Entrepreneurial intentions amongst students:
Towards a re-focused research agenda

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Abstract

Purpose – The paper addresses the need for a re-focused research agenda in relation to graduate entrepreneurship. An important theme for some years has been the effort to monitor attitudes and intentions of students towards starting-up their own businesses. It is timely, however, to raise some questions about both the impact of this research and likewise the general approach it has taken in understanding the phenomenon of graduate entrepreneurship.

Design/methodology/approach - The paper draws upon a large data set (over 8000 students) from one UK region. Specifically, it presents data from the 2007/2008 Entrepreneurial Intentions (EI) survey within the Yorkshire and Humberside region and reflects back over previous iterations of this research.

Results - The paper identifies three key outcomes. Firstly, it establishes that across all years of the survey, a substantial minority of students consistently hold relatively strong start-up intentions. Secondly, the paper highlights that despite considerable effort to increase the numbers moving to start-up, little impact is discernible. Thirdly, the paper suggests that although the EI survey is useful as a stock taking exercise, it fails to address critical questions around the impact of higher education on entrepreneurship and the transition from entrepreneurial intent to the act of venture creation.

Originality/ value - The paper provides an important positioning perspective on the relationship between higher education and graduate entrepreneurship. While highlighting the importance of the EI research, the paper establishes the need for a re-focused research agenda; one that is conceptually robust and with a focus upon the student journey from higher education to graduate entrepreneur.

Key Words Students/ graduates, Entrepreneurial intentions, Entrepreneurship education, Critical review, United Kingdom

Paper Type Research review

Introduction

Research on entrepreneurial intentions within the context of UK government policy and Higher Education (HE) practice has been ongoing for several years. This research has reflected an important effort to monitor attitudes and intentions of students towards starting-up their own businesses. Such research is now relatively mature and, on the face of it, its contribution to 'benchmarking' has been useful in terms of providing a body of data for use in 'enterprise' policy and practice of both government and HE. It has been viewed as contributing to efforts to harness competitive advantage by enhancing venture creation planning and helping universities to tailor their support services towards student aspirations and needs (e.g., Robertson and Wilkinson, 2005; Robertson and Wilkinson, 2006).

The main aims of this paper are twofold. Firstly, to reflect and 'take stock' of the trends and findings over several years in relation to entrepreneurial intentions research in one region of the UK. This paper focuses in particular on the most recent results (2007/08) of a series of Entrepreneurial Intentions (EI) surveys that began in 2002/03. However, we also reflect back over previous findings of the EI survey. Secondly, and drawing upon this empirical 'stock-take', we undertake a review of the contributions, limitations, and impact of this research to our understanding of the developing enterprise and entrepreneurship landscape in UK higher education.

As such, the paper provides an important positioning perspective on this body of research as we approach the second decade of the twenty-first century. The resulting agenda review is timely as it is important not to lose sight of the bigger picture, of where we are at in terms of our understanding of, for example, HE's impact on graduate entrepreneurship, an area that has seen much effort expended in this regard. Furthermore, it allows us to review the specific theoretical underpinnings of the EI survey, which lie at the heart of many university initiatives to influence the development of graduate entrepreneurs.

The paper unfolds as follows. First, we seek to position the EI survey research within both the literature and policy developments within UK higher education as they relate to issues of enterprise and entrepreneurship. Subsequently, we provide a brief insight into the methodological underpinning of the particular EI survey instrument. The main findings, including some attention to trends, are then outlined before we turn to a critical discussion of the impact and value of this research. The article concludes with an indication of the sort of research agenda that we consider might most appropriately be pursued in the next decade to drive forward knowledge in this field.

