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**HIGHER EDUCATION AND REGIONAL DEVELOPMENT  
- A CASE STUDY OF SOUTH EAST IRELAND**

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## ABSTRACT

The primary purpose of this study is to test the hypothesis that a region without a university will be inevitably trapped in a 'vicious spiral' of progressive relative decline both in local skills levels and in economic performance, i.e. that the lack of a university is an unsurmountable barrier to regional development.

Research in the 1980s observed the connections between urban development and universities, analysed trends in the location of mobile industry, and in particular technology-based industry, and highlighted the apparent advantage to such industry in locating near to universities. Extensive university/industry interactions favourable to the fostering of local industrial clusters were indicated. Enthusiasm in the 1980s for the 'Silicon Valley' model was superceded by the early 1990s by disenchantment with higher education as 'magic bullet' for all urban economic ills.

This thesis critically reviews this literature, and proceeds to examine the case of South East Ireland, a region with no university, against its findings. The presence of a steady supply of highly-skilled graduate employees is identified as the most critical factor which connects universities with industrial and other development. The processes which form the graduate sector of the workforce are therefore investigated both in the South East of Ireland and in a control case which has a university and science park, the Mid Western Region. Migration trends of students and graduates are investigated by means of interview and questionnaire. The results are analysed to determine their implications for the case study region's development potential.

The main findings of the study are that, while empirical studies have not confirmed the idealised image of earlier research, the evidence nevertheless supports the view of the university as a pole of development. The most important contribution of the university to the development of its region is found to be in raising the skills level of the workforce. The case study area is shown to have a profile of low participation and low graduate employment along with unemployment levels which are amongst the highest in Europe. This profile is correlated with the limited degree-level education provided within the area and is associated with a trend to progressive decline in relation to regions with universities. A programme of measures to enhance conditions for regional development is proposed.

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## **Introduction**

### **The South East Region**

South East Ireland consists of five counties, Kilkenny, Tipperary, Wexford, Waterford and Carlow, along with the County Borough of Waterford. It is a Planning Region for such functions as tourism, health, Industrial Development promotion and a Sub Region for the purposes of European Community funding.

The Region has a relatively good urban structure, with five towns with population above 10,000, the largest of which, Waterford, has a population of approximately 50,000. Many of its rural areas are relatively highly populated, particularly in Wexford and Kilkenny, with up to 40% of population living outside towns.

The Region has three international ports, Waterford, Rosslare and New Ross, and is Ireland's closest region to mainland Europe, providing a faster transportation route than the UK landbridge route.

From 1987, when the South East Regional Development Organisation was abolished, to 1993, there were no regional administrative bodies in Ireland. The new Regional Authority consists of deputised Local Authority elected representatives, and has a limited monitoring and co-ordinating function.

Approximately two thirds of Ireland's Class One lands are in the Region and its agricultural sector is important as a producer and employer. The economy of Waterford City is predominantly based on manufacturing. Relative to other urban centres in Ireland, Waterford has a low percentage of service and administrative functions and the level of technology in industry is low, with no significant high technology sector. The main strengths of the Region are its agricultural sector, its tradition of manufacturing and craft production, its port infrastructure, its good environment and its rich heritage of historic remains.

After a population increase in the 1970s of approximately 16%, a long term pattern of population loss has resumed, with simultaneous emigration and falling birth rate. The population at present is 'bottom heavy' with the 'bulge' of the 1970s moving into the

workforce until the 2010s. Unemployment in the Region is the highest of any Region in Ireland, at over 20% of the workforce.

A competitive relationship between the County towns may have held back the Region's lobbying strength relative to the other Irish regions, which are all dominated by a single large urban centre. A number of service and infrastructural functions fulfilled in Cork, Limerick Galway and Dublin for their respective regions are not available anywhere in the South East. The lack of a university in the region has been identified by a number of bodies within the Region as leading to retardation of growth in employment and economic development.

The overall profile of the South East is one of underperformance and stagnation, identified in numerous reports. The purpose of this study is to focus on a single factor which has been pointed to as a possible cause of the Region's poor performance. The lack of a university in the region has been associated with low employment levels, weakness in the service and high technology sectors and high levels of emigration. This study focusses on human resources, in particular the highly-skilled element of the workforce, as a possible key factor which links higher education with socio-economic development.

## CHAPTER ONE

### HIGHER EDUCATION AND REGIONAL DEVELOPMENT

#### Statement of Problem

A number of issues arising from the geographical distribution of higher educational institutes, and in particular of universities, have been the focus of studies internationally in the fields of planning and regional development. Both utilitarian (economic) and egalitarian (social) emphases have featured in such studies. Extensive discussion of the potential of universities as 'poles of development' has taken place over the past two decades. Studies of the location preferences of mobile industry have suggested that a nearby university is a prerequisite for certain types of industrial development. State investment in higher education has increasingly been justified in terms of direct and indirect benefits to economic development.

A separate body of research undertaken in the context of educational studies and social geography has flowed from the implicit viewpoint that access to educational opportunity at all levels should be equal, irrespective of sex, locality of origin, religion, class etc. and seeks generally both to identify bias and to find solutions to such bias. Spatial bias has consistently been perceived as a problem in this context. There is much accumulated evidence gathered to suggest that proximity of residence to the nearest university centre strongly effects both likelihood of applying and probable success of application of the prospective student (Rudd, *Whose Children Go To University*, 1984). This general approach to impacts on economic equality in relation to urban infrastructure and resources is also represented within the body of geographical studies (e.g. Harvey, '*Social Justice and the City*', 1973).

Empirical evidence reported both in previous case studies and in research carried out as part of this study suggests that the extent to which a university has a positive impact upon its locality varies considerably from one case to another. The assumed model of high technological linkages has not been born out consistently in the results of all empirical studies. The precise nature of impacts would also be expected to vary considerably from one locational context to another. In some contexts the University acts as a 'portal out', facilitating a regional 'brain drain' and in others as a 'portal in' - absorbing an influx of students who join the local workforce after graduation. The relevance of the courses of study and research capabilities to the region within which they are located, the quality of teaching and research within the university and within key faculties, and the ethos of the institution

regarding its connections or responsibilities to the region within which it is located are factors which may come into play, in addition to the size and relative economic strength of regions. The numbers of available graduates with the skills needed by mobile industry have been suggested as relevant, as is the availability of facilities useful to high technology industry.

Whilst numerous studies have investigated various cases of 'high tech clusters' involving universities and/or science parks and high technology industries, the question of whether a healthy local economy is possible in the absence of such an institution has not been similarly investigated. Whereas the profile and performance of regions which benefit from the presence of universities has come under intensive scrutiny, the converse impacts on the developed, developing or 'lagging' region which has no university, in an international economy of highly competitive urban centres, has not been subjected to systematic study. Investigation of such regions and comparison of their performance with 'university regions' would assist in isolating the features which can be ascribed to the presence of a university and would facilitate a deeper and more wide-ranging understanding of how the university interacts with local conditions.

### **Objectives of study**

In this thesis a comparison is made of the role of higher education in South East Region's largest city, Waterford, and in Limerick, in the Mid West planning region, a city of comparable size and location, which has a twenty year old university with a clearly defined development mission. The South East of Ireland is one of the few remaining regions in Europe which has no university and was self-selecting for study in that the issue is frequently raised by different sectors of the community as a problem. Unemployment levels in the South East are at the highest levels per capita Ireland and amongst the highest in Europe.

### **Methodology**

This study investigates different categories of linkage between higher educational centres and regional development through review of literature and through case study. The presence of appropriate skills in the work force and amongst local entrepreneurs is identified as the key issue for local development. Processes which affect the formation of the graduate-level component of the workforce are investigated in detail through statistical review, by questionnaire. Fieldwork undertaken as part of this study included survey undertaken to

establish whether the institutions under case study are acting in the 'portal in' or 'portal out' mode, and how this is effecting the local labour force.

## **Proposals**

The South East region has traditionally relied on its agricultural strength and on traditional manufacturing. Problems of restructuring have been identified in previous studies, in particular those by Bannon and Fallon (*The Development of Waterford as a Regional Service Centre*, 1985) and a programme of measures to redress deficiencies proposed. In the context of the completion of the first programme of the reformed Structural Funds in the mid 1980s a number of measures were proposed with the aim of improving the region's deficient economic capabilities: part of this study comprises a preliminary review of implementation of these measures.

The reasons for the failure to implement effective education and training measures for the South East are considered, in the context of the general policy approach taken by the Irish Government to the issue of higher education, and to the disbursement of European Community funding. The results of the study are reviewed and a framework is suggested within which relevant measures could be identified and implemented to enable the Region to address its deficiencies and exploit its assets.

## **Structure of Study**

The study is presented in the following format:

**Chapter One** sets out the nature of the problem under investigation. The objectives of the study are described and the methodology and research techniques to be used are outlined.

**Chapter Two** sets out the approach taken by the author with regard to the relation between theory and practice in planning.

**Chapter Three** sets out the methodological approach and research techniques of the study, which include extensive review of literature, case study (including analysis of published statistics), survey by questionnaire and study of policy. The strengths and weaknesses of the case study method are discussed and fieldwork is described.

**Chapter Four** reviews literature concerning the role of the university as a pole of local development. the location requirements of mobile industry and the conditions required for successful establishment of indigenous enterprises. Studies in spatial inequality in relation to participation in higher education and previous studies of the Waterford area are also reviewed.

**Chapter Five** draws conclusions on the findings of previous studies. In particular the presence of high level skills in the workforce was identified as a primary factor. Other issues of relevance to the case study are highlighted.

**Chapter Six** Taking the presence of a highly-skilled element in the workforce as the critical factor, the conditions affecting the case study area are reviewed in detail. Following chronologically the processes which form the graduate component of the labour force, the factors determining the levels of graduate employment in the region are analysed with reference to literature and published statistics.

**Chapter Seven** reports results of fieldwork undertaken in order to examine further the formation of the graduate workforce with respect to the case study area. Comparison with Limerick, a 'university area' is undertaken. Graduation migration trends and motivation are investigated.

**Chapter Eight** draws conclusions on the implications of findings for the case study area. General implications are also reviewed.

**Chapter Nine** reviews previous programmes proposed to promote development in the South East along with general commentaries which are of relevance to the practical problems under consideration. Recommendations on general approach and on a number of specific measures are made, seeking a responsive rather than prescriptive approach.

## CHAPTER TWO

### THEORY AND PLANNING

#### Introduction

Planning practice consists of the application of theory relevant to land use to man's social existence. As a body of knowledge, 'planning theory' has as yet not developed convincing autonomous abstract validity. Attempts at achieving a discussion of 'pure' rather than 'applied' planning have immediately reverted to ontology or epistemology, or political theory, with no features to distinguish it clearly from the ontological investigations of philosophy or political science. The underdeveloped nature of planning theory, some of which, as Faludi suggested (*Planning Theory*, 1973) bears the hall-mark of improvisation to establish the academic credibility of undergraduate planning courses, contrasts strongly with the apparently highly significant potential which planning practice has for human society. The universality to which planning aspires, offering an all-encompassing framework for intervention in both technical and social aspects of man's activities, has been frequently been pointed out (e.g. Roberts, 1974, Cullen, 1984). A consequence of this universality is that planners tend to borrow everything and own nothing in terms of theory, having reference to a wide range of specialist theories developed in other disciplines. In addition, the complexity of the human processes which are the object of planning practice and which inevitably involve qualitative issues is forbidding, and is not always readily amenable to quantitative research.

The limitations in the sphere of planning practice and its reliance on a borrowed repertoire of theories mean that the discussion on planning theory has had little day-to-day relevance to most practitioners. A constant feature of the relationship between planning practice and 'planning theory' in the past 25 years has been the relatively insignificant impact of the theoretical debate on professional planners. A number of writers have drawn attention to the situation of 'theoretical pluralism and collective ignorance, whereby the evidence is that most practicing planners proceed with only very crude theoretical tools, and indeed, planning theory is also perhaps at an embryonic stage (Cullen, *Applied Urban Analysis*, 1984). The limitations of planning theory may be attributable to the narrow range of planning activity open to most practitioners: the body of knowledge developed through planning practice being restricted by the context within which planning is practiced.



The vast majority of practitioners in the U.K. and Ireland operate within the context of local administration and its legal framework. The 'neutrality' of planning practice within this 'local democracy' context also acts to curtail any vigorous debate at the 'coal face' of planning, where the assumptions are fixed by the legislation and elaborated by Departmental advice. Many theoreticians have limited experience of planning practice. Little status or excitement in the academic world can be gained through repeated investigations of development control and development plan making processes. The question arises therefore as to whether planning theory will ever progress beyond an embryonic state.

The development of planning historically has occurred comparatively recently as urbanisation raised the complexity, speed of change and risks inherent in man's social organisation to an extent where highly visible failures either to maximise the 'common good' or even to safeguard the medium/long term aggregate gains of property owners as a group were taking place. The evident inability of unconstrained market forces to resolve issues relating to location, in particular uniqueness and incompatibility, along with the rapidly developing extent of society's impact on the natural world and accompanying positivist and idealist philosophy, were the ground for the inception of the activity of town planning. The intervention of planning in capitalist economies has consequently involved some limited constraints on immediate market forces and on individual rights over land in 'the interests of common good' - or of the longer term interests of the market itself.

### **Constraints on development of a planning theory**

Planning's ambitions within this context are inevitably constrained by economic and political context. The more optimistic and ambitious outlook of planners in the 'long boom' waned with the recession in the 1970s which brought a reduction in resources for practical intervention such as housing programmes, in tandem with a lowering of morale following loss of public confidence in the claims of planners to know what is 'the common good'. The currently restricted field of operation for planning is also coming under growing tension as a result of the globalisation of 'planning' problems. The internationalisation of the economy and the parallel globalisation of land use problems (particularly with regard to 'bad neighbour' issues such as nuclear and hydro power and the use of natural resources), means that increasingly planning problems have solutions which cannot be delivered by nation states. Where the market economy has been only marginally constrained by planning, resource wars, mass starvation and urban decay are accompanied by serious environmental

threats to life on the planet, suggesting that the current model of western urban and social development is unsustainable. In parallel, the collapse over the last five years of those nation states which had attempted to displace or subordinate the market with forms of centrally-planned economy also has unresolved consequences for theory. At a period in history when science and technology have developed to a stage where, rationally applied to resource development and use, they have the apparent capacity to greatly improve quality of life and environmental husbandry, the internationally planned use of such technology does not appear to be an attainable option.

In seeking answers for problems of urban living and land use, planners are therefore increasingly likely to find answers which go beyond the limitations of the social structures within which they serve. Planning theory has not yet responded to this dilemma. An ontological debate that was generally perceived by the mid 1980s as having reached a fruitless deadlock has receded from prominence. Much planning theory is now preoccupied with attempts to produce generally applicable research findings and formulae, most frequently with the objective of marginally improved competitiveness in urban management or in market decisions such as business location decisions.

In summary, the youth of planning as an activity, the social, ideological and legal restrictions on it as an activity, the lack of interconnected theory and practice, and the nature of the planning activity as a generalist scoping and co-ordinating practice for the application of theory to development, all act to inhibit the gestation and birth of planning theory. This thesis does not attempt to resolve the impasse, and would not claim to move planning research beyond its present stage of development. The writer's view is however that many further incremental gains in knowledge of urban processes will be required in order to advance both theory and practice, and that there are no 'quick fixes' available to cut short the processes of accumulation of basic understanding on which any science or profession rests.

To proceed with planning research we need to make some evaluation of the stage which has been reached in the interrelated development of theory and practice. If it is accepted that a major part of the difficulty of planning theory arises out of the currently limited nature of planning practice, then the conclusion must be that a prerequisite for a more developed planning theory is that planning should broaden its sphere of practice, and in particular sever the umbilical cord with its restrictive state/bureaucratic origins.

## **Planning in Ireland**

The planning system in Ireland appears to provide opportunities for a certain degree of innovative practice for two reasons. One is that the planning system and legislation in Ireland entails a strong development element. It is a feature of young states that the local authority may have a role as a development agency and this role is intrinsic to Irish planning legislation (McCarthy, 1992). While this role is currently restricted by the acute centralisation of Irish administration and policy-making, a certain local dynamism can be expressed through the local authority as it enters the sphere of development proper. Secondly, the extreme constriction of local authority initiative by centralised control of finance and decision - making has resulted in the inception of some limited 'unilateral' development initiatives that have opted out of reliance on state funds and rest directly on local financial contributions. Thus, one of Europe's most centralised states has begun to see the emergence of a small number of community planners - individuals employed by local communities at their own expense to encourage and co-ordinate the development of their areas, and also of untrained local development committees who take on a planning role in their localities. The forcing ground for these developments is chronic unemployment and emigration from both urban and rural areas, with over 20 % of the workforce unemployed and the halving of population of many rural areas by emigration since 1941.

## **Relevant theories**

Whilst it is beyond the scope of this thesis to resolve the problems outlined above, consideration must be given to those theories relevant to current planning practise and to this thesis. The bodies of theory which are currently most relevant to town planners are engineering/public health and safety knowledge, urban sociology/social geography, ecology and economic theory, social history, urban morphology, aesthetics/conservation and urban design. Planning methodology generally makes use of techniques derived from the above disciplines. This thesis concerns issues of regional development which are often addressed through theories of economics, urban and regional studies or 'social geography' and urban planning. It also makes reference to education theories and to sociological approaches.

Standing in a different relation to planning activity are those political, and philosophical theories upon which such activity rests, and which in particular shape the goals and instruments of planning practice. Utopian theory, the Ursatz of planning theory, still underlies virtually all approaches to planning practice. An assumption of utopianism is the

perfectability of humanity and of the works of humanity. The rationale of planning practice as an activity is broadly expressed as theoretical determinism or utilitarianism. Utilitarian theory, as propounded by Jeremy Bentham in the 19th Century, is considered by some theorists to be the philosophical basis of planning practise. The essence of utilitarianism is the view that our actions and thus laws and plans adopted by governmental authorities are those which can be shown empirically to engender the greatest happiness of a given population. The utilitarian principle of social justice is thus the principle of maximising happiness - the common good. These ideas still provide a rationale for most planning practice and have yet to be superceded convincingly.

The issues discussed here are relevant to this thesis, in that it is dealing with urban development problems which cannot be solved within the confines of the local planning and development system, or within the boundaries of nation states. The fierce international competition for inward investment, as is experienced for example between Ireland and Scotland at present, has implications for the urban development of all competing countries. To find a means of intervention which contributes to local development, but not at the expense of a competing regions with similar problems would be the ideal goal.

## **CHAPTER THREE**

### **METHODOLOGY AND RESEARCH TECHNIQUES**

#### **Introduction**

This thesis originally arose as a result of observation of 'symptoms' of chronic disfunction in socio-economic development of the South East Region of Ireland, which include a very high rate of unemployment along with urban stagnation and emigration. The objective of this study is, by focussing on higher education as a key issue, to probe the interrelation of these phenomena and to identify the most appropriate measures to enhance the region's economic and social potential. In so doing, by setting the case study in the context of previous empirical work and by relating findings to national and regional economic trends, it is the aim to deepen understanding of factors which affect lagging development in peripheral areas.

In response to the problems of development in the South East the provision of a university has been posited as a solution by both the local community and by previous researchers in the 1980s. The theoretical context was a period of fashionable interest in higher education as promoter of local development. In the absence of a university, or of a plan to provide one, a number of 'substitute' measures to increase local technological capacity were put in place. Predictions were made in the mid 1980s regarding the likely future economic and social performance of the region if it continued without a university. Since the 1980s, the widespread enthusiasm by writers for the idea of the university as a pole of development has waned and the tendency of researchers is to react against this enthusiasm, taking a less optimistic view of the potential of universities to have profound effects on their local environment.

