

Management Research on Multinational Corporations: A Methodological Critique*

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Abstract: In the context of burgeoning research on multinational corporations (MNCs), this paper addresses the issue of the representativeness of databases of MNCs in Ireland. It identifies some important deficiencies in existing databases much used by scholars in the field. Drawing on the international literature, it finds that this problem also characterises research on MNCs in many other countries. In the Irish context, we find that the extant empirical research has generally excluded two key categories of MNCs, namely, (a) foreign MNCs which are not grant-aided by the main industrial promotions agencies and (b) Irish-owned MNCs. The paper outlines our experience in identifying and addressing these deficiencies and describes the methods that might be employed in more precisely defining the MNC population in Ireland. More generally the paper reviews some of the issues and obstacles confronting scholars investigating the MNC sector in Ireland and abroad.

I INTRODUCTION

Over the past decade or more, Ireland has propelled itself from being one of Europe's economic backwaters to the forefront of European economies (Datamonitor, 2004; Powell, 2003). Foreign direct investment (FDI) has played a crucial role in this growth. For example, the stock of Irish inward FDI per

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head of population for 2000 was twice the EU average (Barry, 2004), while in 2002 and 2003 levels of FDI into Ireland were equivalent to the totals attained by the 10-member Central and Eastern European bloc, averaging \$25 billion annually (Enterprise Ireland, 2005). Ireland continues to attract a large share of inward FDI investment despite the post 9/11/dot.com slowdown in international investment, with only five countries (Luxembourg, China, France, the US and Spain) registering larger absolute FDI inflows in 2003 (Begley *et al.*, 2005; Collings *et al.*, 2005; Forfás, 2005).

Apposite to this, Irish multinational corporations (MNCs) have also been growing in importance internationally. In an effort to counterbalance Ireland's dependence on FDI, industrial policy has for some time focused on developing indigenous firms to a stage where some would become important MNCs in their own right. This is reflected in the significant growth witnessed in outward FDI in recent years. In fact Ireland has moved from having the third lowest outward investment stock in the late 1990s (after Greece, Portugal and Austria) to a position where in recent years FDI outflows have grown even more sharply than FDI inflows (Barry *et al.*, 2003).

As a result of their overall importance to the Irish economy we have witnessed a marked interest in research on MNCs and their activities. However, while this research has added to knowledge in the area, one must question the representativeness of many of these studies, particularly with regard to the databases on which they rely for sampling purposes.

This paper identifies some of the key challenges in conducting a representative survey of MNCs in Ireland.¹ Specifically the paper focuses on a key methodological issue in survey research, namely achieving representativeness by precisely identifying the population to be studied, in this case the population of MNCs in Ireland. To date, empirical research on the MNC sector in Ireland has relied on listings of foreign-owned MNCs, largely garnered from conventional sources, particularly databases provided by the main industrial development agencies. Over the past year, we have worked on the compilation of a database of MNCs in Ireland. In so doing, we have identified a number of methodological problems with work in this field, specifically the incomplete

¹ The research team is working on an international research project entitled *Employment Practices of Multinational Corporations (MNCs) in Organisational Context: A Large-scale Survey*. This involves a comprehensive survey of employment relations (ER) in MNCs in six countries, including Ireland. The aim of the research is to map the ER practices of MNCs and to relate these to such organisational factors as corporate structure, degree of international integration, nationality of ownership, and sector. The survey, which will be the first in Ireland to be based on a large-scale representative sample of MNCs, will focus on four key issues: rewards and performance management, employee representation, organisational learning and employee communication and involvement.

coverage of databases used to identify MNCs to date and, consequently, issues in regard to the representativeness of the study populations used in numerous studies of MNCs.

We also found a similar picture with regard to the experience in other countries. Of particular importance are Collinson and Rugman's (2005) recent findings that much of the published work on MNCs lacks representativeness since it relies on data from a small number of MNCs. Using bibliometric analysis, they highlight 'sample biases' towards the largest, most global, well-known, US-based manufacturing firms. The end result is that a disproportionate amount of business and management research on MNCs is focused on the world's top ten companies such as IBM, Microsoft, Hewlett Packard and Intel leading, they argue, to an unrepresentative depiction of management practice in MNCs.

In identifying the problem of representativeness and providing some insights on how this might be addressed, this paper should assist scholars by increasing awareness of some of the pitfalls of relying on commonly utilised databases. Further, given the critical contribution of MNCs to Ireland's economic well being, it is critical that studies of MNCs accurately reflect the country's MNC population.

We begin by outlining some issues involved in conducting survey-based research. We then summarily review extant studies of management practice in the MNC sector in Ireland. Next we document the various processes utilised and stages covered in compiling what we believe to be a much more comprehensive database of MNCs in Ireland. Finally, we describe our database in detail and demonstrate the incomplete coverage of existing databases. In so doing, we point to both the contribution of this work and the difficulties and obstacles confronting scholars in this area.