Entrepreneurial Intentions and Higher Education

The focus of this section is on entrepreneurial intentions and higher education, but relevant theoretical underpinnings are also noted. In broad terms, entrepreneurial intentions can be defined as a conscious awareness and conviction by an individual that they intend to set up a new business venture and plan to do so in the future (see Bird, 1988; Thompson, 2009). A number of studies have investigated the antecedents of entrepreneurial intentions, with Shapero's Model of the Entrepreneurial Event

(SEE) and Ajzen's Theory of Planned Behaviour (TPB) featuring prominently as frameworks to guide these studies (see Krueger, Reilly and Carsrud, 2000). In many respects, the models are very similar. SEE suggests entrepreneurial intent will depend on the perceived feasibility (personal capability) and perceived desirability (attractiveness) of the prospect of starting a business along with the propensity to act, i.e. the disposition to act upon one's decisions, particularly when faced with an opportunity. TPB focuses on attitudes as the best predictors of intent. The three factors TPB uses to predict entrepreneurial intent are attitude toward the act, social norms and perceived behavioural control. Attitude towards the act can be aligned with perceived desirability, and perceived behavioural control approximates perceived feasibility (Autio, Keeley, Klofsten, Parker and Hay, 2001). The greatest difference in the models therefore revolves around propensity to act and the role of social norms, with the latter referring to perceived social pressure to carry out or not carry out entrepreneurial behaviour (Ajzen, 1991).

Both models have been tested on students' intentions to start a business. Examples of studies that have focused on either of the two models, or both, include Krueger (1993), Krueger and Brazeal (1994) and Autio et al. (2001). Crucially, Krueger et al. (2000) compared both TPB and SEE models in a study, using university business students as the subjects of the research who were facing imminent career decisions. The study generally highlighted the usefulness of both models in understanding entrepreneurial intentions. There was very little to favour either of the models above the other.

Both SEE and TPB have also been helpful in pinpointing triggers and barriers to start-up. Thus, perceived desirability (for example, poor image or lack of personal desire); perceived feasibility (for example, lack of skills, knowledge or self-efficacy); or propensity to act on decisions (for example, a lack of self-belief to follow through and start-up a business) emerge as problems and difficulties in the transition process (see also, for example, Henry, Hill and Leitch, 2003; ISBA Consortium, 2004).

The third and final model to be discussed is that proposed by Luthje and Franke (2003). The model, although displaying similarities to TPB and SEE is worthy of particular note because of its specific focus and relevance to the EI survey. The model proposes that a combination of personality traits has a bearing on attitudes towards entrepreneurship. These attitudes along with perceived contextual factors (barriers and support structures) then influence students' intentions to found their own businesses. Very broadly then the model reflects the widely acknowledged understanding in the careers literature that career development is shaped by personal as well as environmental factors (Savickas, 2002). Whether the individual develops entrepreneurial intentions will depend on his/her personal traits and attitudes as well as the context that will either serve as a catalyst or as a barrier As a basis for the EI survey, itself based on the Government Action Plan, with its emphasis on "building an enterprise culture" and "building the capability for small business growth" (Robertson and Wilkinson, 2006), the Luthje and Franke model provides a broad framework to assess antecedents of entrepreneurial intent.

An important issue to cover in assessing the impact of initiatives that aim to foster entrepreneurial intentions amongst students relates to the assumptions underpinning this provision. The first assumption is that entrepreneurial intentions are learnt. Harris and Gibson (2008), for example, argue that attitudes that underpin entrepreneurial

intentions can be measured and changed, thus allowing for the possibility of attitude change and shaping through exposure to educational programmes in HE. The second assumption is that intentionality translates to entrepreneurial behaviour. The third assumption is that enterprise education and training can make a difference in terms of capability and hence increases the likelihood of business success. Hence the range of initiatives that exist which are designed to equip students and graduates with a range of skills from generating and developing business ideas through to cash flow management and legal issues.

There is some evidence to support the first assumption, i.e. that entrepreneurship education has a positive role to play in student entrepreneurial intentionality (Pittaway and Cope, 2007). The second and third assumptions are yet to receive robust empirical support. Henry et al. (2003), on the basis of a rigorous study tracking the progress, post programme, of 35 aspiring entrepreneurs over a three year period, conclude that such programmes can be effective and yield significant benefits for aspiring entrepreneurs. Such research is the exception rather than the rule however. The impact of university education on entrepreneurship has been questioned, especially with regard to impact on the transition from intentionality to entrepreneurial behaviour or impact on entrepreneurial success (e.g., Galloway and Brown, 2002; Pittaway and Cope, 2007). Hannon, Collins and Smith (2005, p. 12) argue that supply within higher education reveals "confusion about the purposes and impact of entrepreneurship education", whilst the National Council for Graduate Entrepreneurship (NCGE) (ISBA Consortium, 2004) acknowledges that entrepreneurship education and training is characterised by ambiguity and uncertainty about what and how enterprise should be taught. Nonetheless, it is the assumption that HE has a role to play in both nurturing and shaping entrepreneurial intent, and can effectively equip graduates with necessary entrepreneurial skills and capabilities that broadly underpins both the EI survey (see also Methodology section) and other similar initiatives (see, for example, Galloway and Brown, 2002; Luthje and Franke, 2003; Pittaway and Cope, 2007).

