to different regions. The gaps in Irish national and sub-national tourism statistics are clearly outlined in a number of recent papers and reports (Deegan et al, 2004; MacFeely, 2006 & 2007; ITIC 2011). Typically these gaps can be summarised as lack of detail regarding expenditure and regional data and a paucity of information more generally on same-day visits. These reports also noted a lack of information on the performance of tourism businesses. Business performance has typically been outside the scope of traditional tourism statistics, reflecting a wider knowledge gap regarding small business and entrepreneurial activity across regional economies (Mshenga et al, 2010).

In the current economic climate, where National Statistical Institutes (NSIs) and Tourism Authorities (NTAs) have contracting budgets, and there is considerable pressure to reduce respondent burden, it is important that all available data sources are examined and utilised to the maximum extent possible. The Business Demography dataset has the advantage of already being compiled and consequently, the only cost of using these data is the marginal cost of conducting new analyses. Some examples of the type of complementary information and analyses that can be derived and conducted, such as, Tourism Dependency Ratios are presented.

What are tourism industries?

The tourism industries are formally defined by the United Nations World Tourism Organisation (UNWTO) International Recommendations for Tourism Statistics (UNWTO, 2010: 42) - See Figure 1.

Insert Figure 1 around here

The definition of tourism industries used for this study is closely aligned, although not exactly the same, as that specified by the UNWTO (see Appendix 1 for definition of tourism industries used in this study). The main differences between the two classifications arise because the business register in Ireland does not have sufficient granularity to identify the very specialist 'Country specific' industries - retailing and other activities. This problem will not be unique to Ireland and will most likely be an issue for any country that only classifies activity to NACE class level i.e. a very disaggregated level of economic activity classification (5 digits) would be required.

Consequently the number of tourism enterprises and employment presented in this paper may be a slight underestimate of activity in the tourism industries, although this underestimation should not be significant as retailing of Irish-specific tourism related goods is unlikely to generate much employment in Ireland. A good example of an Irish – specific tourism activity might be horse riding. From the National Farm Survey (ref) this accounts for 2,000 farms/stables and approximately 2,400 persons employed on a FTE basis (CSO, 2008) but this is outside the scope of this study (see Section on Data sources used).

What is Business Demography?

Business demography statistics provide data on the active population of enterprises in the State, including enterprise births (entries) and deaths (exists or failures) along with information on growth and survival (life expectancy) rates. These statistics are also used to generate indicators of entrepreneurial activity and the factors that enhance or impede it and to understand the contribution of newly-born enterprises to the creation of jobs.

Data sources used

The source data for this study are the Business Demography statistics, published by the Central Statistics Office in Ireland, in compliance with EU legislation[2]. In turn, business demography statistics are sourced from the Business Register, which is a register of all enterprises that are active in the State, which is also compiled in adherence to EU legislation[3]. These register data are assembled using information provided by the Revenue Commissioners (the Tax authorities) covering all companies, individuals and partnerships that register with the Revenue Commissioners for VAT, Corporation Tax or Income Tax or as employers.

The population of active enterprises, for a given year, contains all enterprises that were active at any stage during the reference year. Enterprises are counted as active if they satisfy at least one of the following conditions. The enterprise:

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[2] Annex IX (A Detailed Module for Structural Statistics on Business Demography) of Regulation (EC) No. 295/2008 of the European Parliament and of the Council of 11 March 2008 concerning Structural Business Statistics (recast).

[3] Regulation (EC) No. 177/2008 of the European Parliament and of the Council of 20 February 2008 establishing a common framework for business registers for statistical purposes and repealing Council Regulation (EEC) No. 2186/93.

- Paid VAT during the reference year;
- Employed persons during the reference year;
- Filed a Corporation Tax return for the reference year; or
- Filed an Income Tax return for the reference year with turnover of more than €50,000

Although, in theory the Business Register should cover all economic activity in the State, in practice, coverage is not complete. The register, when classified to NACE Rev.2, includes the following NACE Sections:

B	Mining and quarrying;
C	Manufacturing;
D	Electricity, gas, steam and air conditioning supply;
E	Water supply; sewerage, waste management and remediation activities;
F	Construction;
G	Wholesale and retail trade; repair of motor vehicles and motorcycles;
H	Transportation and storage;
I	Accommodation and food service activities;
J	Information and communication;
K	Financial and insurance activities (excl. 64.20 *Activities of holding companies)*;
L	Real estate activities;
M	Professional, scientific and technical activities; and
N	Administrative and support service activities.

Thus, Agriculture and Non-market/Public services sections are excluded. The CSO are currently extending the coverage of the business register to include these sectors by the end of 2013.

The main variables available from the business register are location, legal status and size of enterprise, number of employees and persons engaged and total turnover (although, it should be noted that the quality of the turnover data is not sufficiently good to allow publication). Other information that will be available in the future will include nationality of ownership.

The geographical breakdown for each enterprise is an approximation because no comprehensive administrative source is currently available for business locations. Consequently, the county activity is based on the address where enterprises have registered for taxation purposes, rather than where businesses actually operate from. In the majority of cases, the registration or administrative address and the place of activity are the same. However, for some larger enterprises with several local units or branches, estimates of regional employment will be less exact, as all employment is attributed to the county where the head office is located. This gives an employment bias in favour of Dublin, the capital city (See section Regional Demography). Enterprises with an 'Unknown' address are generally registered outside the Republic of Ireland for tax purposes. However, their employees are working in the Republic of Ireland, and allocating this employment to location may not always be exact.

The register also draws a distinction between total employment (persons engaged) and employees. For the purposes of business demography, employees are defined as:

'Persons who are paid a fixed wage or salary, including those temporarily absent because of illness, holidays or strikes'. Persons working on a labour-only, sub-contract, basis will usually not be included in the sector sourcing the activity but rather in the sector selling the service - NACE 78.20 (Temporary Employment Agency Activities). A better measure of total labour input is Persons Engaged, which includes proprietors, partners, directors and casual or temporary workers.

Conceptual scope

The information in this paper is based on enterprise and employment demography in the tourism industries, irrespective of whether the products or services sold by these enterprises were consumed by tourists or not. In other words the analyses do not quantify information on enterprises and employment generated by tourism demand. In order to measure the latter a Tourism Satellite Account is required.

Overall Demography

Table 1 shows the number of enterprises, persons engaged and persons employed in the tourism sector compared with all enterprises for the years 2006 to 2009.