II CONDUCTING SURVEY RESEARCH

Given the weight and significance of the MNC sector to the Irish economy our starting premise was to conduct a large-scale survey which would add greatly to existing knowledge of MNCs in Ireland. One of the main advantages of undertaking large-scale survey research is the ability to generalise the findings to a particular population. Sampling is the most common method employed in survey research, as often surveying all cases in the population (i.e. a census) is not a feasible option due to both time and cost constraints. The underlying principle of sampling is that a subset of the cases in a population can provide useful information that describes the entire population (Williams, 1997).

One of the first stages of sampling, and one which is of critical importance, is identifying a population and developing a comprehensive sample frame from which to take the sample (Pinsonneault and Kraemer, 1993). This sampling frame or population list is fundamental to the sampling process (Williams, 1997). Identifying the population is of critical importance because the sample will be a microcosm of the population that it is intended to represent (Murphy, 1997). Likewise Fowler (1988) stresses the importance of a comprehensive population list by adding that if a researcher is considering sampling from a list, it is particularly important to evaluate the list to find out in detail, how it was compiled and how updating was carried out. Any missing cases will obviously not have the opportunity to be represented in the study and therefore has the potential to bias the results (Murphy, 1997).

Having generated an accurate and comprehensive sampling frame one must then decide on the sampling method to be used. In selecting this method the aim is to ensure that the sample taken is a representative subset of the total target population and thus the findings can be generalised to the population (cf. Gill and Johnson, 2002). Therefore, it is clear that the essence of good, reliable and accurate survey research is premised on the comprehensiveness and accuracy of the population list as well as the selection of an appropriate sampling method.

III RESEARCHING MNCs IN IRELAND – AN OVERVIEW

Despite the obvious importance of MNCs to Ireland's economic performance, little or no research has been conducted by means of a large-scale fully representative survey of management practice in the MNC sector. Existing empirical research has generally either relied upon small-scale surveys of MNCs (cf. Kelly and Brannick, 1985), extracting findings on MNCs from larger surveys or consultancy reports (cf. Barrios *et al.*, 2005; Geary, 1999; Gorg and Strobl, 2002; Gunnigle *et al.*, 1994, 1997; Irish Management Institute, 2003; Kearns and Ruane, 2001; National Centre for Partnership and Performance, 2004; Roche and Geary, 1996), or case study based research (cf. Dundon *et al.*, 2003, 2004; Gunnigle and Collings, 2005). In a similar vein, much of the more general business and management literature on MNCs in Ireland have tended to rely on data developed from the Forfás annual employment surveys (cf. Barrios *et al.*, 2005; Gorg and Ruane, 2001; Gorg and Strobl, 2001, 2002, 2003; Kearns and Ruane, 2001). This is an annual census of employment in all manufacturing and internationally traded services companies supported by the enterprise development agencies such as IDA Ireland, Enterprise Ireland, Shannon Development and Údarás na

Gaeltachta. However, such an approach to developing a sample frame of MNCs is unreliable because it tends to exclude certain categories of MNC, which is likely to bias the results (cf. Murphy, 1997). Specifically, these listings exclude MNCs, which are not grant aided or assisted in some form, and thus research relying on just these listings cannot be said to be truly representative of the total MNC population in Ireland.

While acknowledging the broader literature base summarised above, we now focus on the literature on employment relations (ER) and human resource management (HRM) in MNCs in Ireland as an illustration of the limitations of extant studies of MNCs. Looking specifically at the methodologies employed in the literature, a useful starting point is the work of Kelly and Brannick (1985). This study relied on a sample of 37 MNCs from a sample frame of 200 while representatives of only 27 MNCs were interviewed. This is a very small sample and thus runs the risk of sampling error, reducing the generalisability of the findings. As with subsequent studies, the sources used to develop the total population were limited (see Table 1 for greater detail). These sources included the Industrial Development Authority (IDA), Federated Union of Employers (FUE) and various trade unions. The problem with using development agencies (such as IDA Ireland) has been highlighted above while bodies such as the FUE (now the Irish Business and Employers Confederation (IBEC)) tend to rely on membership listings, thus excluding non-members. Another deficiency in this and similar studies is the absence of criterion used to define an MNC: what exactly constitutes a multinational? Does the IDA definition differ from that of the FUE? and so on.

The Cranfield-University of Limerick (CUL) study of ER and HRM policy and practice relies on periodic surveys of a sample of all large organisations in Ireland (cf. Gunnigle *et al.*, 1994, 1997; Turner *et al.*, 1997a, b). The sample frame consisted of the 'top' companies (both trading and non-trading) in Ireland obtained from the *Business and Finance* list. This source also suffers from a number of weaknesses and used in isolation it cannot be classified as representative. However, as acknowledged in publications, this study focuses primarily on larger organisations. MNCs only represent a proportion of respondents and no attempt is made to ensure representativeness among the MNC respondents. Nor does this study attempt to identify Irish-owned MNCs and thus it was impossible, for example, to compare Irish-owned and foreign-owned MNCs.