Contextual Positioning

Entrepreneurial intentions research such as the EI survey, as pursued within the UK, sits firmly within two sets of government driven developments within higher education. Firstly, a "social enterprise in HE" strand of developments and secondly, developments characterised by a "graduate entrepreneurship" theme. Today's interest in and provision of 'enterprise' within a HE context can be traced back at least to the 1980s. In 1987, the UK government of the day launched an Enterprise in Higher Education initiative. Elton (1991, p. 6) noted "The initiative is not intended to create student entrepreneurs but rather to develop in students and staff the requisite capability and competences to cope with the opportunities and challenges of the 1990s and beyond". The legacy of this initiative has been significant. Enterprise has figured strongly within the Government's ongoing skills and employability agenda, driven by an ever-expanding higher education population both pre- (Brown and Scase, 1994) and post- Dearing (NCIHE, 1997). Put simply this has been concerned to ensure all graduates are equipped with the capabilities demanded by employers as they enter the labour market.

The second set of more recent developments around the promotion of entrepreneurship has focussed specifically on venture creation. This has its roots in 'entrepreneurship' more generally, itself with a long tradition and vast literature (see, for example, Henry et al., 2003 for a useful overview). Initiatives in promoting 'graduate entrepreneurship' began in earnest in early 2000s, with the launching of the National Council for Graduate Entrepreneurship to enhance the number and sustainability of graduate start-ups. Early university business start-up units had a clear brief to assist students start and develop their own business. Increasingly, it has attracted a research literature of its own (see for example, Henry et al., 2003; ISBA Consortium, 2004; Nabi, Holden and Walmsley, 2006). The focus on entrepreneurial intentions is more relevant to the idea of venture creation as a specific act, as opposed to the broad idea of developing enterprising students. However, in practice, the agenda underpinning the EI survey and similar initiatives sits uncomfortably between these sets of developments; part of a programme to convert more university students into entrepreneurs yet relying on a broader 'enterprise culture' rhetoric to mask the exclusivity of such objectives.

To summarise, government policy has increasingly been focussed on the development of enterprising/ entrepreneurial individuals, both in the broad sense as well as in terms of developing in individuals the intent to start-up a business. This focus has been reflected in HE policy where initiatives have aimed at providing graduates with the intent and the capability to start a business. The entrepreneurial intentions literature has provided a useful framework upon which to develop such initiatives, as well as a means to assess their impact. In light of this, we now turn our attention to the EI survey.

The Entrepreneurial Intentions Survey: methodology and methods

This paper is primarily a review/ position paper. Nonetheless, given the importance of the EI survey data as a basis for the development of our position perspective, it is important to note the methodological basis upon which the survey has been conducted. We will have more to say in relation to certain methodological 'concerns' associated with this research in the Discussion part of the paper.

The 2007-08 Entrepreneurial Intentions Survey in the Yorkshire and Humber region of England targeted a representative cross section of the student population (n=8,456) in 10 participating institutions (Ward, Robertson and Holden, 2008). It marked the fifth iteration of the survey; previous surveys having been published in 2002-3 (Robertson, Llewellyn, Collins, and Wilson, 2003), 2003-4 (Robertson, Price and Wilkinson, 2004), 2004-5 (Robertson and Wilkinson, 2005), and 2005-6 (Robertson and Wilkinson, 2006), albeit with smaller numbers of participating institutions. Whilst initially funded through HE development funds (HEFCE, HEIF), more recently it has been funded by Yorkshire Forward (the Regional Development Agency) and Yorkshire Universities.