Insert Table 1 around here

In 2009, enterprises operating in tourism industries accounted for 11.4% (more than 23,000 enterprises) of all enterprises in the State and 15.3% of persons engaged (over 205,000 persons) in business enterprises. As already noted in Section 4, the business register in Ireland, does not currently include comprehensive information for non-market and agricultural sectors. Consequently, in order to avoid overstating the real

contribution of employment in the tourism industries to total employment, total persons engaged in the tourism industries must be compared with total employment (including those sectors not included in the business register). When compared with total employment as recorded by the labour force survey[4] employment in tourism industries accounted for 10.6% of the total in 2009 (up from 10.2% in 2006).

It is also evident from Table 1, that tourism industries are more labour intensive when compared with the market overall. Tourism enterprises engaged an average of 10 persons until 2009 after which the average fell to 9, compared with an industry average of 7 persons engaged.

The absolute number of tourism enterprises increased steadily between 2006 and 2009, from 21,500 to 23,300. Furthermore, they now account for a larger relative market share in 2009 than in 2006 (11.4% compared with 10.4%). A similar pattern is also evident for persons engaged and employment, where despite a fall in absolute terms of almost 14%, persons engaged or employed in tourism industries accounted for roughly 15.5% of the total in 2009 compared with only 14% in the peak year of 2007.

Caution must be exercised when comparing numbers of persons engaged or employed over time, as the structure of employment across economies or within economic sectors can change quite dramatically and rapidly. Both entering and departing recession, quite significant changes in the use of part-time and full-time labour can be

[4] In Ireland, the Labour Force Survey is compiled as part of a wider Quarterly National Household Survey (QNHS).

experienced. For example, full-time employment accounted for 83% of total employment in Ireland during 2006 but by 2009 had fallen to 69%. For this reason, Full-Time Equivalent (FTE) labour provides a better measure of real labour utilisation over time.

Table 2 presents the number of persons engaged in the tourism industries in both simple head-count and full-time equivalent units.

Insert Table 2 around here

Comparing the two measures of employment for *All Tourism Industries* in 2009, the FTE measure was 38,000 persons lower than the head-count figure, a reduction from 205,000 to 167,000 (19%). The FTE measure also shows that the real fall in labour between 2006 and 2009 has been greater than the simple head-count implies - closer to 10% than the 8% fall suggested by the simple head-count numbers (See Figure 2).

Insert Figure 2 around here

At a section level the differences can be even more exaggerated, for example, the fall in labour between 2008 and 2009 in NACE Section R (Arts, Entertainment & Recreation) when measured by head count was 1% whereas the fall in FTE labour was almost 4%. According to the FTE measure of labour, tourism industries accounted for 9.7% of total employment in 2009 compared with 9.4% in 2006.

Figure 3 illustrates the contribution of the main tourism industries to the overall sector. In 2009 there were almost 16,500 enterprises classified to NACE section I - Accommodation & Food Services, accounting for 71% of all tourism enterprises.

Insert Figure 3 around here

The contribution of persons engaged and persons employed is broadly similar to that of enterprises, except that the importance of Accommodation & Food Services and Transportation & Storage increases slightly, as these industries are more labour intensive than sections R and N.

Regional Demography

When the absolute data are mapped the dominance of the Dublin economy is immediately apparent but otherwise little useful information is illustrated. However if the data are standardised by region, the data are much more revealing, as the relative importance of the tourism industries to each region becomes apparent.

Figure 4 illustrates 2009 *Enterprise - Tourism Dependency Ratios (Enterprise - TDRs)* across the NUTS 4 regions.

Insert Figure 4 around here

As already noted, these are enterprise data and not local units, and consequently, these estimates probably incorporate a bias in absolute terms towards Dublin (the Capital city), where more head offices are located. In turn, this may overstate the importance

of the tourism industries to regions outside Dublin as some sectors, for example, Distributive Trades, may have a greater regional distribution in terms of local units than tourism industries (i.e. tourism industries are by and large single unit enterprises and so their regional distribution should be quite accurate, whereas some other industries may have more local units that may distort the true relative importance at county level). Notwithstanding this, the Enterprise - TDRs give a reasonably accurate regional distribution of enterprises and provide a robust and intuitive indicator of the importance of tourism enterprises in the different regions.

Enterprise - TDRs in 2009 ranged from a low of less than 9% to highs of almost 18% (see Appendix 3). Overall, there were eight counties where the Enterprise - TDRs exceeded 14%. Figure 4 illustrates clearly that for counties with large urban centres (Dublin, Cork, Limerick and Galway) tourism industries are relatively less important to those regional economies. This is intuitive as these economies are the most diversified with the large industrial bases and consequently, the relative importance of tourism industries are diluted, even though in absolute terms tourism is very important.

Figure 5 illustrates the 2009 county *Persons Engaged - Tourism Dependency Ratios* (*Persons Engaged – TDRs*).

Insert Figure 5 around here

Drawing conclusions from the examination of persons engaged in enterprises must be done with care, as this excludes employment in non-market sectors and agriculture

(which in 2009 accounted for less than 27% of total employment (CSO, 2010)). As these sectors are not currently included in the business register held by CSO, employment for these sectors are not available at county level. Again this may introduce bias as the public sector tends to be located in the larger urban centres whereas agriculture is more important to the more rural midland and western counties. Despite this, the regional patterns of the Persons Engaged - TDRs are revealing and present a similar pattern to that shown in Figure 4. In particular they illustrate the relative importance of tourism to the regions lying along the western seaboard.

Again it must the stressed the HQ effect must be taken into consideration when analysing these data. For both Enterprises and Persons Engaged, the absolute numbers attributed to county Dublin is likely to be overstated (because of the *enterprise – local unit* issue noted earlier). For example, the number of persons engaged in Dublin in 2009 according to the business register was 613,000 compared the labour force estimate of only 416,000[5], a difference of 143,500 (or 32%). As a result the Persons Engaged – TDRs for the counties outside Dublin are likely to be overstated, as tourism industries are typically single unit enterprises. When this bias is corrected for, the broad, relative spatial patterns don't change dramatically.

Notwithstanding the issues raised regarding the regional absolutes, the broad regional and spatial patterns are consistent. From a policy perspective these patterns are important as some the counties with the highest TDRs (particularly those along the western seaboard), are some of the most deprived counties in the State as measured by

[5] That is average employment for 2009 in the Dublin region of 559,000 less NACE Sections A (Agriculture, Forestry & Fishing), O (Public Administration & Defence), P (Education) and Q (Human Health & Social work activities).

per capita Household Disposable Income (CSO, 2011b). Of particular interest from an Irish perspective are the implications for industrial, regional and employment policy, as these are the counties where multinational enterprises will be least keen to invest in as they don't have large urban centres with ready supplies of workers, universities and research capacity (Clinch et al, 2002; Doring et al, 2006).