#### **Case Study**

The thesis aims, in relation to the case study, to test the hypothesis that without a university the region will inevitably undergo decline relative to regions which do have universities. The case study in planning has been widely applied, particularly by practising planners. Experience dictates that the only entirely predictable and universal characteristic of any location is its uniqueness. A different uniqueness is also a function of each moment in the being of each location. Whilst there is certainly value in attempting to establish general laws or even common tendencies of urban development, the planner's intervention is usually made into a singular location in a particular moment. Furthermore, the complexity and

uniqueness of urban phenomena are not easily manipulated so as to necessarily allow for generalised statistical work which produces meaningful and replicable results. The positive aspects of case study are therefore that it permits investigation into the interaction of specific factors and of the operation of causes and effects, even if only in relation to a single event or location, in a wholistic fashion.

The weaknesses of case study as a method have been widely discussed (e.g. Bracken (1981), Cullen (1984) and Bell (1987) ). Primarily, its 'one-off' character limits its potential, and means that it rarely can purport to the discovery of general laws. Whilst laboratory standard control for variables is not achievable in studies of urban processes, with case studies particular care is needed to have regard to variables and unknown elements when relating one case to another, or to a general trend, and to make the best feasible attempt to separate common and unique features of the case. Bell (1987) makes the point that what can be offered by case study is not generisability but relatibility. It is intended that the case study should offer a sufficiently cogent and detailed analysis of the case to be relatable to other similar instances, and to general trends identified by statistical analysis. The practice of drawing general conclusions from case studies is nevertheless widespread in regional studies. This practice contains serious flaws unless done with the utmost wariness. Case studies should never be isolated from their wider historical context, and researchers should maintain awareness that the conditions portrayed in a case study are not necessarily replicable. This problem is discussed further in the following chapter in the context of literary review.

From the point of view of the development of planning, the case study is nevertheless essential in that it permits analysis of the interaction of specific processes in time and space. Factors taken into consideration in this case study include both objective matters, such as location and the requirements of industry for profitable production, and also subjective factors, such as environmental preferences of students and graduates and cultural goals. The empirical work associated with case study opens the doors to an influx of information which can not always be anticipated by deductive theorising or by large-scale quantitative analysis, and sometimes forces re-evaluation of assumptions. In the attempt to separate common and unique features of the case, new hypotheses may be developed and subsequently tested. In this case, the migration trends of students and graduates is seen as a critical barometer of local development and is investigated in depth.

The case study has been described as 'An umbrella term for a family of research methods having in common the decision to focus on a single instance (Adelman et al. quoted by Bell,

1992). The methods of study adopted consisted of local and national research, including collation and review of available statistical data and relevant literature, along with semi-structured interviews and survey by means of questionnaire. Further description of survey work described below are given in Chapter 7 below.

### **Review of previous studies**

Firstly, the development role of the university as considered in this thesis was defined. Relevant literature in the fields of regional planning and educational studies were then reviewed. Four categories of research were identified which concern the role of the university as a pole of development. Examples of these categories are reviewed in detail, starting with de Meirleir's 1988 paper 'Science and Technology Policy and Economic Social Cohesion' which sets out the procedures of location selection consultants and presents an analysis of the research potential of regions at different stages of development. A evaluation carried out by Eade in 1991 of a US government programme of intervention to foster university involvement in local development and a study by Schachar and Felsentein of linkages between universities and their regions in Israel and at Cambridge, which considers impacts on firm formation and clustering were then assessed. The results of a study by Van de Meer, 1992, '*Local Knowledge as a Source of Prosperity*', which deals with changing policy and with destinations of graduates was also considered. Finally, three studies by M.J. Bannon in which proposals are made for the development of the Waterford area are examined. The second part of the chapter reviews literature concerning issues of spatial equality with reference to the location of universities. These studies investigate the connection between proximity to a university and participation. A number of empirical studies into location factors affecting mobile investment were also reviewed, and a table of 'primary' i.e. essential, attributes was compiled.

### **Fieldwork**

It was concluded through analysis of previous studies that input into the graduate workforce is the critical impact of higher education to regional development. Without a significant and steady supply of graduate labour, both indigenous industrial and commercial development and the ability of a region to attract inward investment is impaired. The formation of the graduate component of the workforce, and in particular, student and graduate migration emerged as key themes which required further investigation. A questionnaire was submitted to a sample of students from both the Waterford Regional Technical College and from

Limerick University. Information sought included origins, reasons for choice of college and expected destination on graduation.

A graduate sample from the same cities, from the 21-25 age-group, was also surveyed by means of questionnaire. Place of origin and place of higher education were investigated, along with motivation regarding place of first employment. Links between Limerick University and local development are reviewed. A further postal questionnaire was carried out nationally to assess the extent of any premium attached to house values as a result of proximity to a university or RTC, so as to measure the perceived value of these 'locational goods'. A descriptive analysis was then carried out of questionnaire results. The effect of the higher education grant structure in skewing attendance patterns was noted as a significant factor, as was the effect of parental role models. The predominant factor in relation to graduate and student migration, and therefore to the formation of the graduate workforce, was found to be employment, earnings or availability of student grants. This was resulting in the migration of the majority of graduates Dublin or out of Ireland. A tendency was also found for a significant proportion of students and graduates to seek to study and work in their home area, if economic opportunity existed to do so. The implications of the findings for regional development both in the Mid West and the South East were assessed.

## **Conclusions**

Conclusions, both general and in relation to the case study are presented. Based on the conclusions arrived at in the course of the study, proposals are made to address the causes of lagging regional development in South East Ireland. Reasons for inaction on earlier development proposals are discussed. Proposals are made for a framework within which solutions may be generated to resolve the problems identified in the thesis. The most common strategies introduced to address higher educational and technological deficiencies are addressed and a number of specific measures are suggested with respect to the study area.



## CHAPTER FOUR

### REVIEW OF LITERATURE

"Much work exists suggesting that the university is a particularly important information source for high technology firms and that efficient use of this information network is enhanced by close physical proximity between local high technology activity and the university " (Premus, *The Strategic Role of University Science Parks*, 1986)

"A wealth of studies exists all of which report very few benefits arising from the agglomeration of industry close to university. There is in fact very little empirical evidence of linkages of any meaningful sort between university and the high technology companies in their vicinity" (Joseph, *Technology Parks and their contribution to the development of technology complexes in Australia*, 1989)

#### **Introduction**

The interpretation of empirical evidence regarding links between universities and their local economies, as can be seen above, has differed, with views moving from enthusiasm to scepticism within in a small number of years. This chapter sets out the research context within which the case study is addressed. Firstly, the role of the university in regional development is defined. Relevant literature concerning the role of the university as a pole of local development is then reviewed. Connections indicated between universities and location decisions of mobile industry, the establishment of high technology clusters and of indigenous SMEs (small manufacturing enterprises) are investigated. Concerns of researchers are shown to include competitive advantage of regions and locational advantage to industry. Conclusions are drawn in relation to existing empirical work relevant to this thesis, and a review is made of shifting emphases in theoretical approach.

#### **The role of the university**

The development role of a university is generally conceived to comprise a range of direct and indirect impacts on local socio-economic development, the effects of which would be indicated in increased employment, prosperity and quality of life. Eade ( *The Role of Universities in Local Economic Development*, 1991 ) raised questions regarding the way the university sees itself in the local community and how the community perceives the university. He expressed an ideal relationship between university and community as "The university

which uses its resources to enhance the capacity of the local community to obtain the type of development which it desires." This definition is very limited. An ideal goal of university/regional linkage would be to facilitate both the full and sustainable exploitation of the area's resources and also the symbiotic development of new and unique knowledge which has a special connection with the assets, history and qualities of the region. This thesis, whilst briefly considering other aspects of the role of the university, takes as its central concern the impact of the university on the economy of its region.

For the purpose of this thesis, the main roles of tertiary education as it has developed historically are defined as follows. Firstly, the original purpose of universities, (still considered by many academics to be their primary task), is to develop and transmit knowledge 'for its own sake', and to act a repository and source of culture and science. Secondly, the university offers the resources for the educational development of the individual. Clancy, in his 1994 paper 'The future of Higher Education in Ireland' points out that higher education, quite apart from its intrinsic value in terms of access to culture, knowledge and enriching experience is also a 'positional good' which functions as an allocative mechanism to the labour market and to life chances generally. Thirdly, the university has the role of providing trained personnel to satisfy the requirements of the local, national and international labour market, to undertake commercial research contracts, and provide a resource base for industry and government. Fourthly, the university has a role as a potential pole of local economic development within its hinterland. Of the roles set out above, all still have relevance, but an international shift in education policy emphasis occurred in the 1980s and 1990s towards a utilitarian approach, emphasising market needs.

Some explanation is also required of the terms 'local' and 'regional' development. The question of the area which is effectively the 'hinterland' or locality of a university is discussed in more detail in the body of this text. For the general purpose of this thesis, 'regional' and 'local' development are taken as interchangeable, having the meaning of that area within which personal contacts on a daily basis are normally and regularly feasible.

A 1994 OECD report (quoted by Clancy, 1994) argues that the expansion of education and training systems over the post-war period has been perhaps the major socio-economic trend of OECD countries that will be chronicled by historians in future years. The report argues that the trend has been so widespread and prolonged that it has almost become perceptually invisible, and is not recognised for the outstanding social change which it is. This quantitative change has taken place in the context of university institutions which are

themselves in some cases unchanged in their educational outlook, teaching methods and institutional structures for 400 years or more. Expansion has clearly been consequent on profound economic and social change, which has brought into question the liberal/academic model of university which was envisaged as catering for a small elite class. This move from elite to mass education was conceptualised by Trow (1974) quoted by Clancy(1994). "The essence of Trow's conceptual scheme was that higher education systems in most countries would follow a development sequence similar to that of the United States, passing from elite systems to mass systems and from thence to universal systems." Trow's model asserts that quantitative changes tend to bring a whole range of qualitative changes in organisation, academic practice and selection. In order to properly grasp the driving forces of this change it would be necessary also to identify the economic and military imperatives which drove the competitive expansion of higher education in the post war period, expressed crudely as 'what Ivan knows that Johnny doesn't know'.

### **Trends in Research**

Mass secondary and tertiary education can only arise in an economy where intensive mass agricultural labour is a thing of the past, and where social and industrial organisation has reached a complexity which requires highly developed scientific and social skills. Throughout the 20th century, changes in production and urbanisation have led to the need for an educated population at semi-skilled, skilled and professional employment levels. (See fig. 1). Mass education to second level and above became a common phenomenon in most Western European countries in the post-war period. A widely accepted aspiration to equality of economic opportunity for all, and the apparent possibility in a period of prolonged economic expansion that significant steps in that direction might be made, was a feature of the educational theory of the period. The 1960s and 70s saw growing unemployment of the unskilled alongside increasingly complex technology and literacy requirements. The shift in policy emphasis to educational models linked to wealth creation by the 1980s expressed both sharpened competition in a harsher economic climate and the continually increased need for a greater proportion of highly trained workers and proportionately fewer manual and agricultural workers.

Van de Meer (1992) in her comparative study of British and Dutch universities narrates the changing focus of policy starting in the 1960s and 70s, when universities were used as an instrument in government policies to balance social welfare factors in different regions. In Europe, several universities with a specific regional 'equalising' mission were founded during

that period. Examples were the locally-governed polytechnics in the United Kingdom and the centrally-governed technological universities in France. In Ireland, the university of Limerick was established following a prolonged community campaign on grounds of regional equality. In the Netherlands, the foundation of the universities of Twente and Limburg were also examples of this policy. The establishment of the University of Twente, for example, was seen as an opportunity to revitalise its de-industrialised hinterland. In this way, universities were seen as instruments of an 'equalising' industrial policy, in the reduction of regional welfare disparities and the increase of access into higher education. The inspiration of these policies came from the United States where already in the 1950s co-operation between universities and industry had been developed on a large scale along with links with the military.

Van de Meer went on to conclude that the role of universities in regional development had changed since that period "Instead of distributing wealth, creating wealth has become an important item. New priorities are to meet skills shortages, to offer relevant courses to industry and to promote technology transfer.". She pointed out that the focus of attention of policy-makers and researchers had shifted from the university's role in equalising disparities between regions, to the university as an essential strong point in the region "the potential of which can be used and further developed in the competition between cities." From the 1980s the policy of creating new institutions changed to one of introducing a new local development mission to existing institutions. She points to the inception in the 1980s of intervention by governments in requiring universities to act as stimulators of local development. On the assumption that programmes of intervention were needed to ensure that beneficial contacts were maximised, technology transfer programmes and science parks were introduced internationally as two linch-pin approaches, along with specific industrial liaison officer appointments or dedicated staffed units with an industrial liaison brief. The inception of these practices took place in the context of increasingly high tech requirements of industrial production, intense competition in a recessionary period, which brought a rejection of the liberal tradition of education in favour of a utilitarian approach which requires universities to justify their public funding in terms of measurable economic returns.

By the mid 1980s research had focussed mainly on two main areas of study. The 1980s saw interest in high-tech industry complexes as a panacea both for new development and for the restructuring of old manufacturing areas. The attraction of the university for mobile industrial investment was investigated in the context of many studies of industrial location decisions. The regional development mission of the university was addressed mainly in the

context of its apparent potential as a pole of development for high technological industrial clusters.

This chapter reviews recent literature concerning the local economic development impact of third-level institutions. It can be seen below that shifts in research trends have reflected changing requirements of the labour market and of social organisation. This expressed itself in the 80s and 90s in a fascination with location decisions of mobile industry. The need of the cities to offer an environment of equal or greater magnetic attraction than not only other neighbouring cities but also of distant competitors, focussed minds on those elements of urban structure which are attractive to location hunters. The apparent potential of the high-tech cluster to generate employment and export revenue in the context of job shedding in the traditional industry also lead to huge interest in the "Silicon Valley" in the 1980s internationally. Attempts to replicate the phenomenon were widespread, with the creation of the University - Science Park - High tech production groupings. The foundation of Limerick University and the Plassey Science Park is the most explicit Irish example of this type of intervention.

In order to permit a more detailed discussion of the matters debated in these studies, it is proposed to review in detail a representative example of each of four categories of study in the first part of this chapter. The relevant literature relating to the case study area is also reviewed. Firstly, de Meirleir's 1988 paper 'Science and Technology Policy and Economic Social Cohesion' sets out the procedures of location selection consultants and presents an analysis of the research potential of regions at different stages of development. Eade in his 1991 study, 'The role of Universities in local development' carried out research into a programme of intervention to encourage local development by the US government. He attempted to assess the impact of a wide range of measures introduced under the university centers programme. 'Urban Economic Development and High Technology Industry' published by Schachar and Felsenstein in 1992 is then reviewed. The study analyses in detail linkages formed by universities with industry in three locations: Jerusalem, a designated high technology development area, Rehovot, a naturally occurring high tech location and Cambridge, location of a high technology cluster in the United Kingdom. The results of a study by Van de Meer, 1992, 'Local Knowledge as a Source of Prosperity' which deals with changing policy and with destinations of graduates is reviewed. Finally, three studies by M.J. Bannon relating to the Waterford area are examined. The second part of the Chapter reviews literature concerning issues of spatial equality with reference to the location of universities.

## **Location decisions and the University**

Empirical studies internationally have consistently put forward a broad but similar range of factors explaining the locational decisions of internationally mobile companies (see Appendix 1). Labour availability, service infrastructure, skills and costs, transport and energy infrastructure, accessibility to markets, cultural affiliations, environment, labour and political climate, telecommunications, incentives, pre-existing concentrations of similar firms, accommodation and local origins of owners occur most frequently as factors identified throughout such studies. Emphasis on the importance of human resources has increased. Research for the EC FAST (Forecasting and Assessment in Science and Technology) programme by Illeris (1990) concluded that while transport and communications are enabling technologies in attracting firms to a region, the presence of what he called "proper human resources" had become the decisive factor in influencing location decisions. The FAST Research also suggested that, unless corrective action is taken with regard to the human resources trends in peripheral areas, technological and communication advances might in fact increase centralisation rather than reduce it. He stated in relation to the lagging regions within Europe, of which Ireland is one, "The pulling power of the centre must be countered and this can only be done by developing the skill base of the local/regional economy "

For the purposes of this study, it was decided to focus on de Meirleir's 1988 paper on location decisions as a framework for a number of reasons. Firstly, de Meirleir, in addition to his activities as a social geographer, was writing as a professional location consultant who has participated in and witnessed several hundred location choices. The method and priorities set out are therefore not hypothesised but reported. Secondly, he produces a far more detailed itemised account of both the methods used and factors considered in making location decisions than do other writers, with up to 60 factors considered.

De Meirler's method is to write a full definition of the project and its requirements - this process identifies essential locational criteria. Critical factors are then identified in order to select a short list of feasible locations. These factors were listed as transport of bulky items, labour costs if labour intensive, deep sea shipping if relevant, availability of large site if relevant, depreciation allowances if capital intensive, availability of highly-skilled workers if relevant, preparedness of labour force to do shift work if relevant, presence of effluent treatment plant, cash grant incentives. A combination of up to 60 additional factors is

considered in order to delineate the areas of search. From the short list arrived at the sites are reviewed against further criteria including physical characteristics of site, land use zoning and planning, expansion potential, infrastructure and utilities.

De Meirleir proceeds to itemise investment and recurring costs which are analysed when choices are under consideration, including site, buildings, equipment and incentives, labour costs, utility costs, transportation costs, taxes on corporate profits. A locational cash flow table is then constructed which is divided into four parts - investment costs, operational costs, net profit and rate of return on equity, each broken down into a number of detailed items. A parallel phase of investigation is an assessment of relevant 'intangibles' - political situation, economic situation, monetary situation, social legislation, labour climate, financing availability, incentives, taxation, labour quality and national attitudes to market expansion. The proposal is then costed in detail for capital and recurring costs and rate of profit against a number of 'probable' locations. The final interpretation of the results of the three phases " is always a compromise of all the factors affecting the location costs " and is made with the assistance of intuition based on experience. The entire focus of the exercise is to maximise rate of profit in as far as possible through selection of the optimum location. It should be noted that while proximity to a university is nowhere explicitly mentioned in de Meirleir' location factors, a site would not reach a short list stage should it fail to meet criteria for skilled labour.

In order to assess the capabilities of less-developed regions to absorb high-tech development projects and to participate in technological progress, de Meirleir's study for Stride turned the location search method on its head to match 59 requirements of investors with features of developing regions to determine 'physical fit'. De Meirleir examined 5 regions - one developed, two 'reconversion' and two agricultural for their 'match' potential with 6 areas of RTD. One of the 'reconversion' regions, Nord -Pas-de-Calais emerged as top rank, with the 'developed' region second. The two agricultural regions, one in southern Italy and the other in Portugal (Central Coast Area) ranked at less than half the scores of the top two regions. Divergence was much less in scores for maritime and agricultural projects, but the agricultural regions did not meet the criteria for pure research activities. De Meirleir's recommendations to Stride were that agricultural regions need a different approach to reconversion regions. Detailed recommendations for action were made including integration and association with universities, reduction of physical distance between research and technological development locations, importance of attractiveness and prestige of sites, size in function of RTD potential. He concluded that only a few appropriate RTD activities are

possible in agricultural regions under specific conditions and with assistance. Agriculture, food science and marine studies were tested and found to be feasible areas of research.

### **The local development mission**

A large number of studies have been made of the factors underlying the inception of clusters of high technology industry in which universities were often seen as having a special role to play. Eade, in 1991, reported similar trends in the USA, with many universities in the United States including an explicit local development 'mission statement' in their objectives. Eade investigated a national government programme which set out to strengthen links between local industry and their neighbouring universities. Eade's study of the University Centers Programme attempted to gain an understanding of why some areas can become the seed-bed for high technology-based development, to establish if such conditions can be replicated and if the university has an important role in this. Eade also endeavoured in his research published in 1991 to pinpoint the key factors which determine successful assistance of local and regional development by universities.