In a similar but more limited vein to the UK Workplace Employment Relations' surveys (WERS) (cf. Cully *et al.*, 1999; Millward *et al.*, 2000), the UCD workplace study of management practices in Ireland was conducted in 1996 (cf. Geary, 1999; Geary and Roche, 2001; Roche and Geary, 1996). As with the CUL studies, this did not focus on MNCs *per se* but rather sought to

examine practice in a representative sample of all workplaces in Ireland. While covering the small and medium size enterprise (SME) sector more comprehensively than previous studies, this work also suffers from some limitations. In particular, the total study population was derived from a listing provided by The Economic and Social Research Institute (ESRI). Our investigations indicate that such listings were primarily derived from databases provided by the main industrial promotions agencies (IDA Ireland, etc). We have already outlined some of the problems associated with exclusive reliance on these sources. Publications emanating from the UCD study provide quite limited detail on sample size, however, given that the MNC population represented a sub-sample of the respondent firms, it would appear that the number of MNCs studied was quite small. When compared to the WERS studies in the UK, the UCD survey does not appear to achieve anything near the same level of coverage (cf. Turner *et al.*, 2001). Again, as with the other Irish studies reviewed, the UCD study does not identify Irish-owned MNCs as a distinct category.

Two other studies, which are important reference points for Irish scholars in the field, are the annual Irish Management Institute (IMI) *Survey of MNCs in Ireland* and the National Centre for Partnership and Performance (NCP) benchmark survey *The Changing Workplace: A Survey of Employers' Views and Experiences*. Both the IMI and NCP reports deliver useful and specific information but again do not appear to achieve adequate representativeness with regard to MNCs in Ireland. In the case of the IMI, the sample size tends to be small, for example, 67 MNCs in the 2003 study (cf. Hannigan, 2000; IMI, 2003). In addition no reference is made to the source(s) used or how many companies comprise the full population. However, it would appear that the main source is the IMI's own membership list. This renders any attempt to generalise to the greater MNC population in Ireland difficult. Similarly, the NCP report does not provide much detail on sampling methodology, stating only that the report is based on 5,198 valid questionnaires (NCP, 2004). Again neither report distinguishes between foreign and Irish-owned companies or the size of these companies.

In addition to studies relying on survey-based methodologies, case study research has provided important insights into the activities and operation of MNCs in Ireland (cf. Dundon *et al.*, 2003, 2004; Gunnigle and Collings, 2005; Gunnigle *et al.*, 2004). However, as is generally the case with research of this nature, the findings tend to be case specific and lack representativeness thus limiting their generalisability to the greater population.

These critiques should be considered with one caveat however. Where research questions are focused on a particular sub-group of MNCs, for example, export oriented manufacturing, existing databases can and often do

represent an appropriate sample frame, provided, the database for the particular sub-category is accurate. Even in this instance however, the issue of how the populations in such studies were derived are often not discussed in any great detail and thus are open to question. More importantly, much of the extant research on management practice in MNCs in Ireland to date is generic in nature, identifying patterns deemed characteristic of practice in MNCs. This is clearly erroneous given that the samples used do not accurately reflect the general population of MNCs in Ireland.

Thus we would argue that two major gaps exist in the extant literature. First, and most importantly we have the issue of representativeness of the MNC sector in Ireland. To date survey-based research has suffered either from small sample sizes or population lists, which are not adequately representative of the total MNC population in Ireland. This clearly undermines the ability of scholars to generalise to the greater population of MNCs. For example, the common exclusion of non-grant aided firms is likely to bias findings on key aspects of practice and behaviours of MNCs. In an international context, Whitley (1999, p.128) argues that "... the more dependent are foreign firms on domestic organisations and agencies, both within and across sectors, the less likely are they to change prevalent patterns of behaviour". This is significant as it would suggest that those firms which have tenuous links to state agencies may be less restricted in implementing practices which are at odds with host traditions. Thus, we may be getting a biased picture of 'excessive' conformity from research which draws on databases derived from the state agencies.

Furthermore, as will be shown later in the paper, the lists used in the extant literature were biased towards companies in the manufacturing sector while companies in the services sector were generally under-represented, despite the services sector in Ireland accounting for nearly 66 per cent of total employment (Eurostat, 2004), representing a growth of 3.1 per cent from 2002 while manufacturing employment fell by 1.9 per cent during the same period (Directorate-General for Economic and Financial Affairs, 2005). The growing importance of the services sector is reflected in internationally traded services sector exports, as a percentage of GDP, surpassing that of most developed economies (Forfás, 2006). In 2004 the International Financial Services Centre (IFSC) accounted for the majority of direct investment into Ireland at €4.4 billion compared to €1.5 billion for non-IFSC FDI.