The rationale underpinning the survey has been twofold. Firstly, to influence university policy and practice in relation to provision and support for aspirant entrepreneurs, and secondly, to assist the formulation of regional economic policy.

Echoing national government rhetoric there has been a strong sense within the Yorkshire and Humber region, at least, that levels of entrepreneurship within a region may well relate to regional levels of competitiveness and economic prosperity.

Regarding the survey itself, the aim (of the 2007-8 survey) was to explore students' attitudes towards setting up their own business and helping universities to tailor their support services towards student needs (Ward et al., 2008). The survey instrument is largely based and adapted from the Luthje and Franke (2003) model. Thus, the measures included entrepreneurial intentions, attitudes towards entrepreneurship, personality e.g., risk-taking propensity, and contextual factors e.g., perceived barriers and support factors. In addition, there are questions on: individual background demographics e.g., gender, ethnicity, degree discipline, year of study; entrepreneurship e.g., awareness of university help on business start-up, family entrepreneurial history; and business plans e.g., immediacy of start-up plans, and regional start-up intentions.

Participating institutions obtained a representative sample of their own student mix and selected/ targeted respondents. Data collection was carried out by each institution following a standard protocol for consistency and then collated and verified for accurate entry. Previous surveys have also featured similar measures as above[1]. Drawing together the most recent (2007/08) findings together with trends over the years the following picture emerges.

Survey Findings

The following section presents some of the key results of the most recent EI survey data and compares these with those of previous years. Five themes are discussed: the extent of start-up intent, comparison of trends by key variables, the impact of university on start-up intent, awareness of start-up support and lastly to what extent intent leads to the actual start-up act. These themes have been selected to identify a number of key findings that have resulted from the EI research.

Extent of Entrepreneurial Intentions

Table 1 presents data on the level of entrepreneurial intentions over five iterations of the EI survey. Whilst latter years suggest a decline in the level of intent to start a business after university, nonetheless a third of students appear as either definitely or likely to take such action. We comment subsequently on what data are available on how this relatively high level of intent translates into actual action.

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[1] Previous iterations of the survey used similar measures as used in this paper, but some slight changes and refinements to the questionnaire format were made over the years. Thus, caution must be used in comparing year on year figures. However, we have included the most comparable available data, but see previous EIS reports for methodological details.

Table 1. Trends in Entrepreneurial Intentions, 2003-2008[2]

Intent	2002/03 (N=2014)	2003/4 (N=4172)	2004/5 (N=7030)	2005/6 (N=7012)	2007/8 (N=8456)
Definitely	NA*	9.8%	10.1%	5.8%	5.7%
Probably	NA*	36.6%	34.5%	28.0%	27.5%
Total	28%	46.4%	44.6%	33.8%	33.2%

* Not available in 2002/2003.

Comparison of Trends by Key Variables

Regarding the attributes of what the research refers to as the 'likelys' (i.e., students indicating a clear intent to start their own business), the data seem to confirm previous surveys. For example, male students are most likely to have a clear entrepreneurial intent (41% vs. 26%), and, on average, have more positive attitudes towards entrepreneurship. Regarding ethnicity (see Figure 1), start-up is more desirable, in general, amongst non-White students. Only a limited number of White students (27%) indicated that they would probably or definitely start their own business compared with the majority of Asians (53%) and Blacks (57%).

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Insert Figure 1 about here

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Regarding subject discipline, Business students are the ones most likely to hold entrepreneurial intentions (Figure 2), perhaps reflecting the concentration of enterprise and entrepreneurship activity within business schools. This is followed by those studying Engineering and Technology. Science and Social Science students are the least likely to harbour entrepreneurial intentions.

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Insert Figure 2 about here

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Change

One of the key questions of interest to policy makers is whether HE has any impact on entrepreneurial intentions. We acknowledge that whilst the aim of the EIS was not to

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[2] N figures, in all Tables and Figures, refer to total number of respondents of the survey, not necessarily the number that answered each question. However, where the latter information is available, it has been provided.

examine the impact of HE on entrepreneurial intent, nor developed to assess the effectiveness of individual pedagogic activities for which there may be some excellent local work, it does allow for analysis of trends in this area.