He found that the Programme, started by the Department of Commerce in 1965, had moved its central focus from business-support to work with local agencies 'to assist in economic-capacity-building activities'. The success of otherwise of its activities was not measurable, due both to lack of data and to the indirect nature of any supposed impacts. Interestingly Eade pointed to expanding universities as the occasional source of local tensions, being seen by some as consumers within the community, in particular of land and open space, rather than as contributors. Eade refers to a growing view amongst researchers that the local development role of universities is largely an image promotion and fund-seeking ploy, and points to self-promotional literature whereby universities list positive impacts on jobs etc. for which they claim credit. He pointed also to the reluctance of academics to involve themselves in local development contacts, often within an area with which they have no long term personal connection. He did not seek as part of the study to undertake any empirical work on the local environment which could be compared with the monitoring programme undertaken internally by the university itself and his conclusions must therefore be taken as tentative. Of most interest are his comments in relation to the reluctance of many academics to involve themselves in local development and the low prestige awarded to such activities, many directors of the Centers being academics who had failed to achieve internal promotion within the university. 'Whilst it may be desirable to view the university as one of a group of



actors working in harmony and sympathy with local groups. this does not usually accord with what is observed."

Eade also reports on conclusions that some, but not all, research and development agglomerations, are located in proximity of universities and that universities are in themselves features of the competitive local economy. In the USA, centrally-funded government technology transfer programmes had set out to accelerate technology transfer. The usefulness of Eade's research is to some degree limited by the difficulties he experienced in measuring impacts of fairly recent initiatives through lack of comparable data. Also, a narrow view of the connection between university and locality is taken throughout the research with the transfer of knowledge being assumed to be a one-way process from the university to the locality rather than interactive. Eade refers to the importance of the signalling function of universities and science parks. Eade's main conclusion was however that those universities with evidence of a positive impact on local development were those which had matched their capacities with the needs of their local area.

### **The High Technology Cluster**

A similar policy approach has been pursued in Israel, where a number of measures have been implemented by central government including both the promotion of local high technology industries and the attraction of mobile high technology industry. A detailed review of the workings of the Israeli government strategy, which attempted to raise indigenous levels of high-tech production by attracting mobile high-tech investment and encouraging technology transfer and production services, was carried out by Schachar and Felsenstein in 1992. A comprehensive range of measures was put in place, including improvement of the scientific education system, inducement of technology transfer between universities, encouragement of use of micro-chip applications and the encouragement of the development of a producer services sector. Israel, like the Republic of Ireland, had taken the experience of Massachusetts in the 80s to be replicable in a very different time and place. Schachar and Felsenstein identify the regional studies literature of the mid 1980s (e.g. "Growing the next Silicon Valley" Miller and Cote (1985)) as partly responsible for regional development strategies which they suggest lacked realistic appraisal of the actual potential of lagging economies, and are sharply critical of this approach. Part of this strategy had been the designation of Jerusalem as a high-tech development area with preferential grant structures and enhanced technology transfer programmes. Their study compares Jerusalem, an induced centre of university-centred high technology activity with a high level of

intervention, with Rehovot, a naturally-occurring high tech complex without the benefit of any designation or incentives, also university - centred. The high-tech cluster based on Cambridge University is also investigated.

In order to examine the local, national and international linkage patterns exhibited in high-tech firms and evaluate the prospects for local development which flowed from them, firstly employment linkages and income multipliers and then external production and service linkages were assessed. Their study also observed linkages between local centres of knowledge and research and the firms and "diagonal linkages" within the high tech sector internationally.

The study takes a generally negative tone in relation to both higher education linkages and to the regional development prospects associated with high technology industry. Aside from negative aspects of high tech investment such as the brevity of product life and volatility of profit levels in the high - tech sector, which have lead to convulsive change and periodic large-scale job shedding, Schachar and Felsenstein also concluded that assumptions made with regard to local multiplier and linkage effects in relation to high-tech industry have not been generally confirmed by empirical study. Futhermore, they point out that even where a successful high-tech cluster growth is continuing, as at Cambridge, UK and North Carolina, this growth has not been accompanied by the type of local population growth that has accompanied previous industrial forms. The high-tech settlement, they conclude, is often defence-based enclave, isolated from the local market and operating in an international network with few local linkages. They also point to the risks of relying on a heavily interdependant, globalised international system in which shocks or impacts in one global centre can have widespread effects in high tech activity worldwide.

The authors state that "case-study evidence points to limited external production and service linkages between high technology industries and the urban area in which they area located." Approximately 30% of firms in their survey of Cambridge reported linkages. Recent research was quoted ( Joseph, 1989 and Van Dierdonck et al. 1991) which suggests that only low levels of interaction occur between science park tenants and local universities: "External research linkages were not locally defined and were conducted on an international scale, pointing to the existence of research networks unconfined by national boundaries". This study was echoed by Eto and Fujita ( 1989 ) who concluded that in Japan an 'agglomeration tendency' existed in high technology growth. Whilst this often takes place in proximity to leading universities they found no real causality in the process. They rejected case studies

which cut across this view (e.g. Smilor et al. 1988) and concluded that science parks cannot act as a growth pole in local development.

As they did not consider the levels of linkage identified in their survey to be significant the authors were at a loss to explain how Yaad's 1991 study showed proximity to the Weizmann Institute of Science was cited as the most influential factor for some industry. The authors, like Eade, refer to the possible role of prestige or a signalling effect. As Appold and others, they conclude that the university and science park acts as a signal to prospective users of an appropriate environment and appropriate neighbours rather than as essential facilitators of technology transfer. This contradicts the findings of Yaad and others (see Appendix 1) from extensive empirical work that technological capability and availability of labour force are high ranking requirements of mobile high technology industry and that the ready and steady availability of suitably skilled personnel is the most important factor for high technology industry. A discrepancy is noticeable between Schachar and Felsenstein's conclusions and their survey results, which show employment of university graduates as ranking highest as a location factor, along with use of university facilities for both Jerusalem and Rehovot firms.

Findings somewhat casually dismissed by Schachar and Felsenstein are that 37% of firms sampled by them in science parks in the Netherlands and 16% in Belgium were direct spin-offs from a neighbouring university, while 32% of Dutch firms and 57% of Belgian firms reported in-house R and D. In Cambridge nearly 400 firms in 1987 owed their ultimate origin to the university. They do not provide any breakdown as to employee numbers, sectors, productivity etc. of these firms which would allow an evaluation of their economic value and future potential. Neither did the authors compare this performance either with national R&D levels or with non-university regions. The reported levels of activity if found in the neighbourhood of an Irish university would be considered very satisfactory and would without doubt be significantly more technology-intensive than non university areas in Ireland (see Chapter 7 below).

Whilst the authors express their disapproval of the approach taken in Jerusalem i.e. large capital grants and intensive university-based technology transfer intervention to attract large firms, with no attention to matching local needs or assets, they grant that the high-technology complex existing there would not have occurred in Jerusalem without intervention. On the down-line impacts of the strategy, analysis of the spatial labour market at Jerusalem showed that even lower order skills were imported over a distance, which the authors took as an indication that the high technology firms represented a disadvantageous

mismatch with local skills and employment needs. The probability that over time this disparity will convert to urban growth is not considered. More convincing and of relevance to this thesis, is their conclusion that as high technology firms arrived 'fully-formed' and with sophisticated service needs that service functions would continue to leak to Tel Aviv from Jerusalem; but the possibility here also should be considered that the gradual build up of smaller niche local firms will permit the evolution of a local service sector.

Schahar and Felsenstein are severely critical of over-enthusiastic and naive attempts to reproduce the 'Silicon Valley' phenomenon. A serious weakness of their study is however that a polemical view approach appears to prevent the authors from giving balanced consideration to the findings of their own or other researchers empirical work. Their own reported survey findings do not support their conclusion that the university factor is only notional. The levels of firm formation which are reported from their surveys show that a significant number of firms consider themselves to be direct spin-offs from the university, a significant number being founded by university personnel who chose to set up in their home area. A further weakness is that they do not make comparisons with non-university cities and therefore have no view of the pattern of development which arises in the absence of a higher education centre. The study has a parallel agenda to investigation of the working of government intervention into the high-tech-university relationship. The authors express strongly the view that a centralised development strategy implemented by government should be replaced by a locally-funded and locally-designed strategy. Whilst they advocate a local democratic base for development policy and expenditure, they do not set out any detailed recommendations of an alternative development strategy for Jerusalem. With respect to Rehovot they conclude that "where a metropolitan growth dynamic exists, public policy, both national and local - is likely to be effective only at the margin". Unfortunately they do not develop or substantiate the argument, which is also relevant to the situation in Ireland, as to how performance would be improved by greater local control ( Increased fiscal independence of cities will be discussed in Chapter 8 below in the context of south east Ireland).

It is apparent from the studies by Eade, Schachar and Felsenstein, and others quoted that since the late 1980s a generally critical or sceptical approach has become prevalent with regard to the role of higher education in local economic development. As earlier enthusiasm was informed with greater empirical testing, the startling effects predicted were not observed. The empirical evidence reported in these studies, which are all of university regions, suggests that linkages are occurring at a steady rate of around 20 to 30 per cent of surveyed firms, far higher than the levels found in a non-university region subject of this study. In areas where a

technology cluster exists adjacent to a university. the fact that research eliminates certain specified linkages (e.g. Eto and Fujita) is not conclusive evidence that only non-essential linkages exist. The early enthusiasm for replication of Silicon Valley may have been followed by an overhasty disillusion with the potential of universities to assist local development.

The studies reviewed were taken as broadly representative of a very extensive literature. Three major criticisms may be levelled at this research. The first is that, in a highly competitive globalised economy, the benefits of a university presence could not be properly measured without examination of areas without universities which would permit the investigation of disparities. The second criticism is that researchers in recent years have tended to excessively devalue the importance of linkages identified in their own empirical studies. It appears that a disappointment of unclear, equivocal or repetitive conclusions may have lead to a fashionable scepticism in reaction to previous over-enthusiasm. Value - judgements on the degree to which universities have succeeded in acting as poles of development are not related, say by Schachar and Felsenstein, to any universal standard or to any pragmatic standard elaborated by themselves. The objectivity of interpretation of their findings is therefore not established.

The third, and perhaps most serious objection is to the narrow and unselfconscious philosophical basis of virtually all of the research reviewed. As has been seen in this study, there has been very extensive research into the connections between regional development and higher education. The agenda of much of this research is unclear. In so far as it is explicit, the purpose of studies is usually expressed as being the identification of means by which a marginal region can improve its chances in the current fierce competition for inward investment (e.g. Eade). This agenda does not provide a basis for a planned approach to development issues. Studies such as de Meirleir's which at least have an openly capitalist/functionalist purpose, have the basic virtue of attempting objective assessment of the aspirations of marginal regions towards high technology investment. The approach more often encountered implies that any number of regions wishing to lure in potential branch plant investment might all be successful if they installed an airport, university or whatever else is identified as giving a 'cutting edge' of advantage. This approach has more in common with the Cargo Cult than with planning.

Some of these problems stem from the lack of any historical perspective being brought to bear on the subjects studied. The conditions prevailing which lead to "Silicon Valley" were clearly unique in the temporal as well as the spatial dimension. The assumption that so complex a phenomenon could be generally replicated could not have been made had the unique conditions under which it arose been taken into account.

It has been concluded on reviewing the treatment of these issues in the fields of planning and regional studies that there has been an excessive focus on attempting to derive general laws of development from investigation of cases, whilst the ongoing aggregate global effects of the individual decisions have been largely ignored. Local effects of the current cut-throat competition for investment include pressures to reduce planning and environmental standards and to weaken social labour legislation. Very few researchers in the fields of study reviewed have made even a cursory attempt to evaluate the desirability of current trends. It is acknowledged that this study could also be subjected to the last criticism. However, the starting point of the thesis was a problem of a region underfulfilling its potential. In arriving at possible solutions, it is aimed to avoid the aridity of doing so solely from the perspective of economic competition between regions, or without regard to prevailing economic and social conditions.

### **Studies of Waterford**

A number of studies have been carried out of the socio-economic development of the Waterford area, including a study by Condon in 1988 of tourism development and a study by L.A. Consultants in 1991 of the economy of the South East Region. Most relevant to this study are three reports prepared by Michael Bannnon with others, starting with a 1985 report (*Waterford Technological University (NIHE)* (Bannon and Fallon, UCD). This report was prepared for the Waterford Chamber of Commerce, and examined various ways of providing for the higher educational needs of the region.

The report highlighted how Waterford was 'losing out' as the area lacked a full range of higher education facilities. It presented a range of options for new departments in higher education in the Waterford area and recommended the development of a new institution which would take the form of a technological university (NIHE) similar in structure to the then Limerick and Dublin NIHEs ('technological universities'). The report indicated priorities in terms of the curriculum of the new institution and suggested a number of sites

within Waterford for the new institution. The report estimated economic costs and benefits of the proposed development for the Waterford area and it recommended the establishment of a 'Waterford University Project Action Committee' to promote the project.

Also in 1985, *The Development of Waterford as a Regional Service Centre* (Bannon) examined the development of Waterford since 1971 in the context of the defined role as " the regional service centre for white collar employment" The report pointed to the South East as experiencing the slowest growth of any region in Ireland with respect to the service sector. It showed a high leakage to Dublin from all sections of the service sector. It was concluded that "the South East region remains a poor relation in respect of higher education provision and development policies have, generally, not used the indigenous resources of the area to a sufficient degree." A programme of measures was recommended, including a establishment of a regional authority which would require central government action. The other major action proposed was the establishment of a technological university and a business and science park in the area. Tourism and cultural measures were also proposed. In 1991 *Strategies for Influencing the Location of Business and Office Employment* (Murphy and Bannon, Service Industry Research Centre, UCD) was published at the commission of Waterford Corporation. This study reiterated many of the findings of the earlier two reports and noted that most of the original recommendations had not been acted upon. A further programme of measures was proposed, including regionally, locally and nationally - based measures, with technology capacity-building measures and image-building measures predominating. The activation of a joint Economic Development Committee to draw into co-ordinated action the City Authority, the Industrial Development Authority and other local bodies was proposed. 'Acceptance of the case for the provision of third level facilities in Waterford to university level ' was among the proposals, leaving the flexibility, contrary to the recommendations of Bannon's 1985 report, that a university should be created by means of expansion of the RTC.

Although exclusively focussed on Waterford, these three reports identified many of the weaknesses relevant to the economy of the South East Region. The limitations of briefs undoubtedly were responsible for the way in which in these reports the City was isolated from its regional hinterland, thus unwittingly missing the opportunity to make the case for Waterford as a Regional Capital of the South East Region, an aspiration reflected in the reports.

### **Participation at third-level - Locational disadvantage and universities**

In one of the earliest British studies of locational disadvantage in higher education in 1972, Nahkle found that 'universities situated in the south east, north west, Yorkshire and Humberside and the northern regions, in Wales, Scotland and Northern Ireland all drew their largest intake from their own region.' Nahkle's statistical survey was followed by a number of further papers, all of which consistently pointed to proximity to a third - level institution as conveying significant advantage to prospective students. It was found that not only was distance a disincentive to students living beyond commuting distance, but that universities' selection procedures favoured applicants who were able to live at home whilst attending. Such studies included Keble, Mace, Morgan D and McDowell L. (*Patterns of Residence, Society for Research into Higher Education*) and Charlton ("*Regional disparities at A-level*").

The most elaborate of these studies was by McDowell. *Regional Inequality in England and Wales* published in the Higher Educational Review in 1981. McDowell stated that whilst it had been demonstrated by extensive sociological survey that inequality associated with economic position had changed little since 1945, there had been neglect of evidence that life-chances are also unequally distributed throughout space. Taking her evidence from detailed empirical studies in the United Kingdom, she showed that a child's chances of staying on at school after the minimum school leaving age were strongly related to the region in which she or he lived. In the United Kingdom only 4% of the total school population entered universities at the beginning of the 1970s compared with over 10% in the USA, 6.6% in France and 9% in Germany. Within that 4%, marked regional variations were shown. "Almost twice the proportion of 18 year olds brought up in the south east, compared with those from the north of England, go to university and children from the midlands also fall well below the national average."

Keble, in 1963, had suggested that income levels and numbers attending independent schools were the underlying causes of the very high university participation from south east England. McDowell showed by reference to A-level results that academic ability was not sufficient to account for regional variations in University attendance. The class composition of each area whilst contributing to inequalities in the country as a whole also did not account for observed differences between regions. McDowell carried out a statistical analysis of education spending and incomes, as well as sex differences, to establish the causes of regional disparities in university attendance. She found that these were not significant factors. The



number of available university places in each region emerged as the main factor. She concluded

If particular regions are poorly provided with university places compared with the size of their eligible population then fewer than expected school leavers in that region may become undergraduates.

McDowell found that a deliberate selection preference by universities for local students contributed to the difficulties of students from regions with low provision of places. McDowell did not attempt to establish reasons for reluctance to apply to a distant university. She speculated on the probability that cost of travel to interviews and time was a disincentive, reinforced by regional bias in acceptance rates, which reflected official policy to encourage universities to accept local students who may live at home. McDowell concluded that students from deprived regions should be encouraged to apply for distant places by discriminating in selection process in favour of distant students. This solution cannot be considered satisfactory as it would have amounted to a levelling down of the opportunity of studying in one's own region for all and would not increase the opportunity for the most disadvantaged to study in their own region.

### **Participation and spatial inequality in Ireland**

These conclusions were reinforced by the studies carried out by Patrick Clancy for the Higher Education Authority in Ireland in the 1982 and 1988. Table 1 shows the number of first time entrants (full-time) to tertiary education in 1991 as a percentage of the total in typical age of entry and comparative percentage in 1965. Whilst Ireland has tripled participation since 1965, it still lags behind all EC countries apart from Austria and the United Kingdom. (EUROSTAT, 1991).

The Clancy Report *Who Goes to College" - a second National Survey of Participation in Higher Level Education* (1988) showed that proximity to higher education institutions was a material factor in determining educational opportunity in the Republic of Ireland. This confirmed the results of his first study for the Higher Education Authority (Clancy, 1982) which investigated trends in participation in higher education in Ireland. The 1988 study was based on a national survey of all those who enrolled as first time higher education students in Autumn 1986. The purpose of making the study was "to provide a data base for decision makers in Irish Higher Education."

The publication of these reports was followed by a debate which mainly focussed on equity of opportunity for entrants to the system. Amongst other conclusions, Clancy's data unambiguously showed that distance or proximity to a university had influenced rates of participation in higher education in different parts of the State. Since the geographical distribution of institutions providing third level courses is highly concentrated in Dublin and south/west Ireland, Clancy (Map 1) showed that the greatest source of variation between counties admission rates was distance to the nearest college. For example, of the 42 institutions which are at present providing third level courses 24 are in the greater Dublin area and another 9 are in Cork, Limerick and Galway (Map 1). The imbalance of distribution of institutions occurs in both the RTC and University sectors, as the Dublin area has only 2 Regional Technical Colleges in spite of holding nearly three eighths of the national population.

Clancy investigated participation rates by county and nationally (a regional breakdown, included in the 1982 study, was omitted in 1988 following dissolution of the regional development bodies). He found that

The rates of admission by county varied significantly by college types. The rate of admission to universities is highest in Cork (12.9%), Kerry (12%) and Galway (12.0%). These rates are more than twice as high as those found in the six lowest counties. Predictably, the three counties with large university centres, Cork, Dublin and Galway, all have relatively high rates of admission to university education.

As in the British studies, Clancy found that distance from college had contributed significantly to variations in admission rates: "One of the main results of the multivariate analysis is to confirm the finding about the importance of distance from college as a determinant of variation in university/NIHE admission rates. Counties which were distant from a university had substantially lower rates attending this sector."

He also found that distance from a university or NIHE and distance from a vocational/technical college was negatively associated with the rate of admission to each of those sectors. This finding was illustrated by the fact that all of the counties which had high rates of admission to the RTCs had a college situated either within the county or within a short commuting distance. Similarly, three of the four counties with highest rates of admission to the university sector had a university located in the county. The evidence suggested that the high rate of admission to technology education in many counties may have been influenced as much by distance from a university as by the proximity of a technology college.