Another question mark over the reliability of research conducted to date is the prevalence of double counting in these databases (i.e. the same MNC being listed twice or more, under differing trade or registered names). This problem of duplication has been previously highlighted by Kish (1965) and Murphy (1997). The occurrence of this, which is particularly noteworthy in the state

agency listings, has serious implications for the reliability of a study as all companies do not have an equal chance of being selected due to some companies being present on the list more than once.

Second, a key omission in almost all of the extant research on MNCs (with the notable exception of Donnelly, 1999 and Monks *et al.*, 2001) is Irish MNCs. If scholars are to achieve a representative view of the MNC sector in Ireland then this must include the growing number of indigenous MNCs. Flows of outward direct investment have increased from Ireland in recent years, which reflect the increasing growth of Irish-owned MNCs (Forfás, 2001). There has been a considerable amount of overseas business expansion by Irish companies exemplified by companies such as Cement-Roadstone Holdings (CRH) and the Kerry Group. In 2004 there were a total of 74 foreign acquisitions worth over €5 billion by Irish companies (Mergers and Acquisitions Tracker Surveys, 2004).

By conducting a representative study of this 'most' important group of organisations we will be able to identify patterns that are characteristic of MNCs operating in Ireland. In particular we will learn more on the patterns of MNC practice across all industrial sectors. To date the non-grant aided service sector (e.g. retail) and Irish-owned MNCs have tended to be under-represented or, more worryingly, absent from existing studies. To date, much of the research on MNCs in Ireland has been based upon unrepresentative listings, a deficiency also evident elsewhere:

Many international databases collect firm data from national authorities. Sample coverage that draws on such sources will thus vary across countries depending on the parameters of the national statistical agency's reporting requirements. The sample of firms entering the database from different countries is therefore not random, but is determined by the local institutional environment.

Alfaro and Charlton (2006), pp. 9-10.

IV DEVELOPING THE SAMPLE FRAME: CHECKING AND DOUBLE-CHECKING

Given the profile and importance of MNCs in Ireland one might think that a comprehensive list of MNCs might be easily obtained. However, this is not the case and may largely explain why the extant research on MNCs has not been fully representative of the MNC population in Ireland. Whilst there are a number of listings available, no one list can be considered comprehensive, accurate or reliable.

Our initial task was to identify the population (cf. Murphy, 1997) of (1) foreign-owned MNCs and (2) Irish-owned MNCs in order to carry out a representative study of MNCs in Ireland.² To this end a critical first step was to clearly outline a definition of what constitutes an MNC. While it is clear from the literature that no universal definition of an MNC exists, key criteria used in defining MNCs' are their percentage of foreign sales or operating profits, number of employees abroad or some combination of these variables (Shaked, 1986). For example, Bartlett and Ghoshal (1989, p.14) define an MNC in terms of its "portfolio of multiple national entities", while Vernon and Wells (1986, p. 2) provide a commonly used definition of an MNC as "... enterprises ... characteristically made up of a parent firm located in one country and a cluster of affiliated firms located in a number of other countries". Generally, MNCs are further understood as firms which have internationalised through acquisition, mergers and joint ventures, or through 'greenfield' investments. We also adopt this understanding. Thus, whilst firms may also internationalise through other mechanisms, such as franchise arrangements, these are not of primary concern for this research. For the purposes of this paper we refer to MNCs as organisations with a controlling interest in foreign companies (Daniels and Radebaugh, 1995). Moreover, when looking at the nationality we are looking at 'this moment in time' e.g. where a long standing Irish MNC has been bought out (more than 50 per cent) by a foreign company, it is characterised as 'foreign-owned' in this study.

Given, that our focus was on researching employment relations, we further used an employee size threshold. We initially considered the European Works Council (EWC) Directive (94/45/EC) definition of an MNC as "... enterprises employing 1,000 or more employees in the EEA (excluding the UK), with at least two operating sites within Europe, employing 150+ people". It was decided to lower the size threshold as it was believed that the existing EWC Directive was over-limiting in that it would exclude a number of moderately sized MNCs (Edwards *et al.*, 2006). However, the thresholds were not dropped to a level where organisations might not have management structures in place.³ Additionally, there was another pragmatic reason in that it was felt databases would be even more unreliable when it came to smaller sizes. Hence, we set out the two MNC populations as follows:

² Irish-owned refers to the Republic of Ireland only and foreign-owned refers to non-Republic of Ireland.

³ There is currently a debate taking place on revising the EWCs directive which has included calls to lower the total employment threshold to 500 (from 1,000) and the operation in each country threshold to 100 (from 150).

- (1) Foreign-owned: All wholly or majority foreign-owned organisations operating in Ireland, with 500 or more employees worldwide and 100 or more employed in their Irish operations.
- (2) Irish-owned: All wholly or majority Irish-owned organisations with 500 or more employees worldwide and at least 100 employed abroad.