Births & Deaths

In addition to providing numbers and size of enterprises and their respective employment, business demography also provides information on enterprise births, deaths and survival rates by NACE class and NUTS 4 region, providing valuable insights into the relative performance and life expectancy of the different tourism industries.

Accurately deriving enterprise births and deaths from administrative sources is not straight forward. Enterprise births are estimated from tax registrations that are newly active in the reference year i.e. were not active in the previous year. From this potential enterprise births that are the result of takeovers or mergers or arising from administrative changes are excluded. Some of the activities covered in the tourism related industries are associated with frequent changes of ownership, e.g. pubs and restaurants. It is likely that this results in a higher proportion of potential births that are not real births appearing in the administrative data. Consequently the number of enterprise births and employment in these births may be overstated in tourism related sectors (see Appendix 2).

As noted earlier, the business demography series for Ireland only began in 2006, and so, for the moment new enterprises can only be tracked at a micro level since 2006.

At this time series ages these data will facilitate more detailed and sophisticated lifecycle analysis.

In 2006, more than 1,600 enterprises classified as tourism industries commenced trading, accounting for 9% of all new enterprises established that year. In their first year, these fledgling tourism enterprises engaged almost 2,800 persons or 15% of all persons engaged by new enterprises (See Table 3).

Insert Table 3 around here

During the period from 2006 to 2009, tourism enterprises accounted for an increasingly greater share of all enterprise births. In 2006 tourism enterprises accounted for 9% of all enterprise births, but by 2009 this had increased to 15%. The importance of tourism industries to job creation is also evident from Figure 6. In 2006, the 1,613 new tourism enterprises engaged 2,797 persons, an average of 1.7 persons per enterprise and accounted for 15% of persons engaged in new enterprises. In 2009, the 2,153 new enterprises engaged 2,759 persons, an average of 1.3 persons per enterprise and accounting for 21% jobs created in new enterprises. Over the same period, the average number of persons engaged in new enterprises across all sectors fell from 1.1 persons to 0.9 persons. However some caution must be exercised here. The ratio of full-time/part-time employment used by new enterprises is not known with any certainty and so the decline in persons engaged per enterprise and the differences between tourism and all sectors may not as dramatic if a FTE measure was available.

In 2006, more than 1,300 tourism enterprises ceased trading, accounting for 11% of 'all enterprises deaths' in that year. Tourism enterprise failures rose to 1,681 in 2007 and then declined sharply in 2008 to 1,161. Since enterprise deaths are defined as enterprises that were active during the reference year but were not active during the following year, statistics on 2009 enterprise deaths were not yet available at the time of writing. As noted elsewhere in the paper, tourism industries are relatively labour intensive, and consequently, tourism enterprises that ceased trading accounted for 14% of all jobs lost in the traded enterprise sectors in 2006 (See Table 4).

Insert Table 4 around here

Figure 6 illustrates the number of tourism enterprise births relative to the number of total enterprise births for each county (NUTS 4 region) during the years 2006 - 2009.

Insert Figure 6 around here

Figure 7 illustrates the number of persons engaged in failed tourism enterprises relative to the total number of persons engaged in all enterprise deaths for each county during the years 2006 – 2009.

Insert Figure 7 around here

Once again, caution must be exercised for the reasons noted above regarding the absolute numbers of births and deaths, but the broad relativities and spatial patterns

should be sufficiently reliable for policy purposes. Not surprisingly, the patterns reinforce the importance of the tourism industries to the western seaboard.

From these data simple replacement ratios can be calculated. Table 5 shows that during the years 2006 – 2009 more enterprises were born than ceased, giving a positive replacement ratio (approximately 1.1 : 1) i.e. for every tourism enterprise that ceased trading 1.1 new tourism enterprises were created.

Insert Table 5 around here

For Persons Engaged, the opposite is true however; during the same period, new enterprises created less jobs than were lost from existing enterprises failing, giving a negative replacement ratio of roughly 0.9 : 1 i.e. for every job lost due to the failure of a tourism enterprise, less than one replacement job was created by the birth of new a tourism enterprise.

Of course these replacement ratios give a very short-term and limited perspective. Figure 9 shows that once new tourism enterprises become established, they quickly increase employment. Nevertheless, the replacement ratios provide a useful comparator with the broader economy. For example, the enterprise replacement ratio for All Industries over the 2006 – 2008 period was negative (0.98 : 1) as was the overall persons engaged replacement ratio (0.65 : 1).

Survival rates

Enterprise survival simply means that an enterprise that was active from a taxation perspective in one year is still active from a taxation perspective the following year. This of course does not imply that surviving enterprises made a profit but merely that they continued to trade. Survival rates also allow for changes in ownership etc. (see Appendix 2).

Figure 8 illustrates the survival rates for tourism industries that began trading in 2006. Within a year (i.e. by 2007) 13% of those enterprises had failed and ceased trading. By 2008 a further 8% had failed and by 2009 an additional 5% had ceased trading. The 3 year survival rate of 72% for the tourism industries established in 2006 is broadly comparable with that experienced by non-tourism industries.

Insert Figure 8 around here

Although not presented in Figure 8, the data reveal at a NACE Section level, survival rates can differ considerably across sections. For example, NACE H (Transportation and Storage) suffered very high failure rates between 2006 and 2009 relative to other tourism industries and the market as a whole. After 3 years only 63% of enterprises born in 2006 in that sector were still trading in 2009.

Enterprises that survive and become established tend to require more labour input over time. Tourism industries (particularly those in NACE I – Accommodation and Food Services) tend to be quite labour intensive. Figure 9.2 shows quite dramatic employment growth rates over the first 3 years of trading. After 3 years of trading the average number of persons engaged in an enterprise trading in the Accommodation

and Food sector was 5.8 persons, compared to 4.5 for tourism industries overall and compared to an average of 2.2 persons for all new enterprises born in 2006.

Insert Figure 9 around here

Between 2008 and 2009 a slight retrenchment in employment was evident which is presumably linked to the wider economic climate. It is impossible to say what the exact changes in labour input were for new enterprises, as the average full-time/part-time patterns may not hold for young enterprises, but it is likely that on a FTE basis, the decline in labour employed was greater than the 6% presented here.

At a county level, survival rates for enterprises born in 2006 differed quite significantly. Of course the number of births and deaths in any one individual county for any one year can be quite small and could be affected by a range of very localised circumstances – Kaniovski & Peneder (2008) list a variety of factors, including seasonality, destination size and market structure, which may influence an enterprises chances of survival. Issues such as access to finance, access to market and global conditions, such as security, could also be added. In order to present more stable regional estimates, the data have been aggregated to NUTS 3 regions and presented in Figure 10. The South-East region stands out clearly as the NUTS 3 region with the lowest 3 year survival rates for tourism industries (only 69%).