The effects of distance on participation in Ireland might be expected to be particularly strong due to the large average family size and the very limited grant assistance for those gaining university places. The fact that a strong correlation between participation and proximity of higher educational institution also exists in the United Kingdom suggests that financial disincentive, although a strong factor, may be only part of the story of why non-university regions have low participation. These issues will be discussed in greater detail with respect to the case study area.

## CHAPTER FIVE

### CONCLUSIONS DRAWN FROM REVIEW OF LITERATURE

The aim of this thesis is, as stated previously, to test the hypothesis that the lack of a university is an insuperable barrier to regional development. In this chapter the main findings of empirical work which relates to the hypothesis are reviewed, and conclusions drawn regarding the need for further investigation regarding the case study area.

#### **Inward investment**

1. In all works reviewed on local development and universities, the weight of empirical evidence drawn from a number of otherwise contradictory studies is that the presence of skilled labour appears to be the primary feature of university localities which both facilitates high technology mobile industry and encourages local firm formation. Examples are Herzog et al (1986), Illeris (1990), Schachar and Felsenstein (1992), Eade (1991) and Malecki (1984 and 1992) who all quote in their work evidence that highly skilled labour is an initial triggering factor for high technology development. The priority put by industrialists on assured access to a supply of appropriate highly-skilled labour was common to all studies which investigated the topic. The university and the science park therefore act as guarantors to possible mobile industrial investors, rather than signallors (as is suggested by Shahar, Eade and others), of the presence of highly-skilled personnel.

#### **Indigenous industry**

The other essential feature to emerge from previous empirical studies is that the skills developed in the university must match the existing economic activity in the area if independent indigenous industry in the region is to benefit from the university presence. This finding has most significance for non urban-agglomeration areas, where the range of existing activities is likely to be narrower. Whilst footloose industry can select a location which has an appropriate supply of skilled personnel including graduates, indigenous industry is dependant on an appropriate 'fit' existing between the skills produced at the university and the sectoral development/natural resources of the region. If this fit is not present, it is self-evident that local industry will receive less technological support and that graduates will tend to leave the region on qualification. The major factor for regional development with respect to the presence of a university is therefore the numbers of appropriately skilled graduates.

Locally generated firms, set up by local entrepreneurs have not usually made a location decision - they have just grown. Feehey (1994) has shown that in Ireland the optimum profile of the successful 'start-up' entrepreneur is a graduate with experience in an international company. A number of studies (Feehey, 1994 Malecki, 1992) suggest that graduates who have moved from university to work for a large firm and then set up business have an importance in local firm formation which is disproportionate to their actual numbers.

### **University - industry linkages**

In the university - high-tech industry - local economy equation. 'good fit' is essential if beneficial interactions are to occur. For a 'footloose' industry to have selected a location, it can be assumed that appropriately-skilled workers are being provided to fit its requirements, or that intervention such as the funding of a chair can ensure that such provision will be made. A branch plant arrives in its host area 'fully formed', with sophisticated service and supply needs. If it locates in an area where these needs cannot be immediately met, the evidence (Schahar et al (1992), Bannon (1988)) is that it will obtain its services from the nearest existing urban area which can provide its needs and its producer supplies from the most economic source nationally or internationally. The stopping by local entrepreneurs of such 'leakages' may be a long slow process or may not occur within the life-time of a branch plant. The overriding number of production linkages with multi-national branch plants have been shown to be international and the level of sophistication of the incoming firm works against the prospects for the formation of local linkages in less developed areas. The incoming firm will not therefore establish extensive local linkages or and may allow only for the very gradual improvement and expansion of local services and supplies as a spin-off of its presence. The attraction of high tech-plants to smaller, less developed urban areas is therefore likely to have an impact restricted mainly to its wage packet contribution to the local economy. One of the most significant characteristics of research-based industry identified is the universal tendency found for the research and development side of high-tech companies to agglomerate whilst the production side tends to disperse.

Whilst numerous other factors (science parks, technology transfer programmes etc.) have been cited by firms and by researchers as relevant, their importance is always secondary and appears to be variable from location to location. The issue of the skilled work force, and its relevance to the actual areas of production within the region, predominates and is general.

The performance of government initiatives in higher education-industrial linkage implemented through science parks and universities is difficult to monitor and does not match the significance of skilled labour supply, low labour costs and cash grants.

### **Summation**

Whilst some researchers have cast doubt on the extent to which universities interact with local industry, the content of studies generally supports the proposition that a university is "a necessary but not a sufficient ingredient for healthy socio-economic development." (Eade)

The implications of global mobile investment decisions and of competitive regional development initiatives are much wider taken in aggregate than would be suggested by most studies. In formulating solutions for lagging regions and developed regions, regard should be had to global impacts.

## CHAPTER SIX

### FORMATION OF THE GRADUATE LABOUR FORCE

#### Introduction

It has been a consistent finding of empirical work that the provision of highly-skilled labour is the prime function of universities in local development. Without a steady supply of highly-skilled workers certain types of inward investment will not take place. Furthermore, Malecki (1992) has shown that the presence of a university within an area is a requirement of highly-skilled professional staff who are asked to relocate, and that this requirement has influence on location choices of industry which requires such workers. Research by Meehan (1994) has shown that in Ireland, the presence of a graduate, particularly one who has experience in an international company, at the head of a start-up firm increases its survival and success chances. The profile of university regions includes significant numbers of firms set up locally by graduates previously employed by 'university cluster' industries (Scharlach and Felsenstein).

The converse questions which arise are therefore:

- is it feasible for a non-university region to maintain a graduate population at least equivalent to a university region?
- in the event of finding that it is not feasible, is it possible for a non-university region to maintain or improve its rate of development on a par with that of a university region?

The capacity of university areas to hold their graduates within the locality, and to recruit graduates from outside, along with the ability of non-university areas to recruit graduates from other areas, are therefore critical issues. The graduate population within an area is the outcome of a sequence of events, which starts with participation of students in higher education, continues with attendance within the region and concludes with the opportunity and choice of joining the local workforce, whether coming from a local college or from elsewhere (See fig. 1). Low participation at third level from an area does not of itself presuppose low undergraduate attendance in that area (which is governed by local supply and national demand for places within the region), or low graduate employment (which is mainly determined by interaction of graduate availability and suitable employment opportunities).

However, rates of participation among students of local origin, depending on the importance of any general tendency to study and remain to work in one's area of origin (as suggested by Van de Meer), may tend to affect ultimate attendance in the area.

The components of the graduate workforce are

1. persons who originate from the area, study in the area and remain to work
2. persons who migrate into the area as students and remain to work after graduation
3. persons who migrate to the area to work as graduates.

The questions to be asked in relation to participation levels are

- a) What percentage of participants will study in the area and remain to work.
- b) what percentage of those leaving to study in other areas will return to their home area on graduation to join the workforce.

In the context of the case study area, previous literature on graduate destination trends is first discussed. Statistical evidence of attendance at third level and then graduate employment rates within the area are then analysed, following chronologically the processes which contribute to graduate employment levels within the area. The issue of participation and whether it affects the ultimate level of graduate employment in the South East is discussed and literature on the topic is reviewed.

Available statistical evidence limits examination to a 'snap shot' view, as census returns do not allow for the tracing of individuals from one location to the next. As a first step, statistical evidence is reviewed and related to relevant literature. Further empirical investigation into 'life histories' and motivation is reported in the following chapter.

### **Graduate migration - 'portal in' or 'portal out'.**

The issue of graduate migration has also been studied by a number of researchers. The graphic terms 'portal in' and 'portal out' (Hudson, 1976) have been applied to higher



graduation. She found that the situation in the Netherlands was very different from the situation in the UK, in that in the Netherlands there is a strong tendency for students to go to their local /regional university, the quality and content of university courses being considered very much more uniform nationally than in Britain.

Van de Meer analysed net gains and losses of graduates in a number of university cities. She found that net gains varied considerably, and that some cities experienced net loss. She found that housing situation and the quality of the urban environment were strong factors in influencing graduate loss or retention in the Netherlands, but that in the UK a significant drift to the south and to London was a constant. In the UK the housing and environmental factors did not appear to have any significance. The study suggested that employment opportunity was the decisive factor in graduate migration both in the UK and in the Netherlands, but that other locational goods, such as housing, could tip the balance.

The pull of major urban centres such as London to young graduates is well documented (Johnston, 1989) (Fielding, 1992) and is not surprising, given the concentration of higher order services and manufacturing that take place in large cities. With regard to the success each city had in retaining its net share of graduates, Van de Meer found that "in all cities involved, there is a strong relationship between home origins and job locations after graduation. The relative amount of students who originally come from the region where they started their university education and, after graduation, stay in this city to find a job is far greater than students not coming from the region and staying there after graduation."

Hannan, in 1992 conducted a study (*Education, Employment and Local Development*) the main thesis of which was that the "elite academic model of educational achievement" in Ireland leads to a dynamic of 'upward and outward mobility' i.e. for students from rural areas, the degree is cashed in for a train or plane ticket to a large urban centre away from their home region. Hannan's main interest was to show how the second-level and third-level educational systems were failing to educate for the realities of the local economy, leaving pupils with the options of succeeding in the system and leaving, or failing and staying.

migrating. 23% of those who had no leaving certificate, 38% of those who had leaving certificate only, and 61% of those who eventually gained a degree left their home area. It was found that over 70% of those from remote rural areas who gained a degree left their home area. She also concluded that RTC students in her survey did not share the profile of university students, having no increased tendency to migrate over and above leaving certificate level. The general conclusions drawn were firstly that higher educational attainment was operating as a selective upward mobility and outward migration process from remoter areas. Hannan's analysis of returns showed only a very slight tendency for specialisation in vocational and technical subjects to lead to lower outmigration rates from the more remote communities.

Hannan found attainment of higher education qualifications to be highly sought after, with some of the nation's highest participation rates occurring in remote rural areas in the west of Ireland. The majority of such students did not return to work in the home area. Population levels are declining in these areas, being down by up to 50% since 1940. Higher education may be seen as an attempt by young adults to raise their prospects of employment and good living standards on the assumption that this will be outside the region.

Thus for the remote rural areas on which Hannan has focussed, an extreme case of the 'portal out' phenomenon is shown. These results repeat the conclusions of studies internationally into the depopulation of rural areas and the shrinking of the agricultural workforce internationally. The central conclusion of relevance to this thesis is that the chance to move to a location of better employment/earnings opportunity leads to migration at all educational levels. Secondly, it can be observed that when earnings opportunity is equalised between Ireland and in its migrant labour markets, whether as a result of rising opportunity inside Ireland or falling opportunity outside, return migration will generally take place.

The higher proportion of graduates migrating clearly correlates with better job opportunities for graduates. Labour force surveys show that, in a situation of very high unemployment, the employment chances of people with primary or higher degrees is still comparatively good (Appendix 2). In Ireland student migration cannot be separated from the overall cultural

Hannan, who started out with the hypothesis that a 'misfit' between the type of higher education in Ireland and local economic needs existed, concluded that the generally very high levels of employment at all educational levels in Ireland must mean that the orientation and content of educational programmes have no relevance. This assumption must be queried, as it does not correspond with the findings of other studies, including Van de Meer, Meirlech, Schahar and others that 'fit' between training and local development needs is highly relevant. Skills shortages can and do exist in the context of high unemployment. It could be said that such an extreme inability to permit employment of a workforce must indicate an acutely dysfunctional economy, which is likely to have many features which are interacting negatively. A mismatch between educational supply and educational needs and realities should not be ruled out as a contributing factor, but should be subjected to further investigation. The author is familiar with such a mismatch in a rural context, i.e. the training by a remote rural vocational school of up to 50 girls as secretaries in any one year. At the same time, local glass and clothing factories experience chronic difficulties in obtaining skilled operatives.

In a paper titled "*Education, Migration and Regional Development*" (1992) J.A. Walsh also investigated the connections between educational attainment and the propensity to migrate. The table below shows numbers of graduates originating from the regions and destinations of graduates obtaining first employment in 1990. The most striking phenomenon was migration to the Dublin (eastern) region and emigration outside Ireland. This left only 25.2 % of the graduate cohort remaining in the rest of Ireland, which holds approximately two thirds of the country's population. These trends also occur in relation to diploma and certificate holders, but to a lesser degree. The south east is affected by both of these trends, but loses a higher percentage of diploma and certificate graduates than any other region. The group of which the South East is part, in spite of its low participation rate at third level, loses two thirds of its undergraduate cohort at stage of first employment. Only the northern regions, which have particular physical and political problems, have a comparable loss of young graduates.

**Table 1**  
**Higher education and migration**  
 1990 graduates - region of employment  
 % of cohort to originate and to find employment within region

	<b>Cert and Dip</b>		<b>Primary Degree</b>	
	<b>Origin</b>	<b>Employment</b>	<b>Origin</b>	<b>Employment</b>
<b>East*</b>	25.7	36.2	33.9	44.6
<b>S.West*</b>	14.8	11.6	19.4	8.5
<b>M. West*</b>	10.0	6.5	10.0	4.6
<b>West*</b>	9.2	7.2	9.6	3.6
<b>Mid.</b>	8.9	4.9	7.1	2.7
<b>S.East</b>	11.1	5.9	7.9	2.5
<b>NWest</b>	15.4	9.9	9.6	3.3
<b>N.East</b>				
<b>N.Ireland</b>				
<b>Abroad</b>	5.1	17.8	2.5	30.2

*(Source: Walsh)*

*\* University Regions*

The distance factor is identified as important not only as a source of spatial inequality in participation rates but also as an influence on initiating a migration experience. About 55% of new entrants to higher education in 1986 attended a college which was located outside their county of usual residence (Walsh, 1990). Walsh concluded that "participation in higher education is crucial in initiating intra-regional migration flows which are not reversed after students graduate from college. The very low net figure (of loss) in Dublin reflects high levels of immigration from other regions".

## Conclusions

The research reported above suggests:

1. That the formation of the graduate workforce is mainly dependant on suitable jobs and salaries being available in the university region. Larger urban areas have an enhanced chance of both retaining graduates, and attracting graduates into the region.
2. That the only constant population effect on college locations is the presence of the university population itself, comprising students, staff and their dependants.
3. That in Ireland, student and graduate migration is part of a chronic situation of ongoing economic migration which affects the whole population. South East Ireland is experiencing the national trends, but exceptionally acutely.
4. The chance to move to a location of better employment/earnings opportunity leads to migration at all educational levels. When earnings opportunity is equalised in Ireland and in its migrant labour markets, whether as a result of rising opportunity inside Ireland or falling opportunity outside, return migration will generally take place.
5. That graduate migration depends on the relative economic strength of place of student origin, university location and competing employment markets, nationally and internationally. Within Ireland, this is leading to imbalanced development, as Dublin, the only urban agglomeration in the country, attracts the majority of graduates.
6. That graduates, having marketable qualifications, are more prone to migration than unqualified people.

In South East Ireland, migration patterns amongst diploma and certificate holders were similar to those of degree holders in other regions. The non-university regions lost higher proportions of both their primary degree holders and diploma and certificate holders. Whereas in the case of the Midlands, and North this is likely to be associated with a low level of urbanisation, the South East is a relatively urbanised and industrialised region.

The research gives no conclusive evidence as to whether there is any tendency for students to settle in the college town after graduation. No investigation was made in the above studies to determine any different migration trends in university or non-university locations. It should be noted nevertheless that Walsh's figures show that highest levels of migration are consistently from non-university areas.

### **Attendance in Higher Education**

Attendance of students in an area has a direct economic effects, benefitting the providers of accommodation, shops and services used by students. The question as to whether attendance levels directly impact onto the graduate workforce numbers is not proven, although it is strongly suggested by published statistical information. It will be seen that attendance levels generally correlate with graduate employment levels among regions, although high levels of graduate migration may lead to diminished variations. Attendance is defined by the number of available degree-level places available within an area. Of the 44 degree awarding institutions nationally, 26 are in Dublin and a total of 9 more in Cork, Limerick and Galway (Map 1). In South East Ireland there is no university but an increasing number of degree-level places have been created within the two Regional Technical Colleges in the Region, Waterford and Carlow. The number of places available at degree-level within the South East is nevertheless a fraction of those available in regions with universities and Regional Technical Colleges, i.e. Limerick, Galway, Cork, and Dublin. The table below shows the disparity between Waterford, the main urban centre within the South East Region, and the urban centres of the Eastern, South Western, Western and Mid Western Regions.

**Table 2**

**Number of first year students taken into full-time undergraduate degree courses  
in the public institutions by location (1992-3).**

	undergraduate entrants	% of pop.in region
DUBLIN/EAST	9.826	29.1
CORK	2.375	13.3
GALWAY	1508	9.7
LIMERICK	1770	11.1
<b>WATERFORD</b>	<b>254</b>	<b>10.9</b>

*(Source: Ministerial written answer dated 23rd March, 1993)*

The numbers of degree places quoted by the Minister of Education for South East Ireland do not tally precisely with figures given to the Higher Education Authority by the institutions themselves. However, even taking the highest estimates of degree students attendance in the South East at degree level attendance is clearly very low in comparison with those other regions which have both RTCs and universities. This has an impact on the young student population in the South East.

**Table 3**

**Students as a % of 15-24 Year Population**

<b>Region</b>	<b>% of pop 15-24 classed as students</b>
<b>West*</b>	<b>52</b>
Mid West*	50
South West*	48
East *	46
Dublin*	45
Midlands	45
North West/ Donegal	45
<b>South East</b>	<b>43</b>
North East	40

In 1994 the total full-time numbers studying within the South East Region were estimated as follows:

Carlow RTC -	1.900 students
Waterford RTC -	3.200 students
total:	5.100
inc. total degree-level (S.E.)	1.650 approx.

*(Sources: Waterford and Carlow RTC student unions)*

Comparison will be made with the Mid West Region, where full - time students were as follows:

Limerick University -	6.155 students
Limerick RTC. -	2.000 students
total:	8.155
inc. total degree level (M.W.) -	6.500 approx.

*(Source: Limerick University  
Limerick RTC)*

Whilst Waterford RTC has a number of degree level courses in a limited number of fields, the combined attendance at Limerick RTC and university offer up to five times as many places as are available in the South East, these places being spread over a far wider variety of graduate and post graduate courses.

### **Graduate Employment**

Higher Education Authority surveys provide data on the regional distribution of graduate employment of new entrants to the workforce. A very high concentration of national graduate employment exists in the Eastern region, which includes Dublin. It firstly must be noted that the HEA figures exclude the 30% of the cohort who emigrated outside Ireland.



institutions. There was a clear correlation between location of universities and levels of graduate employment. Whereas other regions with very low graduate employment are primarily agricultural and non-urban, the North East being cut off from its natural urban centre, the South East is otherwise similar in profile to the West or Mid West. The South East attracted fewer primary graduates than any other region with the exception of the North (includes North East and North West). The region's workforce had the lowest level of Higher Degree entrants. Overall, net intake of graduates was lower than all regions except the Midlands, and, per capita, was lowest nationally.

The table below breaks down the graduate population by level of qualification. It can be seen that in 1990 the South East, with 10.9 of the national population, took into its population only 3.6 of new primary degree graduates and 1.7% of post graduates. The Mid West, with 8.9% of the population, held 6.7% of first degree graduates and 7.6% of higher degree graduates. Numbers of Diploma holders were far closer, with the Mid West absorbing 7.1 % and the South East 8.1% of new diploma holders. Perhaps the most surprising factor noted with respect to the South East is that with over 5000 RTC students as compared with the Mid West's 1,800 RTC students, the region had a similar intake of diploma holders into the local population. The apparent advantage of the regions with universities in attaining a higher graduate population than the non-university regions is not duplicated by the South East, whose exceptionally high numbers at RTCs in the region had not converted into exceptionally high numbers of vocationally qualified persons within the workforce.