Having clearly defined an MNC, the next step was to identify a comprehensive population of MNCs, thus defined, in Ireland. Since no representative listing of MNCs in Ireland exists we had to develop our listing from a number of sources. The main criteria in determining the suitability of these sources were that they needed to have employment figures for each company, both in Ireland and worldwide, and also allow us to distinguish whether the enterprise was foreign or Irish-owned and, if foreign-owned, what its country of origin was. These issues proved particularly problematic and the following section outlines how we sought to develop an accurate and comprehensive population list. Table 1 provides a list of the main strengths and weaknesses of all the databases/lists used in compiling this population.

A number of recurring themes arose when examining the various databases including, their lack of comprehensiveness, duplication of companies and the inaccuracy of company details. It is clear that, taken in isolation, none of the sources could be relied upon to provide a comprehensive and accurate list of MNCs. In this context, Murphy (1997) posits the limits of many databases used in research and calls for researchers to be cognisant of the limitations of each of the databases and to carry out spot checks on each of the listings. Williams (1997) suggested that good practice in situations where no comprehensive list exists or where there are weaknesses in existing listings is to collate the population list from a number of different sources. Taking this as our point of departure we now detail how we constructed our population list and dealt with the deficiencies of existing databases.

Our first step was to contact the state agencies responsible for providing financial assistance and advice to both foreign-owned and indigenous companies. IDA Ireland provided a list of foreign-owned companies and Enterprise Ireland provided a list of Irish-owned companies. Both lists contained country of origin details and contact information, and whilst neither was able to provide specific employment figures, they were able to filter their database to provide us with lists of MNCs with more than 100 employees in Ireland. The IDA Ireland list contained 284 companies in total but this involved a relatively large amount of double counting, while the Enterprise Ireland list contained 27 Irish-owned MNCs.⁴

⁴ Other state agencies that provided lists included, Shannon Development Company, Údarás na Gaeltachta and Forfás.

Table 1: Summary of Strengths and Weaknesses of Business Lists/Databases Used

Name of Database/List	State Agencies (e.g. IDA Ireland, Enterprise Ireland)	Bill Moss Partnership Limited	Irish Times List of Top Companies	Kompass	Major Companies of Europe	Membership lists provided by two Irish bodies*
Strengths	<ul style="list-style-type: none"> - Provides contact details: address, telephone/fax number, website and contact person. - Provides country of origin detail. - Can filter database to provide MNCs with 100+ employees in Ireland. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - Provides contact details: address, telephone/fax number, email, website and contact person. - Provides employment figures for Irish operations. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - Provides contact details: telephone number, website and contact person. - Provides employment figures for Irish operations. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - Provides contact details: address, telephone/fax number, website and contact person(s). - Provides employment figures for Irish operations. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - Provides contact details: company address, telephone/fax number, email, website, contact person (s). - Can distinguish between whether a company is indigenous or an MNC. - Gives main activities of MNC. - Lists parent company and subsidiary companies. 	<ul style="list-style-type: none"> - Provides contact details: address and contact person.

Table 1: Summary of Strengths and Weaknesses of Business Lists/Databases Used (contd.)

Name of Database/List	State Agencies (e.g. IDA Ireland, Enterprise Ireland)	Bill Moss Partnership Limited	Irish Times List of Top Companies	Kompass	Major Companies of Europe	Membership lists provided by two Irish bodies *
Weaknesses	<ul style="list-style-type: none"> - Excludes non-grant aided/assisted MNCs. - Weak in listing MNCs in the services sector. e.g. LIDL, McDonalds, AIB. - Does not provide employment figures (either worldwide) but the IDA can filter database (see strengths). - Duplication. 	<ul style="list-style-type: none"> - Unable to provide listing of Irish-owned MNCs. - Unable to provide country of origin details for all MNCs on the list. - Does not provide worldwide employment figures. - Duplication. 	<ul style="list-style-type: none"> - Fails to distinguish between foreign-owned and Irish-owned firms. - Not all encompassing, companies included based on total turnover. - Does not provide worldwide employment figures. - Limited contact details provided (telephone number only). - Duplication. 	<ul style="list-style-type: none"> - Fails to distinguish between foreign-owned and Irish-owned firms. - Does not provide worldwide employment figures. - Duplication. 	<ul style="list-style-type: none"> - Not all encompassing, companies included based on sales, premium income or total assets. - Does not provide employment figures for worldwide and Irish operations, other. - Duplication. 	<ul style="list-style-type: none"> - Does not provide employment figures (either Irish or worldwide). - Fails to distinguish between foreign-owned and Irish-owned firms. - No details on MNCs main activities. - Limited contact details i.e. no telephone number provided for some contacts. - Duplication.

* Both of these institutions provided us with copies of their listings on a confidential basis and asked to remain anonymous.

Table 1: Summary of Strengths and Weaknesses of Business Lists / Databases Used (contd.)