Insert Figure 10 around here

Survival rates aren't static however. Establishing a new business is always a precarious activity but as economic conditions change so too do survival rates for new

businesses. Availability of credit, consumer demand and disposable income all impact on the likelihood of survival. This is particularly true for tourism industries where a large proportion of their turnover may be dependent on tourism which is a discretionary activity and very exposed to the vagaries of household disposable income. Figure 11 compares the first year survival rates for tourism enterprises born in 2006, 2007 and 2009. As the data series is relatively new, two and three year survival rates cannot be compared over time yet.

Insert Figure 11 around here

Figure 11 shows that for all sectors of the economy, first year survival rates fell from 90% for enterprises born in 2006 to 86% for enterprises born in 2008. For tourism industries overall, first year survival rates fell from 87% to 85% over the same period. Within the tourism industries, first year survival rates differed considerably across NACE sections. For example, for Transportation & Storage Services first year survival rates fell from 80% to 75% between 2006-2007 and 2007-2008.

Future potential

This paper has presented some basic national and regional enterprise demography statistics. But business demography statistics offer a much broader potential as these data are potentially linkable with other data, such as the Structural Business Statistics (also compiled under EU legislation) or other administrative data sources[6]. Through matching or linking micro-data, a range complementary regional indicators could be

[6] This will largely depend on the coherence of the statistical or data infrastructure and legislation that exists in any given country.

developed, such as, metrics on the nationality of employees working in the tourism industries in each region, survival rates of enterprises classified by nationality of ownership, *quality of work,* concentration or competitiveness indicators. Potentially even more sophisticated analyses could also be facilitated, such as, tracking spatial migration of temporary workers, lifecycle working patterns or determining real labour costs.

Conclusion

Tourism statistics are difficult and costly to compile at a national level. At a regional level these difficulties and costs escalate and may be so prohibitive as to prevent their compilation altogether. Realistically the traditional methods of compiling tourism statistics (i.e. from survey data) cannot provide robust, detailed, small area or regional tourism information and thus alternate approaches to compiling sub-national statistics and deriving indicators must be considered. In particular, administrative datasets relating to the tourism supply side or large commercial datasets arising from tourists' electronic finger prints should be explored and exploited.

This paper has illustrated just some of the data available from business registers. Although not presented, size class and turnover information are also available. In Ireland, the quality of turnover data are considered poor as it is gleaned from a variety of different sources and refer to several time periods and hence has not been presented. However in many countries (particularly EU member states with superior quality registers) high quality information on enterprise turnover is most likely available. Thus a range of data is available to derive complementary indicators for regional tourism activity. These indicators might stand in their own right or be used

as the basis for top-down adjustments to national estimates or periodic satellite accounts. These data could also be used to supplement composite tourism sustainability indices, such as those proposed by Fernandez et al (2009).

There are a number of advantages to utilising business registers and demography information; they provide a robust data source and are already compiled to support the wider body of business statistics and so should be inexpensive to use and impose no additional response burden. Therefore business demography statistics offer a sustainable source of data for the future. Although not perfectly aligned with concepts like tourism demand, business demography nevertheless offers high quality, policy relevant information. Furthermore, broadly comparable data should be available across the EU, as every member state must compile business demography information in compliance with EU Regulation No. 295/2008. This last point is important, as raw tax administration on their own may have biases arising from poor tax compliance. However EU member states, in compiling their business demography data, should have adjusted for such bias.

Consequently, the TDRs derivable from the business demography data, offer a robust, inexpensive and internationally comparable approach to compiling indicators of tourism performance at the sub-national level.

Appendix 1 – Tourism Industries identified in Irish data

1	**Accommodation services for visitors**	**NACE Rev.2**
	Hotels and similar accommodation	55.10
	Holiday and other collective accommodation	55.20
	Recreational vehicle parks, trailer parks and camping grounds	55.30
	Other accommodation	55.90
2	**Food and beverage serving services**	
	Restaurants and mobile food service activities	56.10
	Event catering activities	56.21
	Other food services	56.29
	Beverage serving activities	56.30
3 & 4	**Railway & Road passenger transport services**	
	Passenger rail transport, interurban	49.10
	Urban and suburban passenger land transport	49.31
	Taxi operation	49.32
	Other passenger land transport n.e.c.	49.39
5	**Water passenger transport services**	
	Sea and Coastal passenger water transport	50.10
	Inland passenger water transport	50.30
6	**Air passenger transport services**	
	Passenger Air Transport	51.10
7	**Transport equipment rental services**	
	Renting and leasing of cars and light vehicles	77.11
8	**Travel agencies and other reservation services**	
	Travel agency activities	79.11
	Tour operator activitiies	79.12
	Other reservation service and related activity	79.90
9	**Cultural services**	
	Performing arts	90.01
	support activities to performing arts	90.02
	Artistic creation	90.03
	Operation of arts facilities	90.04
	Library and archives activities	91.01
	Museums activities	91.02
	Operation of historic sites and buildings and similar visitor attractions	91.03
	Botancial and zoological gardens and nature reserves activities	91.04
10	**Sports and recreational services**	
	Operation of sports facilities	93.11
	Fitness facilities	93.13
	Other sports activities	93.19
	Activities of amusement parks and theme parks	93.21
	Other amusement and recreation activities	93.29
	Renting and leasing of personal and household goods	77.21
	* Activities of sports clubs (93.12) excluded	

Appendix 2 – Enterprise Births, Deaths & Survival

Enterprise Births

An enterprise birth is the creation of a combination of production factors with the restriction that no other enterprises are involved in the event. Births do not include entries into the population due to mergers, break-ups, split-off or restructuring of a set of enterprises. It does not include entries into a sub-population resulting only from a change of activity.

A birth occurs when and enterprise starts from scratch and commences activity. An enterprise creation can be considered an enterprise birth if new production factors, in particular new jobs, are created. If a dormant unit is reactivated within two years, this event is not considered a birth.

Calculation of Enterprise Births

The population of real births in each year was estimated using administrative data as follows:

All enterprises registered with the Revenue Commissioners, recording activity from a taxation perspective in the reference year, but none in the previous two years, are extracted as the population of potential births. From this population, all potential births employing more than 20 people in the reference year are checked, along with a sample of smaller potential births. This determines whether the enterprise is a real birth in the reference year, or if it is a takeover or company restructure of an existing enterprise. Validation is carried out using other administrative sources, internet searches, or direct contact with the enterprise.

Validation shows that typically, around half of all potential births are not actually genuine new enterprises. For large potential births, employing over 20 people, only the births that were confirmed to be real are included in the final figures. For smaller size births, the proportion of real births identified in the validated sample is used to weight the potential births to create an estimate of the number of total births.