**Table 4**  
**Percentage distribution of 1990 graduates in employment in Ireland by region and by level of qualification.**

Planning Region	Level of Qualification			Av.	% of total pop.
	Certificate Diploma	Primary Degree	Higher Degree		
<b>East</b>	44.7	64.0	59.4	56.0	38.3
<b>Southwest</b>	14.3	12.2	10.4	12.8	15.1
<b>North</b>	11.0	2.8	3.1	6.1	11.4
<b>Southeast</b>	<b>8.1</b>	<b>3.6</b>	<b>1.7</b>	<b>5.2</b>	<b>10.9</b>
<b>Midwest</b>	<b>7.1</b>	<b>6.7</b>	<b>7.6</b>	<b>7.0</b>	<b>8.9</b>
<b>West</b>	9.7	5.2	11.2	9.1	9.2

dentistry graduates started work in Cork and Galway. A disproportionately high number of engineering graduates located in the Midwest. With respect to Higher Degrees, over three fifths of Arts graduates located in the East (includes Dublin). The West, (includes Galway City) with 8.3% of total population attracted 14.3% of the most highly qualified graduates. It attracted one-fifth of the higher degree commerce and business graduates, one quarter of the most highly qualified engineers and over one third of those with higher qualifications in law. The South East had the lowest levels of graduate intake in business and commerce, medicine and dentistry, and arts. In engineering, considering relative the importance of large-scale manufacturing in the region, it is surprising to find that employment of new graduates was lower than all regions except the West and the North. Numbers of science graduates joining the workforce in the South East were however higher than both the West and the Mid West. This may reflect industrial profile and the presence of agricultural research stations. These issues will be discussed further in the Chapter 9.

**Table 5**

**Percentage distribution of 1990 graduates in employment in Ireland by region and by faculty**

	<b>Primary degree graduates</b>						
	Commerce.	Med. + Dent	Sci.	Engineering	Arts	Total	Tot. Pop.
<b>East</b>	74.0	52.1	62.5	58.3	72.2	64.0	38.3
<b>S.west</b>	7.8	19.3	13.6	12.3	8.9	12.2	15.1
<b>North</b>	2.5	10.6	3.7	1.2	2.3	4.4	11.4
<b>S.east</b>	<b>2.5</b>	<b>1.5</b>	<b>6.1</b>	<b>3.7</b>	<b>2.2</b>	<b>3.6</b>	<b>10.9</b>
<b>M.west</b>	7.1	2.6	4.7	14.6	4.8	6.7	8.8
<b>West</b>	3.4	12.1	4.0	3.5	6.5	5.2	8.3
<b>Mid.</b>	2.7	1.8	5.4	6.5	3.1	3.9	7.2

*(Source: Higher Education Authority)*

university as against a national average of 40%. There was a clear displacement to the technological sector, in which share was 64.6 as against the national share of 50.9%.

**Table 6**  
**Participation in the University Sector**  
**1988**

<b>Region</b>	<b>No. of students</b>	<b>% of cohort in HEA institutions</b>
<b>West</b>	3,328	15.2
<b>South West</b>	6,143	15.2
<b>Mid West</b>	2,998	12.6
<b>East (inc.</b>	12,713	12.6
<b>North East</b>	1,198	10.5
<b>Midlands</b>	1,939	9.4
<b>South East</b>	<b>2,638</b>	<b>8.8</b>
<b>North West</b>	636	7.6
<b>Donegal</b>	718	7.1
<hr/>		
<b>State</b>	<b>32,309</b>	<b>12.0</b>

*(Source: Clancy, HEA, 1988)*

\* Planning regions with universities

It can be seen from this table that participation from the South East in universities was only a little over half the level in the two western regions and two-thirds of that in the East and Mid West. The table does not take into account the growing pattern of attendance at Northern universities from the North West and Donegal. Inclusion in H.E.A. figures of North Tipperary, which is not in the S.E. Planning Region, also masks the differential. Taking this into account, the rate of participation from the South East was lower than from any other region in the State. Participation in third level overall (universities and RTCs) in the South East was well below the national average. Student intake nationally in 1990/1991 was close to 25,000, representing almost 40% of the cohort. About half the intake proceed to degree-level programmes (Source HEA). In 1990/91, while the five counties of the South

In order to address the problem of the locational inequality which affects the south east, it is important to understand precisely how and why it is occurring. Clancy carried out multi-variate analysis which tested the south east's low participation rate and other factors, such as low performance at leaving certificate, socio-economic profile of the region or numbers remaining in education to leaving certificate level. However, scrutiny of these factors in the South East shows that whilst the percentage of the 1988 cohort remaining to leaving certificate is marginally lower than average, this would not account for the region's low participation rate. H.E.A. figures confirm that the disparity is arising at application stage. Clancy did not review the question of selection policy of universities contributing to low participation rates as in the Irish context the points system of selection is location neutral.

Having eliminated failure to qualify, or socio-economic profile as a cause of the region's low participation, two possible causes suggest themselves. One is the possibility of a cultural pattern of attendance close to home, particularly in view of the young entry age (17) of many third-level students in Ireland. The most probable cause would appear to be the additional financial burden, estimated at £5,000 a year (*source, Coopers and Lybrand I.S.U.*) per student, of attending university away from home. The large average family size in Ireland (6) aggravates the additional cost factor to each wage earner. Other factors to be considered are the sectoral development of the south east as it affects job opportunities, the high percentage still in the agricultural workforce in an area of exceptional soil fertility, and the possible effect of lowered aspirations resulting from lack of a university presence within the area. The lack of familiarity with university institutions and the small number of graduate 'role models' in the area should also be considered as a possible factor.

The statistics referred to above do not follow the movements of individual students but give 'snap shot' information relating to gross numbers. In order to establish whether participation in the region is a significant factor in determining ultimate graduate workforce it is necessary to see if those studying within the region have a stronger tendency to remain in their region of study after graduation. A sample of graduates in Waterford, in the South East Region and Limerick, in the Mid West were therefore questioned as to their origin before studying, their

## **Conclusions**

In the South East, low attendance and low participation at higher level has been followed by low entrance of primary degree and higher degree holders into the workforce. The South East's much higher than average participation at certificate and diploma level did not result in higher than average diploma and certificate holders joining the workforce.

The most striking feature observed is however the extent of migration to Dublin or emigration abroad from all other regions, which overshadows all other tendencies shown in the tables above. The majority of graduates in recent years have migrated to Dublin or emigrated outside the Republic of Ireland. The strong trend shown to outmigration from the the South East both at point of entry to university and point of entry to workforce is not sufficiently compensated for by in-migration of graduates. The graduate population of the South East is affected both by low participation from the Region and by the migration to universities of the majority of those participating from the region.

For the South East, university and RTC education has acted as a "portal out" for the majority of its young people who went on to higher education. In spite of a large scale increase in places nationally in the last ten years, the region has suffered from a cumulative loss of young graduates each year. Regions with universities have succeeded in retaining a higher proportion of graduates than those without, but still are experiencing a heavy net loss to Dublin and the Eastern region. It would appear from regional strengths in attracting graduates in particular disciplines that some regions have succeeded in establishing niche areas of activity in which they can compete with Dublin and the East, and can retain their expected per capita share of graduate employment. Also notable is the relatively low retention (contrary to the general findings of Hannan) in the South East of certificate and diploma graduates. Further investigation of this phenomenon would be required to establish why the region does not hold more of these graduates, given the large numbers attending Waterford and Carlow RTCs.

The data in this Chapter shows 'snap shots' in behaviour. The life histories of individuals

tend to higher levels of migration. Graduates were shown as a group to have far higher rates of employment (see Appendix 2)

## **CHAPTER SEVEN**

### **TRENDS IN STUDENT AND GRADUATE MIGRATION**

#### **Introduction**

In order to pursue further issues regarding human resources which have arisen through review of statistics, information on the life histories and motivation of students and graduates in the South East and Mid West regions was collected by means of questionnaire submitted to 250 students. The first part of the student questionnaire was designed to obtain information on the life histories of students, on the influence of grants on choice of college destination and their expectations regarding future employment or post graduate study. The second part sought information on a number of economic, environmental and social 'pull' factors' which lead students to study in the South East and both 'pull' and 'push' factors which might affect student destination. Factors were to be rated on a scale one to five, one being no effect, two being a little effect, three being a significant effect, four a strong effect and five, a decisive effect.

A questionnaire was also submitted 1993-4 to 100 graduates in the 21-25 age group in both Limerick and Waterford. Information was sought on the life histories of graduates, including place of origin, and point of migration to the Region. 'Pull' factors and 'push' factors were investigated by means of ratings given to factors which may have influenced location to the Region.

#### **Student responses**

A random sample of 125 students in their second and third years at Waterford Regional Technical College was taken in 1994, across all courses and including males and females. Ninety eight replies were received. In Limerick of a similar sample of 125 students, 106 replies were obtained. All of the Limerick students and 35 of the Waterford students were taking degrees, correlating closely to the actual proportion taking degrees in the Region.

which broadly coincides with 'commuting distance' - i.e. 30 miles or less. Approximately three quarters of the remaining students came, in equal proportions, from over 100 miles and from the 30 - 100 miles radius, 36.26% ( 37) and 34.6% (35) respectively. Figs. 3-4 below show origins of students in Limerick and Waterford.

Approximately 15.7 % (16) of the students originating from the region were taking degree - level programmes. Only 9.8% (10) of respondents were both from the Region and were taking certificate or diploma courses. For most vocational students, RTCs are acting as a portal out at participation stage. Returns suggested generally that economic considerations are determining the locational choices made by students in Waterford, availability of grants for vocational students who are studying away from home acting a strong pull, with proximity to a non-grant aided degree course also exerting pull on a proportion of students. This variation, confirmed in informal interview with students, results largely from the current EC-funded grant system for the vocational sector. Vocational courses in RTCs are grant-assisted with a non-means tested grants. These ESF grants are very small, e.g. less than £30.00 a week for students living at home, but reasonably generous e.g. £150 and over, for students living away from home. Degree-level courses, both in RTCs and in universities, are given limited and strictly means-tested assistance under a government-funded scheme.

The effect of the grant system therefore is to skew attendance patterns, with the majority of certificate and diploma students migrating to obtain funding and some students selecting vocational courses rather than degree courses because of availability of grants. There can be considerable financial incentive for students who are qualified for university entrance to opt for a two year course instead. Of the 61.74 % ( 63 ) respondents not on degree programmes at Waterford, almost half (31) stated that they had obtained sufficient points to pursue the discipline of their choice at university and all but one of those (30) said they would have attended university if equivalent grants had been available. Twenty four of these were from the Region.

Of the respondents, only 11.7 % ( 12 ) stated that they would like to work in the Region and 9 of those were from the Region. 69% ( 18 ) of students from the South East expected to



Students were asked to rate 'pull' factors which had drawn them into the South East to study. The good reputation of the college and of their chosen courses were rated on average 5. Grants were rated as decisive (5) in a majority of cases (89.8%). Good job prospects rated only 3 in more than 60% of responses. Good social life also rated 4 in over 70% of replies. Environmental factors, including housing, climate, good environment rated at 3% or lower in over 75% of replies. Family connections rated low in the local group, at an average of 2.

Those who wished to stay in the region in which they studied were asked to rate 1-5 a number of 'pull' factors. In the Waterford group, factors emerging as most significant ( i.e. scoring an average of 3 or over) were, in order of priority, job opportunities, career advancement opportunities and good earnings opportunities, housing and good environment. Family and friendship connections, although a factor, were less significant, averaging a rating of 3. The lively nature of the City and cultural activities also averaged at 3. For 5 of the sample, the prospect of work in a family enterprise was very significant in their choice to stay in the Region. It appears that many of those students who have decided to stay in the South East are confident of their ability to obtain employment in the area, in spite of the restricted opportunities in comparison with Dublin. Economic 'pull' predominated over the value put on family and friends as in the other categories.

They were also asked to identify 'push' factors which would make them want to leave. Lack of career opportunities and wish for travel and experience rated overwhelmingly highly, with over 90% of those responding to this question rating both factors at 5. Lack of a university for postgraduate study figured as decisive for 5 students, but otherwise did not rate above 3. Environmental questions, i.e. housing, environment and climate did not rate above 3 in any one case.

### **Limerick students**

In Limerick, of 106 students who responded, almost twice as many students were from both the immediate locality of the university and from its commuting hinterland within the Region as was the case with Waterford (See fig 5). 18.2% (17) of students were from within a ten

All of the Limerick respondents were taking degree courses. Only two said that they would have gone to another university if a grant equivalent to the non-degree grants had been available. The Limerick students indicated similar preferences to those from Waterford with respect to affiliation to the locality: approximately 10% (9) of the students overall wished to work in the Region on graduation - 8 of these were local. 71% of Limerick students expected to migrate to Dublin on graduation and a further 14% expected to emigrate, similar proportions to the Waterford sample.

The main factors which had drawn the students to Limerick University were reputation of college and quality of course, rating 5 in the majority of cases as in Waterford. Housing also rated high, at 4, probably reflecting the good quality on-campus accommodation at Limerick. Job prospects after qualifying also rated highly, at an average of 4, a stronger association than in Waterford. Qualification through adequate points featured in a significant number of cases (12 respondents), points requirements in Limerick being lower than the Dublin Universities. It appears that Limerick students comprise in the main three groups: one group of local students attending for mainly economic reasons, another of students from outside the Region who favour the ethos and approach of the University and have confidence in its potential to make them employable, and finally a smaller group who attend because they had insufficient points for their first choice.

In Limerick, as in Waterford, a substantial majority of respondents planned to work in Dublin on qualification. Informal interview with students in both Limerick and Waterford suggested that the questionnaire failed to pick up the significance of the wish of many students to migrate in order to experience life in a large urban centre. This factor appears to be contributing considerably to the very high rate of migration to Dublin. The extent and the fashion in which which the young feel hampered by the culture of the provincial and rural areas outside Dublin would be an issue worthy of further investigation.

Significant returns were made with respect to level of parental education. Of degree-level students in Limerick originating from Limerick, over 39.68% (42) of the sample had at least

may be a significant factor. The lower numbers of graduates within a region would therefore tend to be a self-perpetuating state.

### **Graduate Responses**

The graduate sample (aged 21-25) consisted of church members in 4 Waterford and 5 Limerick area parishes, and therefore may have omitted some non-national graduates, in particular medical staff, who have migrated into the area. Over 95% of the population are members of their parish churches so the sample was considered otherwise acceptable. The older age groups were considered less relevant because degree-level courses were not available in significant numbers in Waterford until 1985. This questionnaire (Appendix 3) investigated life histories of graduates who are now working in Waterford.

Of one hundred questionnaires issued in Waterford, seventy two replies were received. Of the Waterford sample, 8.5% (6) had originated from the South East, studied in the South East, and were now working in the South East. 6.9% (5) had originated in Waterford, studied elsewhere and then returned to work in the area. Of the remainder, 6.9% (5) had migrated to Waterford to study and had started work there on graduation and ( 77.5% ) 56 had migrated to the South East from other regions. The three groups who had connections with the Region, either by reason of origin or place of study, are disproportionately larger than their representation in the total student cohort.(fig. 4).

Of one hundred questionnaires sent out in Limerick, 82 replies were received from graduates working in the Region. 11.5% had originated in the Limerick area, had studied there and remained to work. 4.1% had originated in the area, travelled away and returned to work. 8.2% had migrated to Limerick to study and had remained to work and the remainder, 66.2% , had migrated as graduates to work in the Limerick area. A higher proportion of graduates entering the workforce had previous connections with the area than was the case in Waterford (fig. 4).

Responses were sought to a series of questions seeking to identify "pull" factors, which had

group rating them at 4 or 5, and only 3% of the Limerick group rating them above 3. Environmental and locational aspects, such as climate, good environment and cultural facilities also featured more strongly in the Waterford responses, with more than 50% of respondents rating at least two of these factors at 4 or 5. Proximity to Limerick University was most frequently rated at 3, but the presence of the RTC was not rated significantly in Waterford, being rated positively in only 6 responses.

Of the 'push' factors, loss of job, lack of career prospects and better wages offered elsewhere were rated highly and in that order of priority. Malecki (1991) measured loss of job as a push factor, and found over 10% of respondents prepared to stay in the area after loss of job. The Irish graduate workforce appear to be exceptionally mobile, with only 4% stating that they would remain after job loss.

The attributes of the graduate group differed in their preferences to the undergraduates in a number of respects. Career and earnings opportunity ranked highest again, rating a maximum 5 in all but ten responses. Good environment figured more highly in the Waterford sample, rating a mean of 4 as did housing availability. Climate figured in the South East, at a low value of a mean of 2, but did not figure at all in Limerick.

The question remains as to what degree does a university affect employment levels in its area. Research has shown that graduate labour supply is associated with universities, that some categories of industry, in particular high technology, require such a labour supply. Only two high technology firms are currently located in the South East. In informal interview with management of one of these firms, it was stated that their location had been a poor decision, and that they should have located in Dublin. Main benefits cited were 'comradeship' - the proximity of other similar firms and their suppliers - and the lack of a university and airport in the region. They remained in the region only because of their ownership of a building and the difficulty of relocating staff. Firm formation, and the necessary expertise to successfully run a new firm, have also been shown to be associated with universities. The region without a university is thus at a constant competitive disadvantage.

American university model (McGinn, 1992): Extensive undergraduate placement in Ireland and abroad, international linkages with other universities, research, sponsored chairs and joint research programmes were established. A link has recently been established with the Asahi Chemical Company in Japan, with undergraduate and post graduate scholarships. UL works closely with Shannon Development (state-sponsored development organisation for the Mid West), the President of the University being a board member of Shadco. Research chairs are sponsored by Analog, Wang and Westinghouse, along with nine other companies. Undergraduate programmes and taught Masters programmes are involved with local branch plants of international companies. The Local Area Networks Research Co-operative is an EC funded unit for assisting manufacturing automation in the region, but the overwhelming emphasis is on links with large international companies. A number of EC programmes are run through the University, including COMETT, ERASMUS, LINGUA, TEMPUS, EC, JOULE. In 1980 the University established an Innovation Centre, which selectively assists entrepreneurs to develop a product idea and bring it to market stage. Thirty two new companies were established in the first six years. A programme is also run to match technical innovators with a graduate with entrepreneurial know-how, funded for one year to bring a product to launch stage.

Interviews with Director of Plassey park and with a number of firms confirmed that the supply of graduate labour was central to their location and their relationship with University. The proximity of Shannon airport and of other high tech firms were also cited as decisive factors in their location decisions. By contrast, of the two high tech firms existing in Waterford one firm is contracting rather than recruiting. The other company suggested in interview that a Dublin location would have been a better choice for them. Particular problems were staffing, roads infrastructure and the feeling of isolation without similar firms in the neighbourhood.

The approach taken in the founding of Limerick University and the Technology Park within which it is situated has been explicitly and comprehensively based on 'accepted wisdom' of early research on the high technology phenomenon. The mission of the university is national rather than regional i.e. "to produce the graduate expertise needed to contribute to the Irish

of strategic benefit to the economic and social development of Ireland and the European Union.

(University of Limerick, 1993)

Plassey Park has three major industrial tenants, currently employing between 600-800 persons. This does not represent any significant growth since 1980, by which time 4 high tech companies were already sited adjacent to the University. AST, a US company which is the sixth biggest PC manufacturer in the world is establishing assembly and distribution in Limerick in 1994, initially employing 600. Dell Computer Corporation employs approximately 400 people assembling PCs from imported components. There are however also 45 small local firms also clustered on the site, employing from 2 to 45 persons. Evidence of links nationally and in the wider region is stronger. A research contract income of £5m within the Park was reported in 1993.