Name of Database/List	Who Owns Whom?	International Financial Services Centre Companies	Business and Finance Top 5000 Companies	Irish Manufacturing Companies	Irish Companies Listed on UK Stock Exchange	Irish Stock Exchange
Strengths	<ul style="list-style-type: none"> - Provides contact details: company address. - Can distinguish between whether a company is indigenous or a MNC (i.e. has subsidiaries or not outside of Ireland). 	<ul style="list-style-type: none"> - Provides list of all companies operating in the IFSC. 	<ul style="list-style-type: none"> - Provides contact details: address, telephone/fax number, website and contact person. - Employment figures for Irish operations. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - Provides contact details: address, telephone/fax number, email, website and contact person. - Gives main activities of MNC. 	<ul style="list-style-type: none"> - List of all Irish companies trading on the UK Stock Exchange. 	<ul style="list-style-type: none"> - List of all companies trading on the Irish Stock Exchange.
Weaknesses	<ul style="list-style-type: none"> - Does not provide employment figures (either Irish or worldwide). - Fails to distinguish between foreign-owned and Irish-owned firms. - No details on MNCs main activities. - Limited contact details i.e. no contact person, no telephone number provided. 	<ul style="list-style-type: none"> - No other details provided other than a list of all company names operating in the IFSC i.e. no contact details, figures etc. 	<ul style="list-style-type: none"> - Does not provide worldwide employment figures. - Fails to distinguish between foreign-owned and Irish-owned firms. - Duplication. 	<ul style="list-style-type: none"> - Does not provide employment figures (either Irish or worldwide). - Fails to distinguish between foreign-owned and Irish-owned firms. - Duplication. 	<ul style="list-style-type: none"> - No other details provided other than a list of all company names listed on the UK Stock Exchange i.e. no contact details, no employment figures etc. 	<ul style="list-style-type: none"> - No other details provided other than a list of all company names listed on the Irish Stock Exchange i.e. no contact details, no employment figures etc.

Both lists suffered from a number of problems. First, by definition the lists contained only grant aided or assisted companies and thus excluded companies, which did not receive any assistance from the relevant agency. Second, while the list was strong on MNCs in the manufacturing and internationally traded services sectors, it was weaker regarding other areas of the services sector. For example, the listing did not contain foreign-owned organisations such as LIDL, McDonald's, or many of the major hotel chains, suggesting that MNCs operating in sectors such as retail, catering and hospitality may not make many of the common listings of MNCs in Ireland and thus are not represented in the extant research. Notable exclusions from the list of Irish-owned MNCs were the major Irish banks such as Allied Irish Bank and Bank of Ireland, which boast substantial foreign operations.

Next we contracted Bill Moss Partnership Limited, a well-established private consultancy specialising in sourcing company information. By giving them our strict criteria and using their sources they were able to provide us with a list of foreign-owned MNCs in Ireland but not of Irish-owned MNCs. Again this is an illustration of the difficulty in identifying Irish MNCs. This list contained a total of 406 foreign-owned companies but again this suffered from the problem of duplication. The grant aided listings and the purchased list were then amalgamated, keeping separate lists for foreign-owned and Irish-owned MNCs.

If one considers the discrepancy in the numbers of MNCs provided by the state agency listings and that provided by the private consulting firm, it is clear that any research drawing solely from the one source would have to be classified as unrepresentative because a very large number of MNCs were excluded from each list. In the case of foreign-owned MNCs, the list provided by the private consulting firm had an additional 118 companies to that provided by the state agencies. In addition whilst IDA Ireland listed fewer MNCs, their list included some 84 firms which were not on the list provided by the private consulting firm. Further, there is also a major discrepancy in the case of Irish-owned MNCs with our final population list of 62 MNCs being considerably higher than the list of 27 Irish-owned MNCs provided by Enterprise Ireland.

As we were conscious of the fact that there were a number of limitations with the sources used to date, and there were a large number of MNCs on the list provided by the private consulting firm that were not on the IDA Ireland listing and vice versa, a number of other secondary sources were used to check the accuracy of the master lists. This process of carrying out spot checks (cf. Murphy, 1997) and using a number of different sources (cf. Williams, 1997) is regarded as good research practice. Similar to the sources used in creating our master lists, there were a number of limitations in these databases/lists (see

Table 1 for greater detail). For example, while the publication *Major Companies of Europe 2005* (Crawford *et al.*, 2005) satisfied the study's key criteria, the list was not all encompassing because companies are included based on their sales, premium income or total assets. Furthermore, all of the other sources used did not meet at least one of the criteria set out i.e., the need to provide employment figures for both Irish and worldwide operations, as well as country of origin details. For example, the *Irish Times* list of *Top Companies*, whilst providing up-to-date Irish employment figures, did not include worldwide employment figures or differentiate between foreign or Irish-owned firms.