Potential issues with measuring enterprise births in tourism related sectors

Some of the activities covered in the tourism related industries are associated with frequent changes of ownership, e.g. pubs and restaurants. It is likely that this results in a higher proportion of potential births that are not real births appearing in the administrative data. Consequently the number of enterprise births and employment in these births may be overstated in tourism related sectors.

Enterprise Deaths

An enterprise death is the dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Deaths do not include exits from the population due to mergers, takeovers, break-ups or restructuring of a set of enterprises. It does not include exits from a sub-population resulting only from a change of activity. An enterprise is included in the count of deaths only if it is not reactivated within two years.

Calculation of Enterprise Deaths

All enterprises registered with the Revenue Commissioners, recording activity from a taxation perspective in the reference year but do not record activity in the following two years, form the population of potential deaths. Two years of data are required to exclude enterprises that are dormant for one year, but recommence activity in the following year. However, preliminary figures are released using just the following year's activity data. These preliminary figures include enterprises that later reactivate and are subsequently removed from the final figures.

As with enterprise births, samples of potential deaths are manually checked to eliminate takeovers and changes of administrative numbers that don't result in the real cessation of a business.

In Ireland the main administrative data sources for reference year $t + 1$ are not available until November of year $t + 2$. Preliminary data on deaths for year t are published once these data have been received and processed, late in year $t + 2$. The final data on deaths for year t are published in year $t + 3$.

Enterprise Survival

Estimates are provided for the number of new enterprise births that are still active in the years after their birth, along with the numbers of persons engaged in these enterprises in the year of birth, and in the year in which they survive.

Calculation of Enterprise Survival

All enterprises registered with the Revenue Commissioners, recording activity from a taxation perspective in the reference year

All potential births that are still active from a Revenue Commissioner perspective in the year after their birth are considered the population of potential one year surviving enterprises. Adjustments are made to this population to account for potential births in this population that were not real births (see calculation of Enterprise Births) and also for enterprises that survived by take over.

Similar calculations are used to estimate figures for enterprises that survive two and three years after their year of birth. Since the first reference year for enterprise births data are 2006, four and five year survival data are not yet available. The size class breakdown provided for the variables relating to survival is based on enterprise employment in their year of birth.

Potential issues with measuring enterprise survival in tourism related sectors

As noted above some tourism related industries are associated with frequent changes of ownership, which may result in an over estimation of births and new employment. In turn this may result in an under estimation of survival rates for the same sectors.

Appendix 3 – County Enterprise & Persons Engaged: Tourism Dependency Ratios, 2009

County	Number of Enterprises - Tourism	Number of Persons Engaged - Tourism	Number of Enterprises - All	Number of Persons Engaged - All	Tourism Dependency Ratio (%) Enterprises	Tourism Dependency Ratio (%) Persons Engaged
	000's	*000's*	*000's*	*000's*	*%*	*%*
Carlow	0.3	2.0	2.4	12.1	11.6	16.5
Cavan	0.4	2.1	3.2	16.4	11.5	12.5
Clare	0.8	5.2	5.4	26.4	14.1	19.8
Cork	2.7	18.6	23.7	132.4	11.3	14.0
Donegal	1.0	6.5	6.2	29.0	15.6	22.6
Dublin	5.4	86.1	60.8	613.4	8.8	14.0
Galway	1.4	10.8	11.1	58.9	13.0	18.4
Kerry	1.2	8.0	6.9	33.7	17.8	23.6
Kildare	0.9	6.7	8.9	48.8	10.3	13.8
Kilkenny	0.5	3.0	3.7	18.2	13.2	16.7
Laois	0.3	1.8	2.6	10.8	13.0	16.8
Leitrim	0.2	1.2	1.4	6.2	16.8	18.7
Limerick	1.0	7.6	7.8	42.4	12.6	17.9
Longford	0.2	0.9	1.6	7.0	11.9	13.0
Louth	0.6	3.9	5.0	25.9	11.4	15.1
Mayo	0.8	5.0	5.5	26.4	14.9	18.9
Meath	0.7	4.5	7.7	31.9	9.7	14.1
Monaghan	0.3	1.7	2.8	12.9	9.2	12.9
Offaly	0.3	1.9	2.7	14.3	11.8	13.1
Roscommon	0.3	1.5	2.5	9.5	12.9	16.0
Sligo	0.4	2.6	2.6	15.0	14.0	17.4
Tipperary	0.9	5.2	6.7	32.4	14.2	16.0
Waterford	0.6	4.4	4.5	28.3	14.3	15.6
Westmeath	0.5	3.0	3.7	17.6	13.0	16.9
Wexford	0.8	5.4	6.5	30.3	12.3	17.7
Wicklow	0.7	4.8	6.5	25.2	10.3	19.0

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Figure 1 – Tourism Industries (UNWTO – IRTS)

	Activities/Industries
1	Accommodation for visitors
2	Food & Beverage serving activities
3	Railway passenger transport
4	Road passenger transport
5	Water passenger transport
6	Air passenger transport
7	Transport equipment rental
8	Travel agencies and other reservation services activities
9	Cultural activities
10	Sports and recreational activities
11	Retail trade of country-specific tourism characteristic goods
12	Other country-specific tourism characteristic activities

Source: (UNWTO, 2010)

Table 1 – Enterprise and Employment Demography, 2006 - 2009

Year	Number of Enterprises - Tourism	Number of Persons Engaged - Tourism Industries	Number of Persons Employed - Tourism Industries	Number of Enterprises - All	Number of Persons Engaged - All Enterprises	Number of Persons Employed - All Enterprises
	000's	*000's*	*000's*	*000's*	*000's*	*000's*
2006	21.5	209.7	194.0	206.1	1,467	1,338
2007	21.9	217.9	202.2	212.8	1,549	1,419
2008	22.1	222.6	206.8	208.1	1,518	1,393
2009	23.3	205.1	189.4	205.2	1,336	1,221

Source: (CSO, 2011a)

Table 2 – FTE Labour Input to Tourism Industries, 2006 – 2009

NACE Section	Description	Employment Type	2006	2007	2008	2009
			000's	*000's*	*000's*	*000's*
I	Accommodation & Food Services	Full-Time & Part-Time	155.3	163.7	164.0	149.4
		FTE	127.2	133.5	132.2	118.1
H	Transportation & Storage	Full-Time & Part-Time	25.2	23.9	28.2	27.2
		FTE	23.9	22.6	26.6	25.4
R	Arts, Entertainment & Recreation	Full-Time & Part-Time	20.6	21.9	22.2	22.0
		FTE	17.3	18.6	18.8	18.1
N	Administrative & Support Services	Full-Time & Part-Time	8.5	8.4	8.3	6.5
		FTE	7.3	7.2	7.1	5.4
	All Tourism Industries	Full-Time & Part-Time	209.7	217.9	222.6	205.1
		FTE	175.6	181.9	184.7	166.9