Energetic fund-seeking both in Ireland and through an American based foundation, along with loans from the World Bank and European Investment Bank, have funded an ambitious programme of expansion of the University. The building of a purpose-built concert hall (the only one in Ireland), the location of the National Chamber Orchestra of Ireland in Limerick from 1994 and the acquisition for the University of the Hunt Collection complete a strategy for the creation of a prestige institution based strongly on American models. The US model extends to the introduction of 'Co-operative Education' - extensive industrial placement of undergraduates as part of their training. Limerick are consciously using this programme to strengthen personal networks in Ireland and abroad (source: interview with John McGinn, Director of Plassey Park). Regional connections are also being built, with the President of the University being a member of Shannon Development, Ireland's only regional development agency. The foundation of a chair in tourism was a reaction to the importance to the Mid West of the tourist sector and the acknowledged need to improve the regional as well as the national product.

Questions arise in relation to the strategy implemented at Limerick. After 20 years of establishment, the high technology sector is restricted to a small number of large branch plant operations with a relatively restricted research functions. The single-minded pursuit of

the grants were based (*I.D.A.*). Competition with Scotland and other similar areas, in particular has led to upward bidding of grants and incentives in the past five years. An E.S.R.I. survey in 1993 showed that each job in the computer industry directly generates two other jobs. In electronics the ratio is two to one and in indigenous manufacturing each job creates an estimated four other positions (*E.S.R.I.*).

After the traumatic closure of much of the earlier generation mainframe assembly capacity from 1991-1993, including the scaling down of Wang at Limerick, much political effort and grant expenditure has gone into securing into Ireland of 'new generation' operations such as Dell's and AST. Increased speed of product obsolescence, along with the concentration of production in the hands of smaller numbers of larger companies, suggests a future of seismic upheavals in production. The industry's main contribution to the Irish economy is in wage packets, given the favourable tax regime and the tendency to buy in components from other production bases such as Taiwan. The heavy reliance on this sector, particularly in small urban centres such as Limerick and Waterford, with populations in the region of only 50,000, appears to be a serious risk. The failure of Limerick to hold its urban population levels appears (*C.S.O. Census of Population, 1991*) to confirm Eade's observation that high technology development has not been accompanied by the type of urban growth associated with previous waves of industrialisation.

A further problem of the Limerick approach, pointed out by Jacobs in "Cities and the Wealth of Nations", 1984, is the finite number of potential investors and the large and increasing number of competitor locations. Given the investment at existing institutions in high technology programmes and courses, the duplication of such facilities in the South East would not be recommended.

## **Conclusions**

Investigation of the life history of students and of postgraduates has shown that migration of both students and graduates is driven primarily by earnings or grant eligibility. Where students are not eligible for grants, proximity to parental home exerts significant pull as a 'locational good'. These same effects have a different result in Waterford than in Limerick.

Limerick and Waterford are employing and retaining very few of the graduates who study within their areas. The reason for this is the perceived and actual greater job opportunities in the Dublin urban agglomeration, the attraction of the large urban centre to the young, and the culture of migration which has developed in Ireland over a 150 year period.

In many ways the profiles of Waterford and Limerick are similar, with the same problems of emigration to Dublin or abroad at point of entry to the workforce. Limerick however, because of the larger numbers in the graduating cohort, in interaction with the attraction of the University to high technology production, ends up with larger numbers of graduates and very much higher numbers of post graduate workers.

The acute problems of unemployment and emigration experienced in Ireland mean that even the choices focussed on by graduates, who fare much the best in the jobs market, do not extend much beyond job opportunity. The types of preferences described by Malecki (1992) with respect to graduates working for high technology firms are not contradicted by the Irish study. However, given the limited economic activity within the state, attributes such as restaurants and climate come much further down in the ratings of Irish graduates, and the opportunity for a job and career advancement emerges as the dominant factor.



## CHAPTER 8 CONCLUSIONS

### Higher Education and Regional Development

#### General findings

In addressing the issue of possible connection between the South East Region's poor socio-economic performance and the lack of a university in the Region, the theme which has emerged most strongly throughout review of previous studies, and in empirical work carried out for this study, is that of human resources. In particular, the guarantee in a region of a steady supply of graduates has been shown to be a requirement for many types of inward-investment plants and a significant advantage to local indigenous firms.

In reviewing literature concerning the role of universities in local development, it was observed that the approach and emphasis of studies had changed over the last three decades. In the 1960s and 1970s, against a background of economic expansion and parallel need for a more educated workforce, a group of studies focussed on locational bias from the standpoint of equal opportunity. Chapter Four of this study looked in detail at attitudes to higher education institutes in a development role, and found that an initial enthusiasm in the 1970s and early 1980s had shifted to a position of scepticism amongst some writers. The view has been put forward by a number of writers that the main role of the university is as a "signaller" to industry indicating a location of compatible high technology activity. Reports of empirical studies however have continued to substantiate the significant benefits attached to locations near universities. On the basis of the results of empirical studies of all research reviewed, it was concluded that the primary local development role of the university is as a **guarantor** of the availability of suitably skilled labour.

The benefits from the university presence noted included the attraction of inward investment in the form of high tech assembly and components plants, along with increased firm formation and a more highly skilled management and entrepreneurial layer. The Limerick

trend in high technology industry proved to be of centralisation of research and executive functions, and the decentralisation of production. Only urban agglomeration areas which can offer sophisticated service and production facilities are therefore likely to benefit substantially from local spin-off. For this reason, it is concluded that high tech branch plants may bring little more than wage packet benefits into the local economy in regions where there is no significant urban agglomeration.

It was seen with respect to Limerick, that the conscious pursuit of high technology inward investment for a twenty year period has had some success. However, in spite a number of high technology employers associated with the university and science park, and of a number of cultural and environmental improvements associated with the university, the population of Limerick City has dropped in the past intercensal period (*C.S.O. 1991 Census*). The university high technology strategy on its own has not been able to solve wider socio-economic problems in the Irish context. Benefits of the University to its Region have included palpable gains in some sectors of employment and greater access to university education for the Region's young people.

### **Graduate migration in Ireland**

#### Findings

The Irish situation differs from cases reported in previous studies such Van de Meer and McDowell, because of the context of the prolonged trend to population in the country, which currently has a population of about one third the size of its 1840 population, with some areas having lost half their population since 1941 (*C.S.O.*). In investigating the formation of the local graduate labour force a very strong tendency was found towards student and graduate migration to Dublin. The second most common trend was to leave the country. Statistics suggested that a 'fulchrum effect' exists, whereby in-migration occurs when opportunities inside and outside the home area are equal, and at other times the relative balance between positive and negative employment opportunities inside and outside Ireland determine the inflow or outflow of population. It was found that graduates are the most footloose section of the population, with up to 60% of some graduate cohorts having emigrated in recent years. Graduates were found to be strongly attracted to larger urban areas, whether in Ireland or

awarded to the degree sector, which makes students heavily dependant on parental support. They are therefore perhaps less likely to form permanent affiliations away from their home area, whether through housing or personal relationships, than students in the U.K. for example. Nevertheless, a small but significant number of students who originated outside the area remained in the area on qualification. Job availability rated as the primary factor which decided them to remain, although environmental factors also rated for some.

Degree courses offer a greater attraction to local students than to others, as they can attend at a lower cost by staying in the parental home in spite of lack of comprehensive grant support. There is evidence, corresponding to Van de Meer's suggestion, that students who study in their home area are more likely to continue to live and work in the area after graduation.

### **Case Study**

#### **Conclusions of study**

Having established the importance of the relationship between regional development and the numbers of highly-skilled people within the local labour force, with the university in the role of guarantor of such a labour supply, the theme of the formation of the graduate segment of the labour force was concluded to be of central importance. The main issue taken was the influence of the presence of a university on the formation and maintenance of the segment of highly-skilled personnel in the region. Review of published statistics showed that a close correlation existed between the presence of a university (or otherwise) and level of both participation and attendance at third level and with levels of local graduate employment. South East Ireland, which only has limited degree-level courses through the Regional Technical Colleges, was found to have performed poorly in all these respects in comparison with similar regions which have universities. While other regions with low graduate employment i.e. the Northern regions and the Midlands, have evident locational and other disadvantages, the South East, with its manufacturing tradition, food production sector and good portal access to mainland Europe and the UK would be expected to perform better.

and diploma students from the Region migrated to Dublin or out of Ireland on completion of their qualification. This issue requires further investigation. The pointers within this thesis are that the area of investigation should be the extent to which the types of courses offered in the Regional Technical College match actual production needs and employment opportunities within the region. For example, the very large number of business studies places offered, as against the lack of an engineering degree, might be queried.

### **Formation of Graduate Workforce**

Fieldwork confirmed that a relationship exists for students both from the university and non-university location in both city's surveyed, between home origins and job locations after graduation. Responses to questionnaires concerning 'push' and 'pull' factors provided information on the 'life histories of graduates and students. This information confirmed that locational variations in suitable employment chances were the primary determinant of share of graduate intake by region.

Survey indicated that almost double the percentage of local students were in the Limerick sample than was the case at Waterford RTC. Limerick University had a relatively and actually larger group of local students than Waterford RTC, costs of studying at university away from home acting as a deterrent to applying elsewhere, while grants acted to push RTC students out of their own regions. Points requirements in Limerick were lower than in Dublin Universities and a number of respondents had only attended because they had failed to qualify for the university of their choice. A greater percentage of the graduate workforce in the Limerick area had local connections than in the case of Waterford. Associated with the larger numbers attending in the Mid West, total numbers of graduates entering the workforce in Limerick were more than double the numbers in Waterford.

In the cases of both Waterford and Limerick the relative amount of students who originally came from the region where they started their third-level education and, after graduation, stayed in the region to find a job, was greater than the proportion of students coming from outside the region and staying there after graduation, when related to the total graduate

appropriate employment opportunities for graduates and from the greater number of relevantly-skilled graduates produced by LU. Limerick's explicit strategy of training a graduate work force with skills appropriate to high technology industry appears to be reasonably successful in national terms, in that the University's own records show that over 84% of students have obtained employment in Ireland in the past five years, a period when graduate migration averaged 38 % per annum. In local terms the success is less clear, in that it is not possible for us to know what would have happened had similar resources been dedicated to an alternative development strategy based on development of indigenous development.

The implications of these findings were that the university region has an ongoing inbuilt advantage in attracting and retaining a strong graduate workforce. However, this advantage is clearly conditional on the availability of suitable employment opportunities in the university region. Very extensive research has been reported on the employment-generating effects of the university on its locality. In Limerick likewise a significant although limited number of employers in the area strongly associate their presence with the University. The jobs provided by these employers allow the Mid West Region to retain a larger number of graduate employees in the area than would be the case in a non-university area. However, the supply of graduate labour is the initiating factor, as the companies concerned would not have set up in a non university region. In Ireland, Dublin is an over-dominant urban agglomeration, absorbing well over half of the country's graduates. Provincial centres, even with universities, can only compete poorly with its attraction. Given the ongoing immigration to Dublin, this disparity will continue to increase until such time as other factors, possibly environmental deterioration of Dublin, come into play.

It therefore appears that the Limerick experience, for the above and other reasons does not offer a suitable model for the South East. This view will be further discussed in the following Chapter.

#### **Grants taking students out of Waterford area**

studying locally within the RTC system was provided by the ESF grant structure, which gives strongly preferential grants to students on two year courses studying away from home. An emphasis on nationally popular courses such as 'legal studies' and business studies, at the expense of apprenticeships and production oriented courses which might appear better suited to the region's industrial profile, has also been noted (Sweeney, 1992). This phenomena can also be seen in relation to Sligo RTC , the other RTC catering for a non-university region, suggesting that in the absence of a local university as a polar opposite, the RTC mission becomes blurred and ambiguous. The presentation of courses which direct their appeal nationally rather than locally has also had an effect on the student intake, with very dignificant numbers of students having cited course preference as a factor in relation to choosing to study in Waterford.

#### **grants leading students to do vocational courses**

The disparities between the vocational and degree-level grants systems also act to attract students into the RTC rather than the university sector. Approximately 50% of third - level students in Ireland are carrying out non-degree courses. This is the highest level of non-degree third level in Europe (Clancy, 1994). A majority of local students from the Waterford sample indicated that they had qualified to go to university, and had entered the RTC in order to avail of grants, two year courses being eligible for non-means-tested ESF funded grants.

#### **Summation**

**The University in Limerick is providing a stream of potential graduate recruits. This supply has attracted inward investment and some spin-off development, thereby establishing a demand for graduate employment. Levels of migration indicate that demand is not keeping pace with supply.**

**In Waterford a very small supply of graduates is available. In courses provided there is no clear orientation with regard to providing skills keyed in to existing local production,**

It is evident from the findings of this study that regions such as South East Ireland are almost entirely excluded from some forms of development, in particular high technology production. In other respects, such as local firm formation and service industries, such regions also suffer competitive disadvantage. It is considered highly probable that the particularly poor economic profile of the region is accounted for by the lack of a university. In particular, the continuous depletion of the highly-skilled element of the work force is of concern. The original hypothesis, that the region without a university is trapped in a spiral of decline, and that the barrier to its development is insuperable, is not conclusively proven. It cannot be entirely excluded that another development model might succeed. It can be said however that with a university, the region would be better equipped to address its problems and would have broader options regarding the types of development which might succeed. Without a university, the region is limited in its scope for new industry.

General implications are that degree-level (and post-graduate) institutions are a basic requirement for a region if it is to maintain or develop its socio-economic progress. Without such facilities, a region is at an ongoing and cumulative disadvantage to university regions and will decline in relative prosperity.

## CHAPTER NINE

### STRATEGY AND RECOMMENDATIONS

#### **Previous Prescriptions**

Previous studies have made detailed proposals for measures to address the lagging development of Waterford and the South East. In particular, Murphy and Bannon made detailed proposals in their 1991 study, *Strategies for Influencing the Location of Business and Office Employment, A Case Study of Waterford*.

Their recommendations were divided between regional-local measures which could be implemented within the region unilaterally and national measures, which would require lobbying and promotion at national level. Local measures proposed included infrastructural improvements in relation to airport access, port development and the setting up of a 'business park', economic measures including programmes to encourage greater use of local services by firms and appointment of technology transfer 'middlemen', cultural and environmental improvements, human resources measures to improve skills levels in clerical and administrative occupations, and promotional activities.

The main nationally-based measures proposed were implementation of the Barrington report (creation of a regional authority, greater regional autonomy, greater powers for local authorities) along with the designation of Waterford as the regional centre and acceptance of Waterford's case for university level education. It was proposed that a local Economic Development Board, including local authority, commercial and Industrial Development Authority representation should co-ordinate implementation of the measures.

These recommendations followed on from an earlier report by Bannon and Fallon in 1985. At that stage a recommendation was made for the establishment of a Technological University and Science Park, on the same model as was being developed in Limerick. The more recent report has a new emphasis, although only by implication, with problems of leadership in the area. It is emphasised that " to achieve this, one voice only should be heard



cooperation mechanisms for agencies and other actors in the field, to the mutual benefit of all"

Of the many recommendations made in the report, airport investment had been achieved, by a joint initiative of Waterford Corporation and a group of local businessmen. Portal investment has also taken place at Waterford, and a plan has been drawn up by Kilkenny County Council for location of a number of strategic industries in the area. A Canadian timber processing firm is seeking permission to locate its European operation in the plan area.

The other policy initiative taken in relation to the lagging technological capabilities of the South East was the 1987 SERTEC (South East Region Technology) pilot project, initiated by the government science body, EOLAS. The SERTEC Report concluded that "a careful balance must be struck between a policy of acquiring technology from outside the Region and trying to develop an indigenous technological capacity in selected core or strategic areas. Until some internal capacity exists a region will not be able to absorb and apply inward transfers of technology." The Sertec report highlighted the need for improvements to the regional airport and for the foundation of a university as basic requirements for the proposed strategy.

In 1987 the EC funded Pilot Science Technology Programme was launched to produce a development programme for infrastructure in the Region as a basis for development. A Technical Committee and an industrial Committee was formed to assist in the development of the programme, which is now operated by the SERTEC Board, a sub-Committee of the Board of Eolas. One element of the programme was a pilot technology audit scheme for small businesses, which led to the subsequent launch of the National Technology Audit Programme. Industrial liaison officers were also appointed to Waterford and Carlow Regional Technical Colleges.

A range of measures have been introduced under the SERTEC programme, including a CAD Bureau, and Technology Transfer Centre and a Pharmaceutical Laboratory. Detailed

for 6.7 per cent of total business R and D expenditure in the State. The fall in expenditure in the South East contrasts with an increase of 34.6 for the State as a whole. The actual gap between the South East and other industrial regions for both higher education R and D expenditure and Research Contract income to third level institutions significantly increased over the period from 1988 -1990. (SERtec, 1990, Eolas, 1991)

Whilst Bannon's emphasis was on the need to develop a stronger service sector and the SERtec Report placed a more direct emphasis on industrial development, both reports looked to the Limerick model. Bannon's recommendations overwhelmingly concerned measures to make the region more attractive to incoming industry, rather than seeking to identify the specific immediate needs of existing industry. The SERtec report likewise proposed measures which conformed to the formulae of the day and in particular of EC programmes, rather than observing and identifying on the ground the opportunities for development existing in the South East, and pinpointing any barriers to development prevalent in the Region .

It should be asked why, after over ten years little progress has been made with regard to the main proposal of the above reports, the establishment of a university, particularly since higher education has expanded and is predicated to expand further by many thousands of places (See figs. 5 and 6). Firstly, it is felt by management of Waterford RTC that any resources put into higher education in the Region should be channelled through the College, as they believe that the RTC is capable of being developed to fulfill the higher educational needs of the Region. The idea of a new university is also not likely to be welcomed by existing universities, who see it as a potential competitor for resources.

Secondly, and more fundamentally, while there is a clear demand for a university from all parts of the Region with active if sporadic public campaigns emerging, a negative and competitive relationship between the counties has undermined progress. Government will not take seriously and can easily resist approaches from a Region which is internally divided on location of the university. A number of alternative paths exist in relation to this problem. Imposition of a decision by central government is most unlikely. Regional agreement to out the decision in the hands of external consultants has been proposed, but failed because of lack

## **Prescriptions; formulae; approaches**

In addition to these local proposals, a number of general socio-economic commentators have discussed the development issues with which this thesis is concerned. The most relevant of these are reviewed as reference points for the recommendations to be made.

*The Irish Economy in a Comparative Institutional Perspective* written by L. Moset at the invitation of the National Economic and Social Council in 1993, identifies institutions and economic structures which constrain development and continuous high emigration as interacting with agrarian/paternalistic family structures, international phasing of economic activity and the negative impact of British colonialism. Moset shows these interacting factors as acting as a vicious spiral in negative cumulative processes. Whilst his study is not prescriptive, its findings provide reference points in any attempt to develop socio economic change in Ireland.

In his 1994 book *Chasing Progress in the Irish Republic*, John Jacobsen focusses on the local elites in Ireland, drawing attention to the highly dependant model chosen with its high degree of reliance on multinational capital. This approach is convenient to elites in that it puts the focus of attention on decisions of external actors rather on their own. Jacobsen asserts that the adoption of this route is associated with " a high degree of deference...a high propensity by non-elites to defer to policy prescriptions." He criticises the IDA for their failure to account for the long term consequences of their chosen route.

Joe Lee, in his socio-economic history of *Ireland- 1912 - 1985 Politics and Society* (1992) interprets Ireland's economic stagnation as resulting from a "dependency syndrome" which is a post colonial legacy. He concluded that 'Irish economic performance has been the least impressive in Western Europe, perhaps in all Europe in the twentieth century' and links poor performance with a damaged national identity. Lee writes at length of the cultural and psychic damage inflicted by colonialism:

The connection between culture and material performance in general cannot be quantified.... In however complex and convoluted a way, it is quite possible that the manner

Lee points to the many smaller European countries who have performed well and kept their language or languages alive.

Raymond Crotty, in his essay 'A System That Cannot Deliver' *The Jobs Crisis*, 1993, explored Ireland's unique position in having post colonial economy with many third-world features, but a workforce which has access through emigration to first world wages and social security systems. Crotty also indicates the extent to which emigration has acted as a safety - valve for Ireland's local elites, removing from the scene a layer of young and discontented people who would have otherwise acted as a force for change. Crotty points out that

Ireland's failure to provide a livelihood for its people is unique in human experience...fewer people get a livelihood in Ireland now than at any time in the past 250 years, a period in which the world's population and its workforce have increased over sevenfold. The number at work is now only one third as many as 150 years ago.