Findings suggest little difference in level of entrepreneurial intentions by year of study (see Figure 3) which could be cause for concern to those who advocate 'teaching entrepreneurship' within the university curriculum. If the university experience has an impact on start-up intentions one might expect this to be visible in the data, even if the year on year change is incremental. However, this is not the case according to our data. Whilst this is a broad-brush indication in particular because the analysis is not longitudinal (as different groups of students are involved rather than tracking the same ones), and does not focus specifically on entrepreneurship education, it does nevertheless question the link between university attendance and the inculcation of entrepreneurial intentions.

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Insert Figure 3 about here

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Business Start-up Awareness and Support

The intentions models discussed earlier, but particularly the Luthje and Franke (2003) model, focus on start-up triggers and barriers. In this context, it is interesting to assess to what extent awareness of start-up support has changed over the period of the EI surveys. Table 2 indicates the trend in awareness of business start-up help and support (based on EI survey reports, 2002-08). Whilst this indicates an increase in awareness of business start-up support, it still remains low, with only a quarter of respondents indicating awareness of support in 2007/08. This is noteworthy because of the increase and development of business start-up support practices amongst several of the participating institutions.

Table 2. Trends in Awareness of Start-Up Support, 2002-2008*

	2002/03 (N=2014)	2003/4 (N=4172)	2004/5 (N=7030)	2005/6 (N=7012)	2007/8 (N=8456)
Awareness	13.0%	29.0%	14.8%	19.0%	25.0%

*2002/03 and 2003/04 taken from figures reported in the EIS 2003/04 report (and focus on awareness of business start-up at school). All remaining figures reflect awareness at university. 2004/05 and 05/06 figures taken from latter report. 2007/08 figure taken from report of same year.

The Rhetoric – Reality Gap

One of the main concerns about intentions surveys (and models) is that, while intent might be the best predictor of behaviour, it is not of course the behaviour itself. UK data on start-up activity suggest that whilst a sizeable proportion of students have reasonably strong intentions to start-up (e.g., about 33% of 05-06 and 07-08 data), only a fraction actually translate intent into action, at least on graduation (e.g., generally around 4% in the UK according to previous literature, Greene and Saridakis, 2007; Rae and Woodier, 2006).

Similarly, Table 3 suggests little evidence that the time between graduation and start-up may be shortening (judged by intentions). Despite the NCGE aim to shorten time to start-up (ISBA Consortium, 2004) and efforts to enhance the numbers moving to start-up within two years of graduation, the data suggest that, if anything, the trend is becoming less prevalent in recent years. Over the latest 3-year period from 2005/06 to 2007/08, the figures dropped from 35% to 30%. In other words, the expected period between graduation and start-up is generally increasing.

Table 3. Time to start-up for those intending to start-up, 2004-2008*

Timeframe	2004/5 (N=3135)	2005/6 (N=2289)	2007/8 (N=2696)
Within 2 years	31.8%	34.8%	30.0%

* Figures from EIS 2005-06 and 2007-08 reports.

Discussion

Having presented an overview of the EI survey data along themes we considered critical to the graduate entrepreneurship agenda, the discussion focuses on its value and impact within broader considerations of the relationship between HE and enterprise and entrepreneurship. Arguably, within its own terms of reference, the EI survey has strengths and weaknesses. First, we consider the main contributions such research has made, followed by a critical discussion of its limitations.

The Contribution and Legacy of the EI Survey Research

At a time when HE's contribution to economic goals is increasingly questioned and demanded, few would deny it has a legitimate interest in the career orientations and aspirations of its students. The EI survey data provide an important source of information in this regard. The EI surveys add to the body of literature on entrepreneurial intentions, which already has a strong pedigree (see, for example, Ajzen, 1991; Krueger, 1993; Krueger et al., 2000; Shapero, 1982). Specifically applied to young people at the start of their career, there is a legitimacy here which is hard to knock. One of the strengths, perhaps the main strength in fact, of the data emerging from the EI survey initiative is that they now provide more than a snap shot

of entrepreneurial intentions of the student population. Robust data, covering several years, involving a substantial sample of students across one region on one perspective of student career aspirations are available for analysis.