Source: (CSO, 2010; 2011a)

Figure 2 – Percentage change in Labour Input to Tourism Industries 2006 – 2009

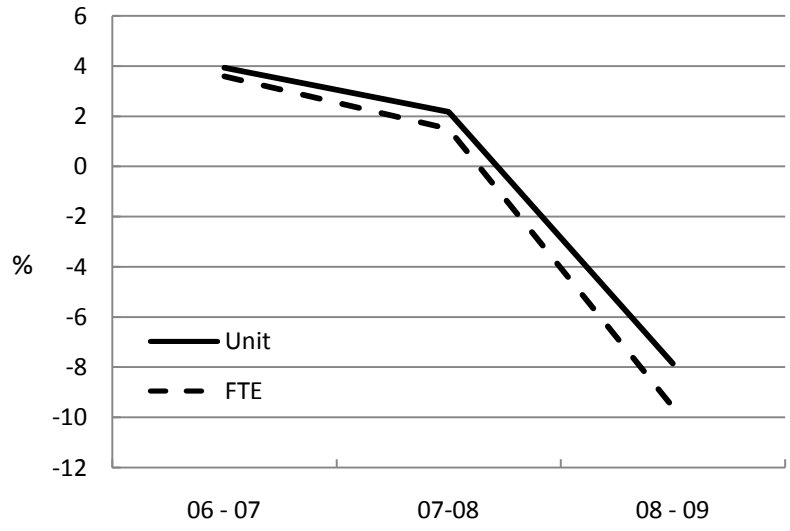


Figure 3 – Tourism Industries by NACE Sectors (%), 2009

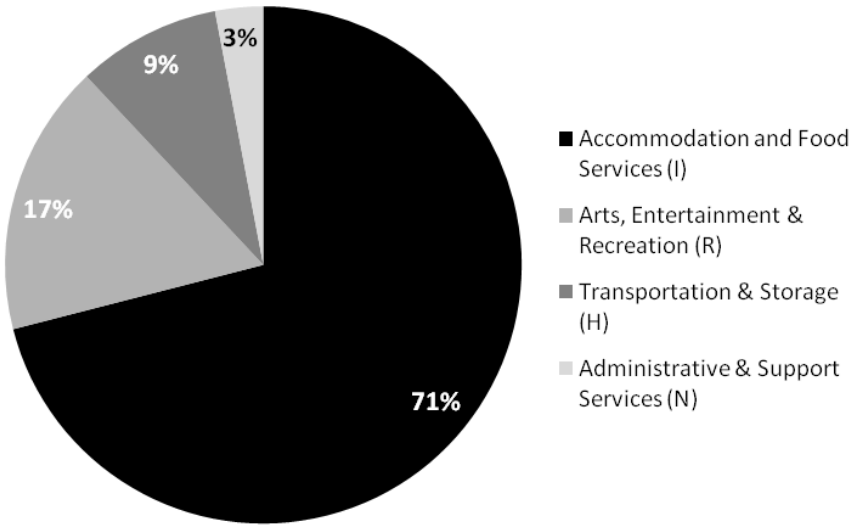

3%
9%
17%
71%
Accommodation and Food Services (I)
Arts, Entertainment & Recreation (R)
Transportation & Storage (H)
Administrative & Support Services (N)