Crotty pointed to the inheritance by Ireland of a socio-economic structures designed to exploit it rather than to develop it. He observes that the other 140 or so former capitalist colonies equally have been unable to develop. In addition to its problem of externally determined incomes, Crotty states that high EC imposed food prices that take up twice the amount of income proportionately in Ireland than in the average EC country. Because property is virtually untaxed, with no local domestic rates, a disproportionate tax burden falls on labour. A further barrier to development noted is the transferring by Irish banks of savings abroad. Crotty proposed that Ireland should default on the interest on the National Debt, introduce land taxes and use the revenue to pay a national dividend.

In *Wood Quay* (1988) Thomas Farel Heffernan offers an exposition of Irish Local Government which he describes as an offshoot of British local government, with more limited powers of self-determination. The powers were further limited after independence, with central controls increasing yearly. In 1925 the Local Government Act conferred on the minister for local government the power of appointing commissioners to take over the duties of local authorities and to postpone elections. In the 1930s the city manager system was

...The centralisation of control in the 1920s, however nobly motivated, left the people without strong feelings about local government and without the power to secure the protection and benefits of government in the normal democratic fashions. The centralisation of control furthermore turned elected officials into consumer advocates rather than legislators... In 1977 the abolition of the domestic rate was one of central government's most important incursions into local government's freedom.

Jane Jacobs, in *Cities and the Wealth of Nations* (1984), groups Ireland together with southern Italy, Greece and Puerto Rico as 'transplant regions' who depend on attracting industry in the hopes that this will reproduce the "self-generating and self-ramifying economies that city regions have" Jacobs points out that the wages input of branch plants is recycled into imports from distant cities as transplant cities do not replace imports with their own local production. " If they had been doing so they would be generating industries and transplants themselves, instead of trying to rely upon relatively self-sufficient industries spilled out from far-distant cities." Jacobs sets out as an example of a successful emergence from "transplant" to producer region in Taiwan. She cites as the key conditions the know-how garnered by local people from working in branch plants coupled with the one-off infusion of investment capital supplied through the "Hands to the Tiller" programme in 1956. In this programme feudal landlords were expropriated and obliged to invest a portion of their compensation into manufacturing. New factories and workshops were thus set up, and Jacobs quotes an American toy maker as saying in 1979 "We had a lovely little operation running there for over a decade but we had to close it down last year because we couldn't get anyone to work for us. The place has become too damned industrialised and they want too much money." In relation to Taiwan, Jacobs commented further

Maybe what happened in Taiwan can't be replicated elsewhere. Maybe the improvisation of city capital that worked there wouldn't work out in another place. But this is the nature of successful economic improvisation of any sort: if it works, it isn't because it is abstractly or theoretically "the right thing" but because it is actually practical for the time, the place, and the resources and opportunities at hand. Successful improvisations give economic life most of its surprises.

The above commentators all have pertinent things to say in relation to the predicament of the Region and the wider problems which are national or international in context.. The principle thing which is apparent with regard to the South East, is that whilst the region does have

programme which is offered as a solution, this thesis therefore proposes a number of measures which respond to currents of demand which already exist amongst the population, along with a consultative/creative approach within which the community can be allowed to reach its own answers.

As with Bannon, measures proposed include local and national measures, but also international initiatives.

## **Recommendations**

### International

1. Firstly, in the international sphere, Irish citizens living abroad should be enfranchised. This measure, in response to an extensive campaign by emigrants, would help to concentrate the minds of Irish politicians as to how more people could find a livelihood at home.

2. Secondly, taking the model of the Irish soccer team, the Irish diaspora should be trawled for those able and prepared to address specific challenges of socio-economic development as they arise. Still taking the model of the Irish soccer team, the best available expertise should be brought in irrespective of nationality to co-ordinate teams of 'trouble - shooters' looking for new ways of addressing problems of employment and development .

### National

3. At the national level, a high level of devolution of powers to local authorities, including their powers to raise rates, should be carried out. Fully democratic and appropriately funded regional authorities should be created. Urban councils and parish councils should be reinstated for urban and rural areas respectively, incorporating representatives of existing community development bodies. This reform, or any substantial form of local government is most unlikely to happen without extreme electoral and

5. The student grant system should be reviewed and adjusted so as to increase the chances of students of attending the most appropriate course in the most appropriate location.

6. Models and prescriptions for the solution of the problems of the South East should be set aside in favour of a flexible and responsive approach which fosters and feeds local development improvisations and is prepared to innovate and improvise. Criteria-based funding decisions should be replaced by quality-based decisions.

#### Regional

7. Hurling, gaelic football and other competitive sports should be reorganised on a regional rather than a provincial basis. M.E.P. constituencies should be redraw to co-ordinate with Planning Region boundaries.

8. Trading and cultural links should be promoted between those regions which are currently direct competitors for inward investment, e.g. in Scotland and in Portugal.

9. A computerised data base of graduates prepared to attend interview for employment in the Region should be created, and a fund established to assist candidates who have emigrated to return for interview.

#### Local

10. A site and buildings should be offered in the South East Region for an Irish language university, to cater for the increasing numbers who are passing through a rapidly expanding Irish language primary and secondary school sector. This university should include schools of design, crafts and building conservation to cater for an established unfulfilled demand. Emphasis should be on the quality of courses, with small student numbers and scholarships for all places.

11. Local industry should be given 'education vouchers' which they can cash in at

13. Kildalton College in Kilkenny should be developed as an national agricultural research station and agricultural and horticultural college with emphasis on sustainable farming.

14. Evidence in Ireland is that in it is possible to foster successful small groupings of small scale craft manufacturers, often in remote areas. High quality niche manufacture, with a strong export component, has been shown to be feasible. For this to be sustained and replicated it has been shown that a training input is necessary. Where craft producers are working, they should be provided with training premia to assist with on-job training, or where a niche exists, small crafts colleges should be established in smaller rural towns.

15. The benefits of Credit Unions to local development should be promoted.

The above proposals are responsive to established demands. It is not envisaged that all or any of the above proposals can, will or have to be implemented. They are recommended as possible 'doorways' to enter. Once implemented, it is likely that any of the above measures would open other, unforeseen opportunities, which cannot be anticipated in advance, and which should be taken up in an opportunistic fashion.



## APPENDIX ONE

### LOCATIONAL ATTRIBUTES SOUGHT BY MOBILE INDUSTRY

Numerous studies have investigated the location specific attributes which are required by 'inward investment' branch plants. Factors required for any one specific development may be unique: companies are likely to undertake extremely detailed studies to determine the 'physical fit' requirements of the precise operations concerned (de Meirleir, 1988). However, a number of factors stand out as being close to general requirements for any development which uses sophisticated production technology or which is involved in the production of high technology products. The following studies were reviewed to identify constant or general factors which have emerged from empirical research.

- Ady (1986) *Criteria used for facility location assessment*
- Begg (1988) *High Technology and Innovative Environments*
- Eto, H and Fujita, M (1989) *Regularities in the growth of high technology industries in regions*
- Eolas (1988) *A Study of Technology Parks and Technology-based Regional Initiatives and*
- Malecki and Bradbury (1992) *R and D facilities and professional Labour Force Dynamics in High Technology*

Categories of attributes were broken down into the following:

- location
- physical infrastructure i.e. transport and energy networks
- human resources
- environmental and cultural
- financial i.e. grants and costs

All of the above categories were considered in all of the above studies.

In terms of a priority, 'human resources' i.e. provision in the area of appropriate skills, rated highly in all studies. Universities were specifically mentioned in all of the above studies, with the exception of de Meirleir who refers to human resources and skills availability in general terms. Universities were rated as an important attribute by both companies and employees (Malecki and Bradbury). Where 'ranking' or evaluation of factors was carried out, skilled labour and/or the university presence was ranked in the top five factors in every case.

## APPENDIX 2 UNEMPLOYMENT

The conclusions of investigations into student migration are that this form of migration is not significantly different to other forms of peace-time migration, in that it is earnings and employment-lead and that the opportunity which has the primary effect is employment.

Examination of the 1991 Labour Force Survey shows that distribution of qualifications is heavily weighted towards those who have jobs. Approaching three-quarters of those who were unemployed had either no qualification or an Intermediate or Group Certificate, whereas this was true of less than half those at work. Over 20% of those at work had third level education, compared to less than 7% of the unemployed. About 47% of the long-term unemployed were without formal educational qualifications, compared with 24% of those without work for less than a year. Only 12% of the long term unemployed over 35 had attained Leaving Certificate or above.

Unemployment for young people was however acute, of 294,200 young person in the 1990 labour force, nearly 20% (57,000) were unemployed. Nearly half of these had no qualifications whatsoever. Of those who had left school with the Intermediate Certificate at 15 almost 27% were unemployed. Less than 8% of those with third-level education were unemployed.

These statistics, whilst they associate unemployment with low educational attainment, do not mean that raising overall attainment would reduce unemployment. The figures may be to some extent accounted for indicate that in a ferociously competitive situation regarding jobs, 'qualification inflation' had occurred with employers taking on graduates into relatively low skilled positions. However, a situation where almost 130,000 young people (almost 44% of young labour force participants ) had no qualification above the minimal group or Intermediate Certificate is clearly unsatisfactory.

Location factors:

Effect on Property Value (+/-) at Radial Distance of:

(To nearest thousand pounds)

LEAVE BOX EMPTY IF NO EFFECT

	50yds	50-200yds	200yds - .5ml.	.5ml. - 1ml.	1-2mils.	2-5mils.	5-20 mls.	max. 30 mls
Proximity to primary school	[ ]							
second-level school,	[ ]							
church	[ ]							
athletics track	[ ]							
swimming pool	[ ]							
public park	[ ]							
central business area	[ ]							
neighbourhood shopping centre	[ ]							
public housing scheme	[ ]							
private open space	[ ]							
dog racing track	[ ]							
third level college	[ ]							
public library	[ ]							
public hospital	[ ]							
private hospital/ nursing home	[ ]							

**QUESTIONNAIRE** - Your assistance in completing this questionnaire is appreciated. Your views will be treated as confidential and your name will not be attached to your form.

*Please TICK your chosen answer -*

**Questions:**

1. How far from the college is your home area ?

10 miles or less

between 10 and 30 miles

between 30 miles and 100 miles

100 miles or more

Outside Ireland

2. Were either of your parents graduates ?

MOTHER

FATHER

(tick as applicable)

3. Are you doing a degree course?

YES

NO

4. Did you obtain sufficient leaving cert. points for a university place in your chosen discipline.

YES

NO

5. If the same grants were available for degree courses as for certificate and diploma courses, would you have done a degree.

6. If there was a university in the South East would you have attended it.

YES

NO

7. If you are from the South East Region (Waterford, Kilkenny, S.Tipperary, and Wexford), do you wish to find employment in the South East.

YES

NO

8. Do you intend to do a post graduate degree or qualification.

YES

NO

9. Rate the following factors from 1 (lowest) to 5 (highest) depending on the amount of influence they had on choosing to study in the South East.

1 = no influence 2= a little influence 3= substantial influence  
4= very major influence 5= factor was decisive

family connections

housing available

good environment

good social life

friends coming too

good quality/content of course

good reputation of college

close to home

far from home

good prospects of jobs after qualifying.

I could meet the points requirements

good climate

low cost of living

availability of grant

10. If you are from the South East, give a value from 1 - 5 to the following factors as factors which would make you want leave the Region after completing your course.

more independence from family

friends are going out of region

poor housing

no university for postgraduate study

lack of job

poor environment

wish for travel/experience

low earnings

better employment opportunities elsewhere

better career advancement elsewhere

job opportunities for wife or girlfriend

poor facilities for social life

climate

cost of living

poor opportunities for further qualifications

11. If you wish to stay in the South East to work, give a value (1-5) on the reasons which make you want to stay in the region.

Family connections

Friends

housing

spouse's job opportunities

good environment

availability of job in family firm or farm

Lively City

Good Job Opportunities

Career advancement opportunities

RTC available for continuing education

low cost of living

12. Do you plan to move to work on graduation to

Dublin

Your home area

Elsewhere in Ireland

Outside Ireland

**QUESTIONNAIRE** - Your assistance in completing this questionnaire is appreciated. Your views will be treated as confidential and your name will not be attached to your form.

**Please TICK your chosen answer or fill in the gap**

**Questions:**

**1. Tick the line applicable to yourself**

I originated from the South East Region, studied in the South East Region and am now working here.

I migrated to the area to study and remained to work here after graduation.

I originate from another region and migrated to the South East to work after graduation.

I migrated from the South East to study and have returned to work.

**2. Give a value from 1 (lowest) to 5 (highest) to the following factors depending on the degree to which they influenced your decision to come to work in Waterford.**

**1 = no influence 2= a little influence 3= substantial influence**

**4= very major influence 5= factor was decisive**

Poor opportunities elsewhere

Good career opportunities in South East

Good earnings opportunities in South East

Family connections in Region

Friends living there

Good environment

Good schools

proximity to RTC

job opportunities for spouse

Convenient location

Lively City

Cultural facilities

Good facilities e.g. shops, restaurants

Good climate

**3. Would the following factors make you leave Waterford**

**Loss of job in Waterford**

**Better career offer from elsewhere**

**Spouses job loss**

**Spouses career opportunity elsewhere**



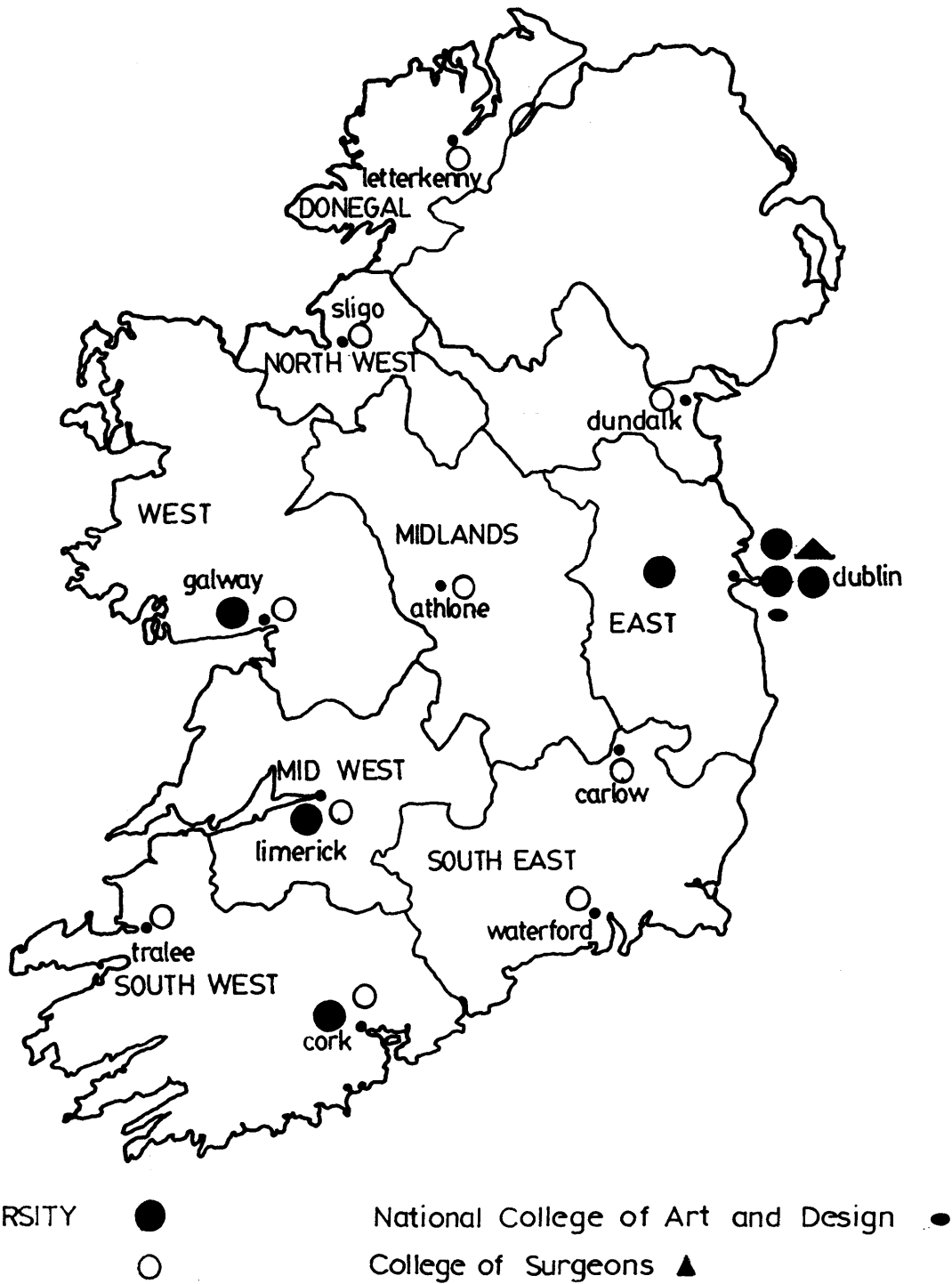
## APPENDIX 3

### Putting a price on a 'locational good' - house prices and universities

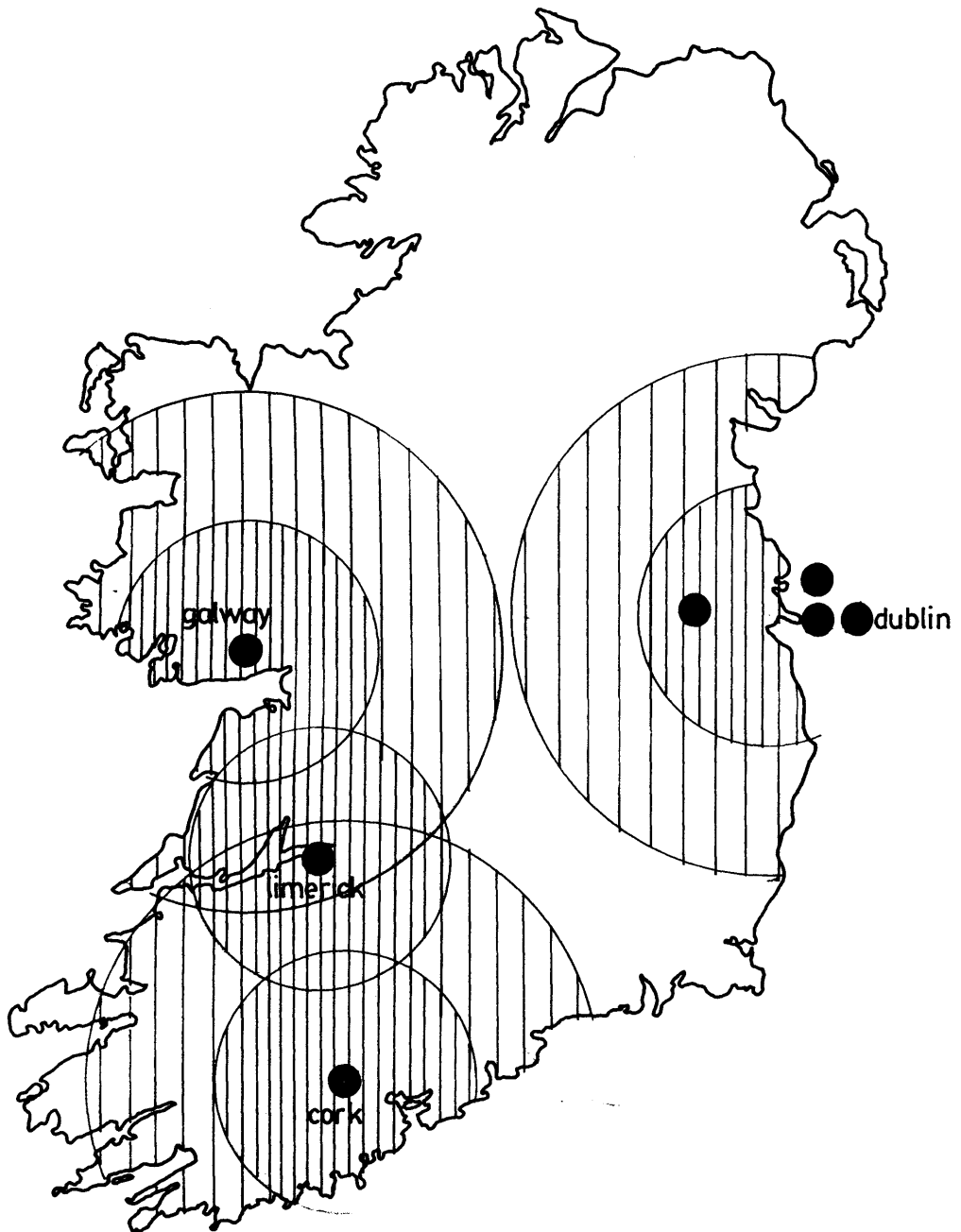
It is apparent that in current conditions in Ireland spatial access to a university is a 'locational good' of significant value to residents. Additional costs of keeping a young adult away from home at university have been estimated at between £3,000 and £4,000 per annum in studies by the Irish Students Union and by the E.S.R.I. in 1992. It would therefore be expected that house prices would be affected by proximity to a university. The effect with regard to RTC's could not be predicted.