Where it was unknown if the criteria were satisfied, each company was examined individually to establish if it should be included in the population of MNCs. Initially, we used the Internet to check each company's website to establish if they satisfied the criteria. In carrying out this task, the problem of duplication in the listings became more apparent. As an illustration, our listing of foreign-owned MNCs included Johnson and Johnson, Vistakon, Janssen Pharmaceutical and DePuy. On checking websites we found that Johnson and Johnson owns the other three thereby giving this MNC a much stronger chance of being selected. However, checking websites also had limitations: some companies did not have a website, while others did not provide details on either employee numbers or country of origin. To overcome this, we used all other sources available and if we were still unsure we telephoned the company in question to establish its employment numbers and country of origin.

A number of other sources were identified but were not used for one reason or another. One such electronic source examined was the Dun and Bradstreet (eWow) database. This business information source is derived from the Companies Registration Office (CRO), the statutory authority for registering new companies in the Republic of Ireland. It provides some difficult to find information on companies such as contact details, employment figures and country of origin, as well as allowing researchers to trace a company's 'family tree'. However, while it is quite a detailed database, the private consulting firm did not recommend purchase due to a number of inaccuracies in the details provided. Given this recommendation, together with the prohibitive cost, we decided against purchasing it. The CRO was also contacted directly. However, they were unable to filter their database to show the particular information that we required. Similarly, the Central Statistics Office (CSO) was contacted but to no avail. They do not have information in relation to identifiable companies or organisations.

Although there was initially considerable overlap between the lists used, extensive cross-checking helped ensure that the final lists were as

comprehensive and accurate as possible. After applying the criteria and having cross referenced for accuracy a set of 470 foreign-owned MNCs and 62 Irish-owned MNCs was finalised.

V A REPRESENTATIVE DATABASE OF MNCs IN IRELAND

Our database shows 532 MNCs in Ireland according to the criteria stipulated above. Table 2 illustrates the ownership of these MNCs. As expected US-owned MNCs are the predominant form to be found in Ireland. Of all MNCs in Ireland 43 per cent are US-owned, followed by the UK at 19 per cent, European (excluding Ireland and the UK) at 18 per cent, Irish-owned at 12 per cent, and the rest of the world at 8 per cent.

When compared with the listings provided by the state agencies there are some interesting points to note. First, there is a significant difference in the total number of MNCs found in each of the listings. Second, there are some interesting variances to note regarding breakdown of nationality of ownership. For example, US-owned MNCs make up 59 per cent of the state agencies list but only 43 per cent in our list, UK-owned make up 19 per cent of all MNCs in our listing compared to 7 per cent in the state agencies listing, whilst Irish-owned MNCs make up 12 per cent of our total population but only 8 per cent of the total population provided by the state agencies.⁵ From these findings one can see that, for example, UK-owned MNCs have a much stronger presence in Ireland than is evident in the established listings. We suggest that this is probably due to the presence of many UK-owned MNCs in the non-grant aided services sectors, especially retail (e.g. B&Q, Boots and Marks & Spencer) and financial and business services (e.g. Capita Life and Pensions, HSBC and Coyle Hamilton Willis). The difference in the numbers of Irish-owned MNCs between our listing and that of the state development agencies is particularly noteworthy. One might expect Irish firms to have been in receipt of funding and/or assistance from the relevant agencies prior to internationalisation. However, our findings suggest that a substantial number of such firms do not seek such assistance or advice.

The size profiles of our listing are shown in Table 3. As one can see, MNCs in Ireland are relatively small with only 107 of the 532 MNCs identified in the population employing 1,000 people or more. The majority can be categorised as small to medium sized employers with 226 MNCs categorised in the 100–249 employee bracket, 108 MNCs in the 250–499 bracket and a further

⁵ These variances are in fact greater than shown above due to the problem of duplication in the state agency listings.

Table 2: *Population of MNCs in Ireland by Ownership*

<i>Nationality of MNC</i>	<i>Our Listing⁶ Number of MNCs</i>	<i>State Agencies Number of MNCs⁷</i>
Irish	62 (12%)	27 (8%)
United States	226 (43%)	193 (59%)
United Kingdom	103 (19%)	24 (7%)
European (EU member states excluding Ireland and the UK)	96 (18%)	61 (20%)
Rest of the world (ROW)	45 (8%)	21 (6%)
Total population of MNCs	532	326

80 MNCs employing between 500 and 999 people each. There were also 11 MNCs which we could only assert that they employ 100 or more in Ireland but could not establish more accurate employment figures. This once again reinforces our argument about the incomplete nature of existing company databases used for research purposes.

Turning to country specific detail, we find that Irish-owned MNCs represent the highest number of MNCs employing greater than 1,000 people in Ireland, followed by the US and UK, respectively. Although one cannot dispute the importance of US MNCs as employers, it is interesting to note that in excess of 50 per cent of all US MNCs operating in Ireland are in the small to medium-size bracket.