Figure 4 – 2009 County Tourism Dependency Ratios – Enterprises

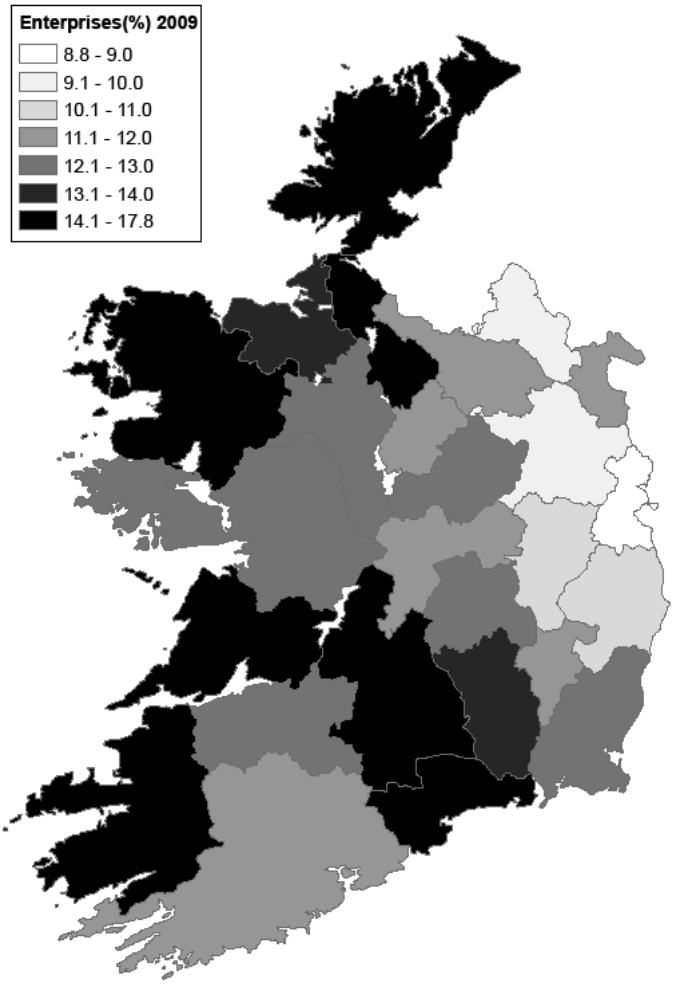


Figure 5 – 2009 County Tourism Dependency Ratios – Persons Engaged

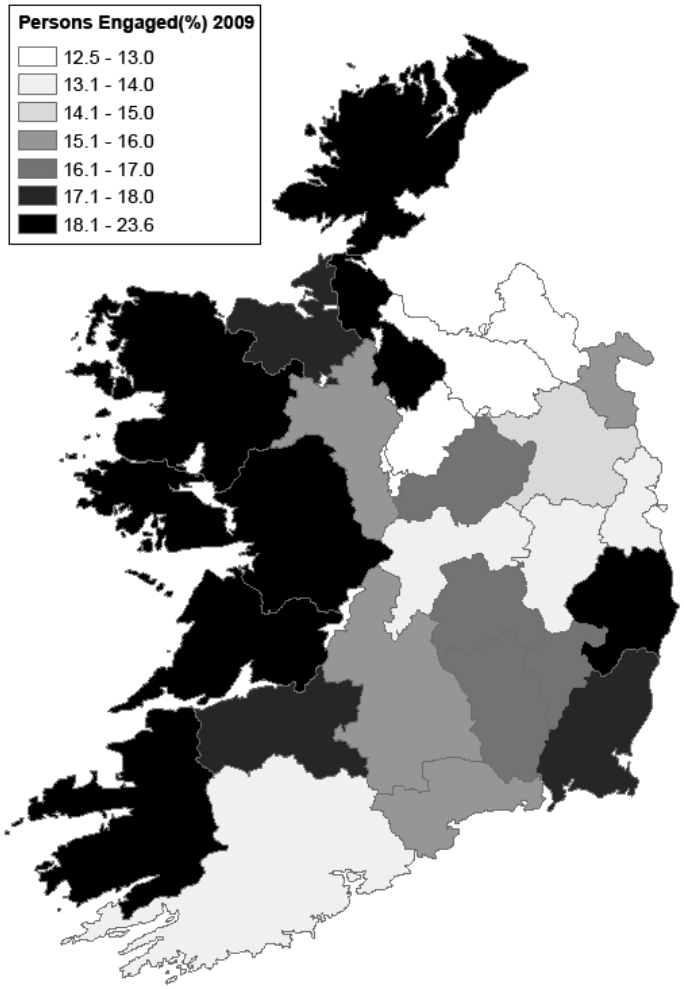


Table 3 – Number of Enterprise Births & Associated Persons Engaged, 2006 - 2009

Year of Birth	Enterprise Births			Persons Engaged in New Enterprises		
	Tourism Industries	All Industries	Contribution	Tourism Industries	All Industries	Contribution
			%			%
2006	1,613	17,167	9	2,797	18,305	15
2007	1,415	13,922	10	2,747	15,364	18
2008	1,550	12,350	13	2,743	14,048	20
2009	2,153	14,528	15	2,759	12,987	21

Source: (CSO, 2011a)

Table 4 – Number of Enterprise Deaths & Associated Persons Engaged,

2006 - 2008

Year of Death	Enterprise Deaths			Persons Engaged in deceased Enterprises		
	Tourism Industries	All Industries	Contribution	Tourism Industries	All Industries	Contribution
			%			%
2006	1,346	12,061	11	3,083	22,119	14
2007	1,681	17,463	10	3,721	26,972	14
2008	1,161	14,599	8	2,909	24,720	12