In order to obtain an overview of the effects of a local university on house prices, as part of an example of a 3 - bedroomed semi-detached house was submitted with a questionnaire to 16 auctioneers and estate agents throughout Ireland and returned by 12. The upper estimate of the premium attached to proximity to a university was rated as £10,000 in 2 estimates in Galway, and in 3 in Dublin. The lower was a £3000 estimate from Waterford and two £4,000 estimates from Cork. The mean premium value for all respondents was £5,000. Returns were for proximity to an RTC were erratic, varying from £3,000 in Waterford to a £1000 minus rating in Cork from one respondent. Ten respondents put no negative or positive value on proximity to an RTC. Mean rating was £1000 up to a 5-mile radius.

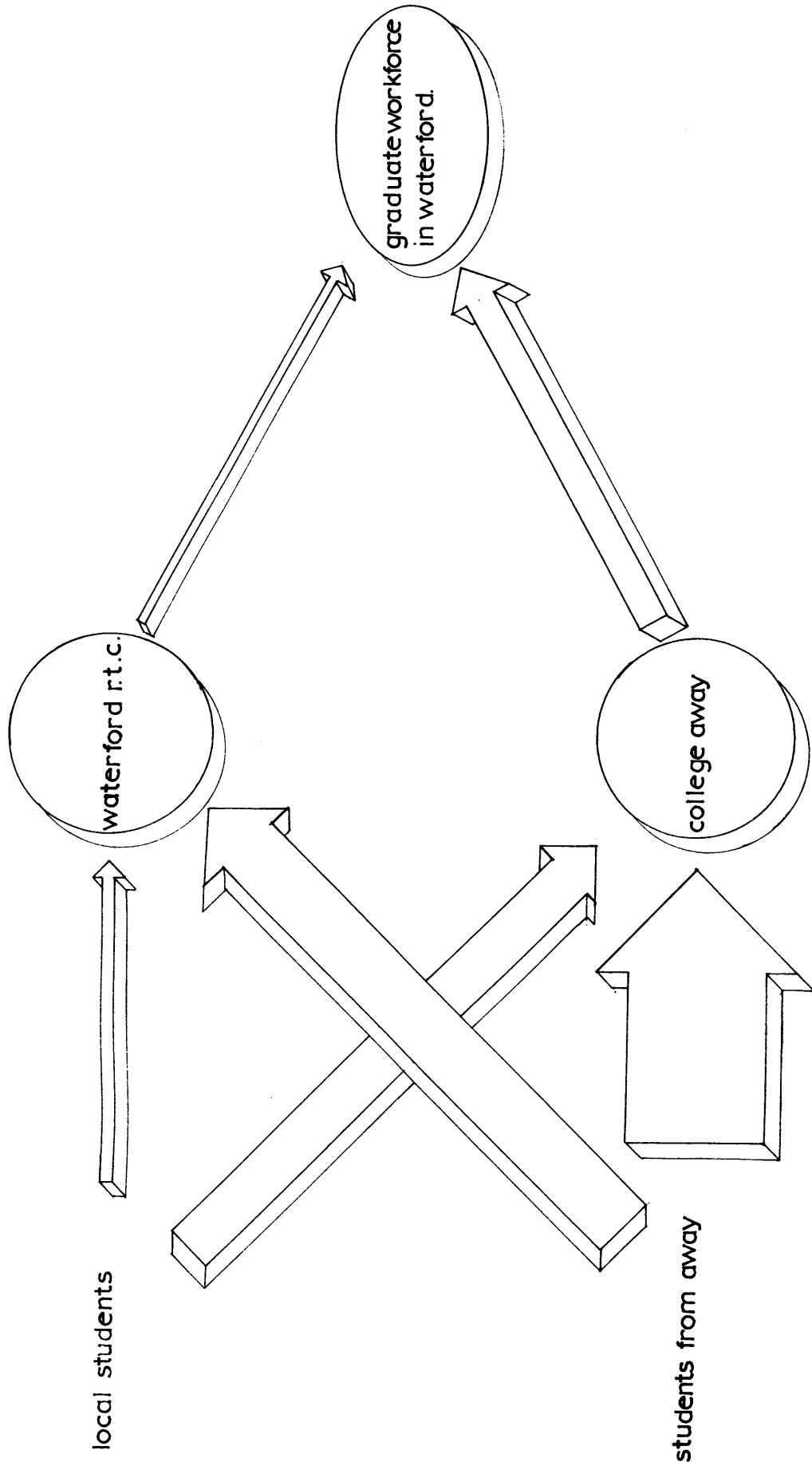
The general consensus expressed by auctioneers on the existence of a 'university premium' provides a guideline to the extent of the university hinterland. Maximum extra value of up to £10,000 within .5 mile fades to extra value of £2,000 estimated at 30 miles by some Dublin agents. In view of the findings regarding the importance of grant funding to participation and attendance choices, these premia are clearly ephemeral in nature, and dependant on the continuation of current financial and locational difficulties with regard to attendance. They may nevertheless be regarded as a barometer of both demand for university education and of the financial strains that it can impose in the absence of a comprehensive grants system.



MAP 1.  
GEOGRAPHIC DISTRIBUTION OF HIGHER EDUCATION INSTUTIONS

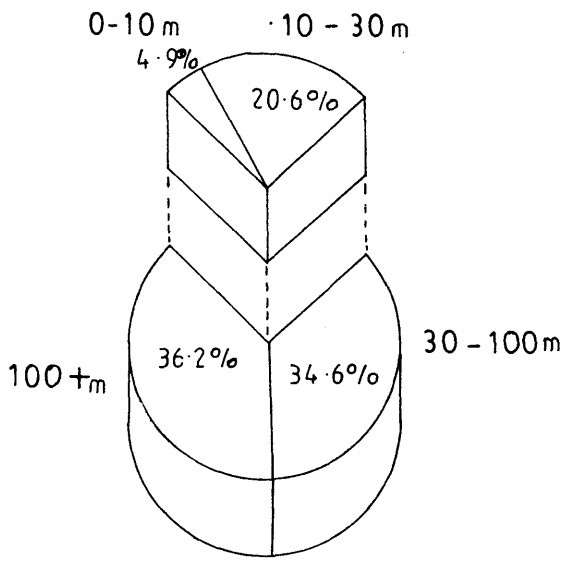


MAP 2  
AREAS WITHIN 30 & 60 MILES OF A UNIVERSITY

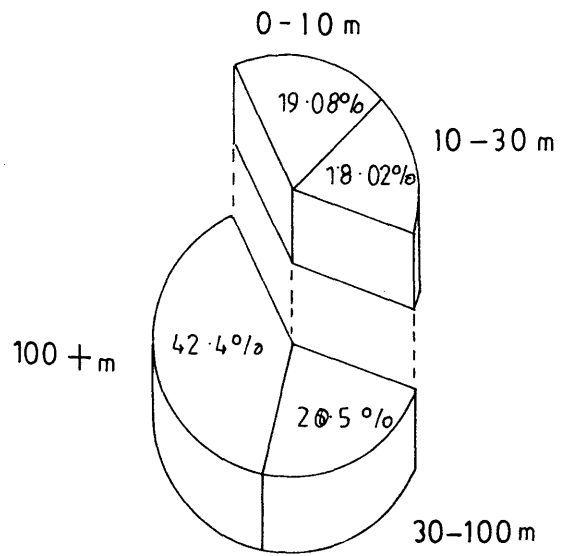


FORMATION OF WATERFORD GRADUATE WORKFORCE

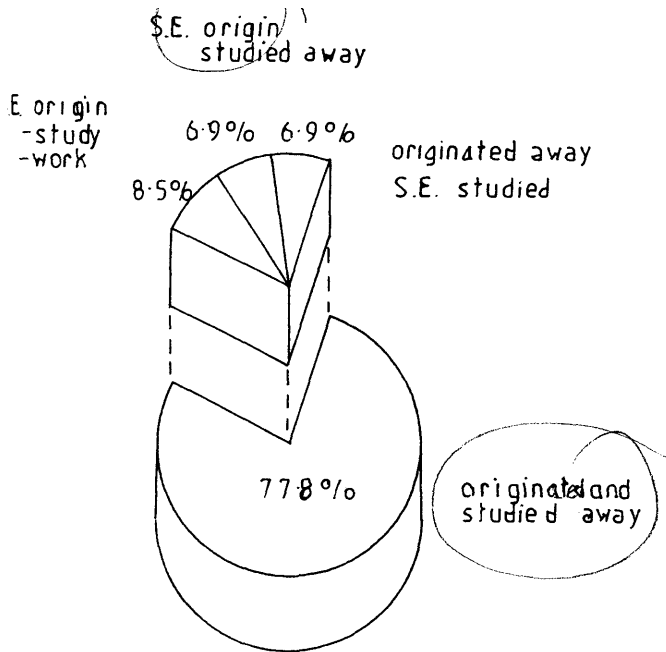
FIG No,3



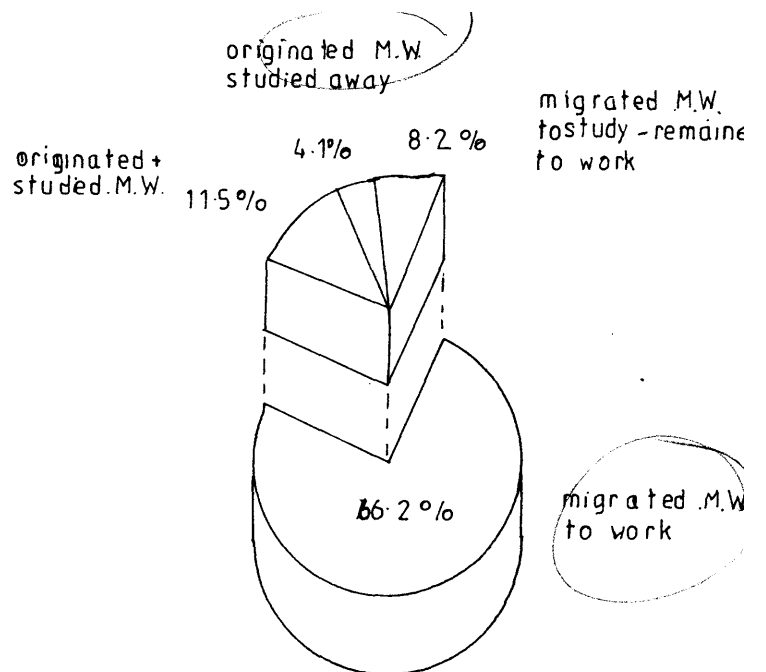
ORIGINS OF WATERFORD STUDENTS



ORIGINS OF LIMERICK STUDENTS



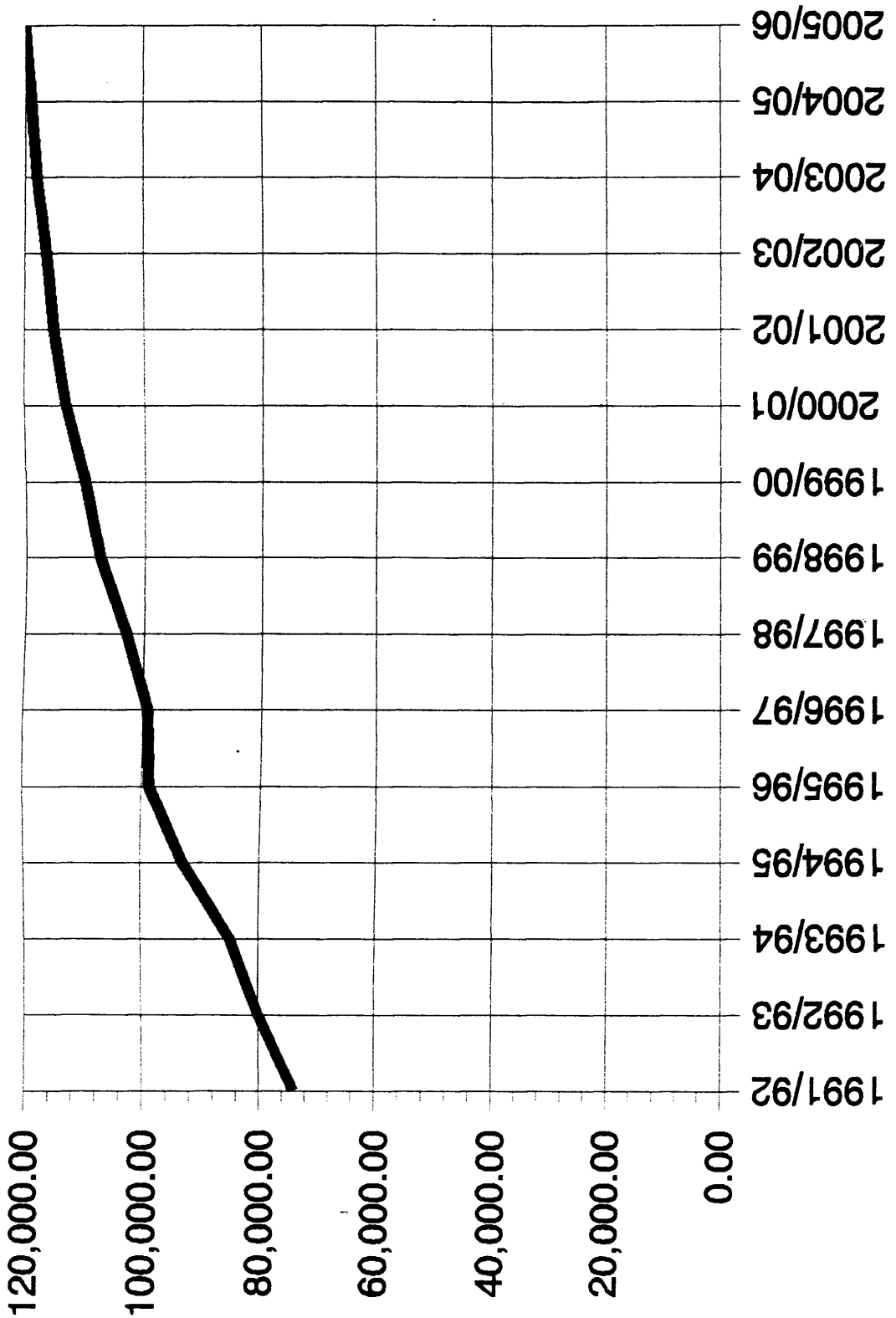
ORIGINS OF GRADUATES IN WATERFORD



ORIGINS OF GRADUATES IN LIMERICK

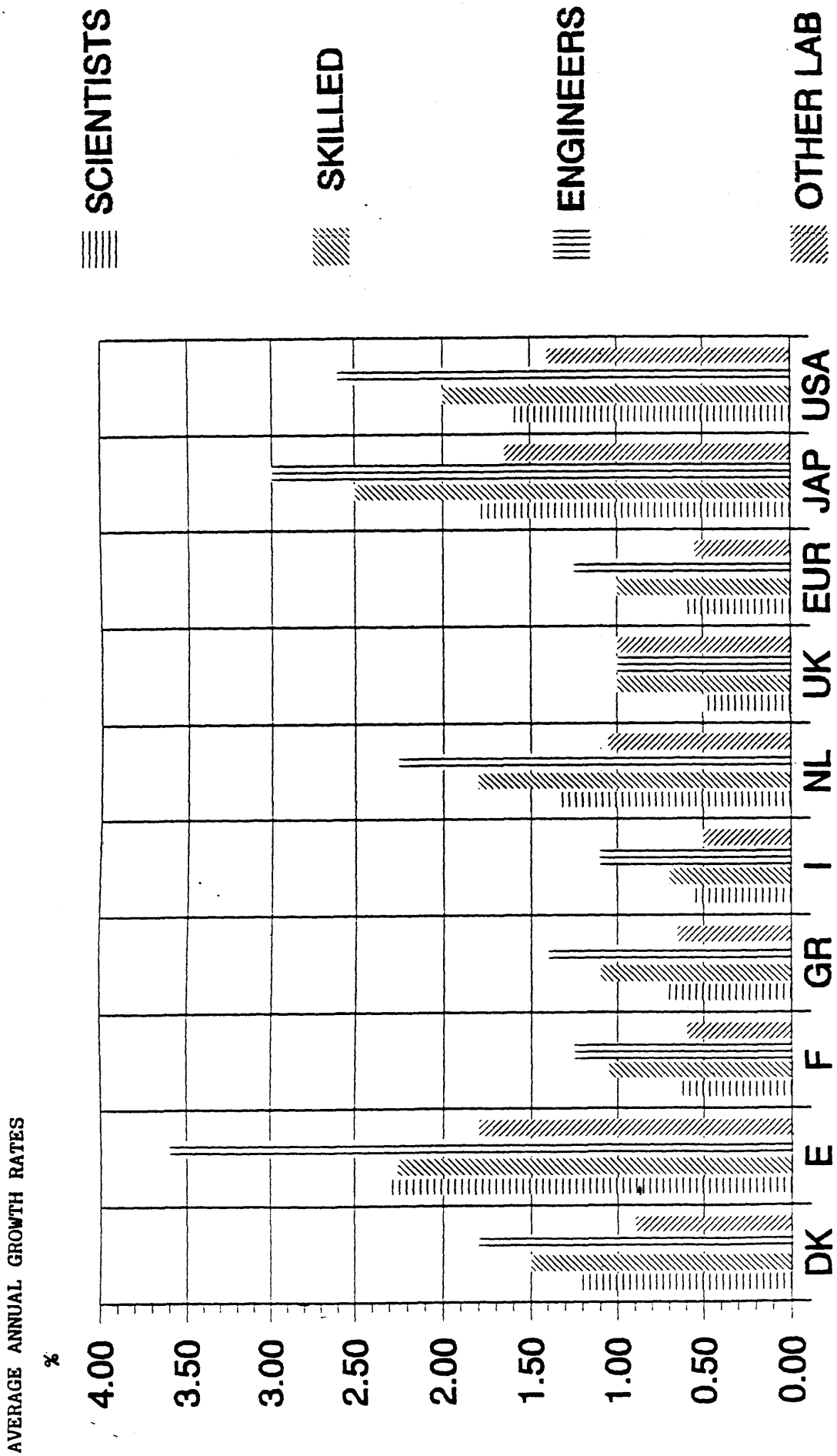
Source: Department of Education

PROJECTED ENROLMENTS FOR THIRD-LEVEL  
EDUCATION 1991 to 2006



# CATEGORIES IN THE 90's

Source: FAS



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