Table 3: *Size of MNCs in Ireland by Ownership*

<i>Employee Numbers in Ireland</i>	<i>Irish</i>	<i>US</i>	<i>UK</i>	<i>EU</i>	<i>ROW</i>	<i>Total MNCs</i>
100–249 employees	4	105	45	53	19	226
250–499 employees	8	45	23	22	10	108
500–999 employees	8	39	12	13	8	80
> 1000 employees	42	31	22	6	6	107
Other ⁸	–	6	1	2	2	11
Total Population of MNCs	62	226	103	96	45	532

⁶ Our listing refers to all the sources we used in developing the population of MNCs. These include, IDA Ireland; Enterprise Ireland; Shannon Development; Udarás naGaeltachta; Bill Moss Partnership Limited; Irish Times list of Top Companies; Kompas; Major Companies of Europe publication, Who Owns Whom, IFSC company listing; Business and Finance, Irish manufacturing companies database; Irish and UK Stock Exchanges and two membership listings provided by two private sector Irish bodies. Please note that these sources are used for the subsequent two tables, 3 and 4.

⁷ Note that these figures include 'double counting' of firms. State agencies used were IDA Ireland, Enterprise Ireland, Údarás naGaeltachta and Shannon Development.

⁸ We are unsure of employee numbers but believe from our work that they employ more than 100.

Not surprisingly MNCs in Ireland are principally located in the services and manufacturing sectors. It is interesting to note that there are now more MNCs in services than in manufacturing. Of the total population 291 operate in the services sector, 238 in manufacturing, while the final 3 MNCs operate in the primary sector. However, while the services sector is the largest collectively speaking the 'Engineering, computer, electrical and medical equipment manufacturing' is the largest single sector making up just over 23 per cent of the total population of MNCs in Ireland. This is followed closely by the 'financial and business services sector' which encompasses just under 20 per cent of MNCs. 'Chemical and pharmaceutical manufacturing' account for only 39 MNCs which is just two more than the number of retail and wholesale MNCs operating here. Despite the largely similar number of MNCs between these two different sectors little or nothing is known about management practice in the retail/wholesale sector relative to the chemical/pharmaceutical sector.

Services based MNCs make up a significant proportion of the population across all of the different country classifications, with the financial and business services, and information and communication services sectors boasting the largest numbers. We also see the substantial number of US-owned manufacturing MNCs, whilst the number of Irish and UK firms operating in more 'traditional' manufacturing sectors is also very significant.

Table 4: *Industrial Sector of MNCs in Ireland by Ownership*

<i>Sector</i>	<i>Irish</i>	<i>US</i>	<i>UK</i>	<i>EU</i>	<i>ROW</i>	<i>Total MNCs</i>
Primary	–	–	1	1	1	3
Manufacturing – food and beverages, non-metallic minerals, paper, plastic, publishing and printing, clothing	18	27	17	8	5	75
Manufacturing – engineering, computer, electrical and medical equipment	4	79	4	26	11	124
Manufacturing – chemical and pharmaceuticals	1	20	3	9	6	39
Services – financial and business	9	50	27	19	6	111
Services – information and communication technology	2	25	8	5	3	43
Construction	7	–	3	3	2	15
Retail and wholesale	9	5	19	3	1	37
Transport and utilities	9	3	6	8	3	29
Other services	3	17	15	14	7	56
Total Population of MNCs	62	226	103	96	45	532

VI CONCLUSION

In reviewing the available literature on MNCs in Ireland and internationally it was clear that a number of critical deficiencies characterise the extant research. In the Irish context, we firstly note the failure of studies to date to achieve adequate representativeness of the population of MNCs in Ireland, largely overlooking non-grant aided MNCs. Second, we point to the lack of research into Irish-owned MNCs – research to date has focused primarily on foreign-owned MNCs. Collinson and Rugman (2005) argue that there is an unrepresentative depiction of management research in MNCs internationally and our work supports this view.

The authors propose that researchers need to place greater emphasis on how population listings of companies are constructed. It is important that sufficient time is given to ensuring such listings are accurate of the population – most critically when the findings are being generalised to larger populations. We have pointed out a number of weaknesses that characterise a number of the commonly used sources used in academic research.

Our goal was to address these deficiencies and to develop a more accurate and comprehensive sample frame. This paper has illustrated the challenges and difficulties involved in developing such a database and the problems associated with various listings currently available. These difficulties include lack of comprehensiveness, duplication, and inaccurate details. We have documented the steps taken to overcome these problems, using as many sources as possible. These demonstrate how the sources were used and combined to maximum effect to create a 'master list'. It also points to the importance of relying upon a number of databases when deriving listings of companies. Our work demonstrates that none of the established databases can be classified as complete and reliable. We believe our listing of 470 foreign-owned MNCs and 62 Irish-owned MNCs represents the most comprehensive listing of MNCs in Ireland to date.⁹ We hope that this work will provide a foundation on which scholars in the field can improve the representativeness of research on MNCs in Ireland.

⁹ The authors wish to point out that due to copyright and data protection issues relating to some of the sources used we are unable to publish the database of companies. However, we would be happy to hear from scholars in this field and help in any way we can.

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