Figure 6 – Tourism Enterprise Births 2006 - 2009, NUTS 4 Regions

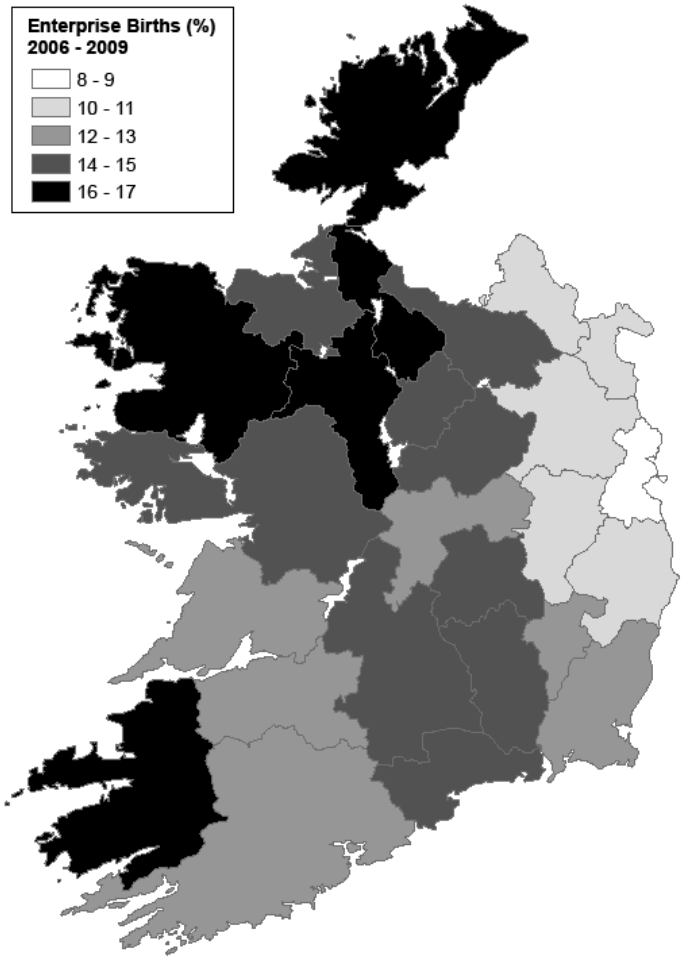


Figure 7 – Persons Engaged in Failed Tourism Enterprises 2006 - 2009,

NUTS 4 Regions

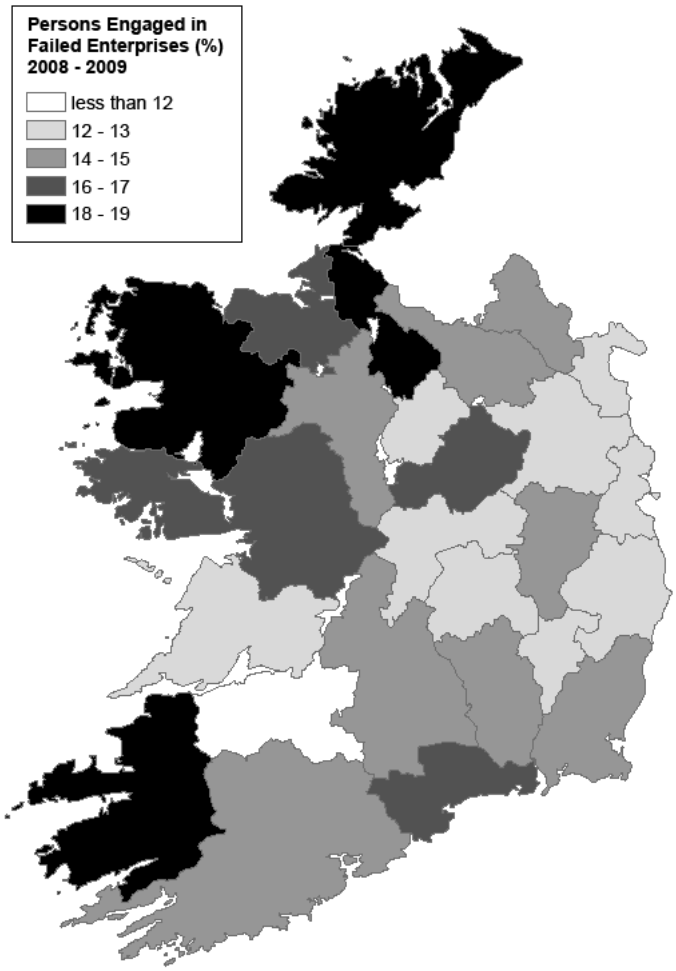


Table 5 – Replacement Ratios, 2006 - 2008

Year	Enterprises				Persons Engaged			
	Births	Deaths	Absolute Difference	Replacement Ratio	Births	Deaths	Absolute Difference	Replacement Ratio
2006	1,613	1,346	267	1.20 : 1	2,797	3,083	-286	0.91 : 1
2007	1,415	1,681	-266	0.84 : 1	2,747	3,721	-974	0.74 : 1
2008	1,550	1,161	389	1.34 : 1	2,743	2,909	-166	0.94 : 1
2006 - 2008	4,578	4,188	390	1.09 : 1	8,287	9,713	-1,426	0.85 : 1

Figure 8 – % Survival Rates for the Tourism Industries (Base = 2006)

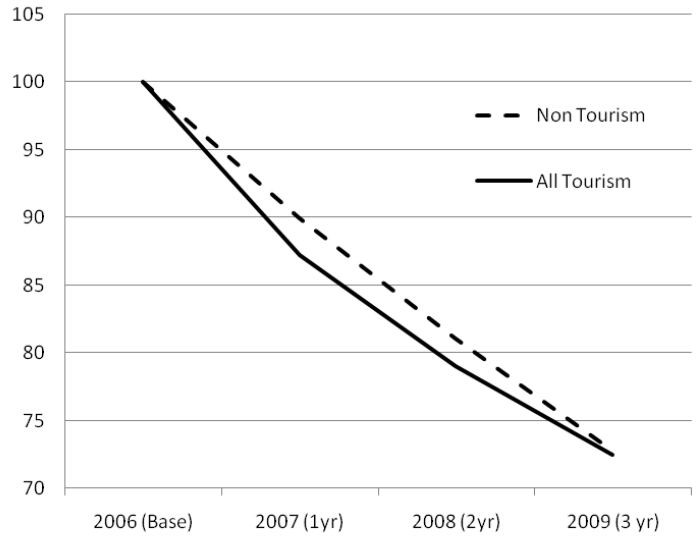


Figure 9 – % Growth in Labour Input for Surviving Enterprises born in 2006

(Base = Year 2006)

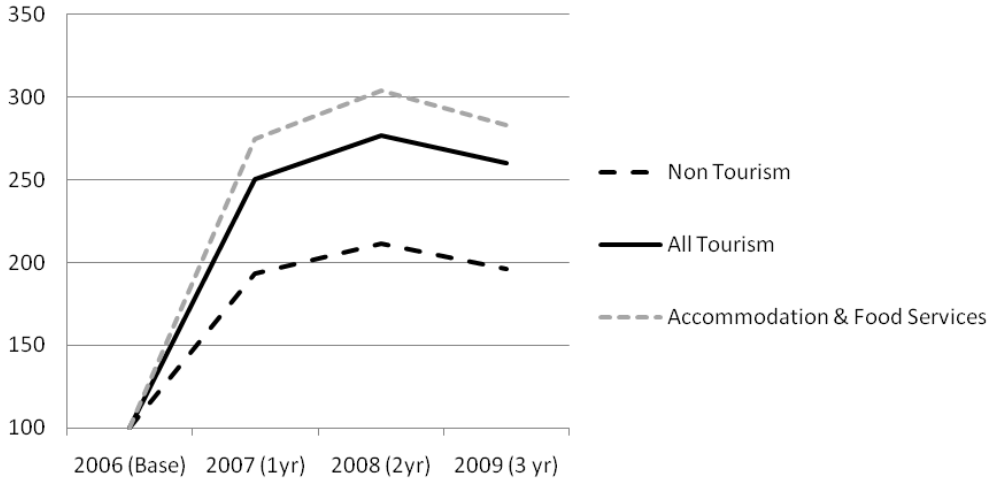


Figure 10 – 3 Year Survival Rates for the Tourism Industries, NUTS 3 Regions

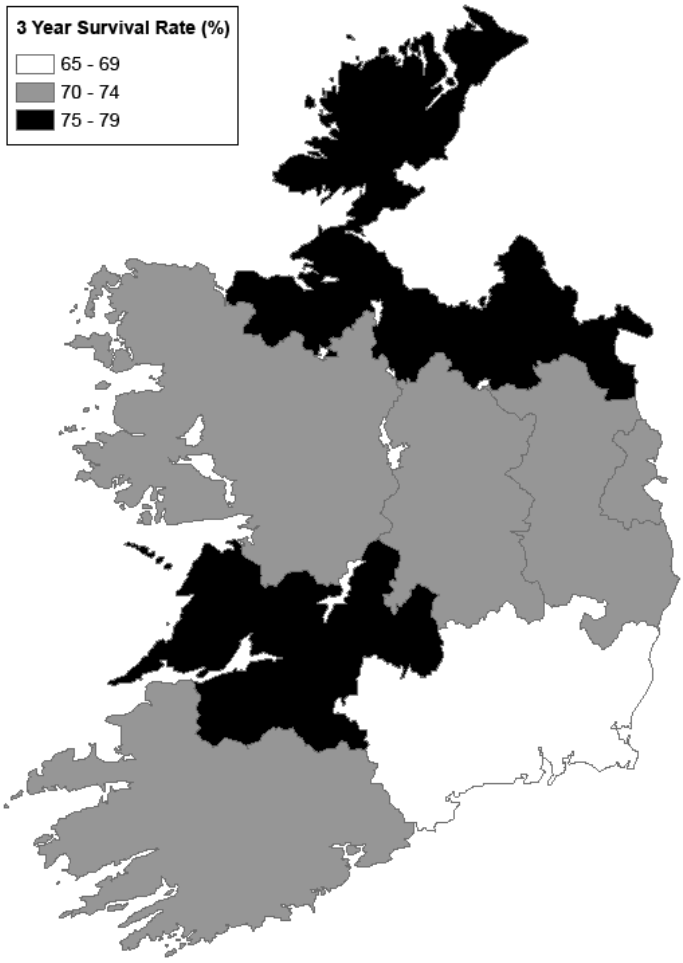


Figure 11 – First Year % Survival Rates for Tourism Industries born in 2006 - 2008