Notwithstanding a decrease in entrepreneurial intent, the data show a consistently substantial proportion of students within HE hold aspirations to start their own businesses. Similarly, the data indicate clear differences amongst the student population; for example along ethnic and subject discipline lines. This provides us with an initial glimpse of a complex relationship in terms of background, individual differences and other factors/ influences upon start-up intent. Rather than a one-size-fits-all approach, these results provide HE policy makers and managers with a more nuanced understanding of how HE might review and assess its graduate entrepreneurship provision, i.e. its start-up business support provision.

The declining number of students displaying entrepreneurial intent offers little encouragement to those advocating start-up as a career post higher education. Of particular concern, given the resources invested into a range of curriculum enhancements and awareness-raising initiatives, is the lack of evidence of an impact of university education on intentions to start-up. As reported, entrepreneurial intent did not increase by year of study as one may expect if HE is having an impact on the desirability of business start-up as a career option.

In sum, the EI survey provides a useful picture of trends in graduate entrepreneurial intentions. However, in terms of shaping the future research agenda, the strengths of this particular research agenda must be weighed in relation to a number of critical questions. These fall into two main categories that we have labelled theoretical/ methodological and political.

Theoretical/ Methodological Issues

We noted earlier the usefulness and indeed pedigree and influence of entrepreneurial intentions research in assisting our understanding of antecedents to entrepreneurship (in terms of venture creation). Two intentions models have been particularly prominent, Ajzen's Theory of Planned Behaviour (TPB) and Shapero's Model of the Entrepreneurial Event (SEE). Interestingly then, the EI survey has been underpinned by the Luthje and Franke (2003) model (LFM), which, while sharing similarities to TPB and SEE does differ in a number of respects.

It has to be acknowledged that the LFM is not an ideal model to determine the impact of HE on student entrepreneurial development, and indeed the EI survey was not set up to do this. Nonetheless, LFM is too restrictive in the coverage of its antecedents on what it terms is the "attitude towards entrepreneurship". It focuses solely on two personality traits (risk taking propensity and internal locus of control) as antecedents to this attitude towards entrepreneurship. Contextual factors (perceived barriers and support) are given a direct link to entrepreneurial intent rather than being channelled through this broad notion of 'attitude towards entrepreneurship'. As such, LFM is less of an attitude-based model than other models (e.g., TPB and SEE).

The emphasis on personality traits can be considered a weakness in LFM as personality has very weak predictive capacity in explaining entrepreneurial intentions. The notion that entrepreneurs are born and not made has long been questioned and found to be wanting. While it may seem appealing to cling to notions of the stereotypical entrepreneur, in reality a wide range of people create and run their own businesses and the pathways to venture creation are complex (Nabi, Holden and Walmsley, 2009). From a HE perspective, the overemphasis on personality traits is potentially problematic. Personality traits are considered relatively stable and enduring as opposed to beliefs and attitudes and as such are less amenable to change. Thus, if the agenda of HE is to enhance entrepreneurial intentionality and this is dependent on personality traits the task is truly daunting. Both TPB and SEE seem to offer a more optimistic view of the potential for individual change given the focus on attitudes and capacity-building.

Furthermore, while the LFM was influential in terms of the design of the EI survey questionnaire, there are issues related to the psychometric properties of both the EI survey and the LFM. Regarding the former, no published evidence is given (as far as the authors are aware) as to whether items for EI survey have demonstrated validity and reliability using normal rigorous procedures for questionnaire validation and construction (see, for example, Thompson, 2009). Furthermore, in terms of the latter, Luthje and Franke's (2003) measures did not demonstrate high reliability (for example, the constructs varied in alpha reliability between 0.47 to 0.69). Thus, the theoretical and measurement model underpinning the EI survey has a range of limitations.

The final critique of the EI survey encompasses a generic problem with entrepreneurial intentions models that we term here the 'intention-action dilemma'. According to the EI data, over one-third of students indicate an intention to start-up. Yet, only a small minority of these translate this intent into action judged by the relatively small number of graduate start-ups. The EI survey instrument, in any of its five iterations, has not sought to track students, neither within their time in higher education nor in terms of their employment choices post-degree. There is a wider recognition of this problem. Galloway and Brown (2002), for example, in the context of similar entrepreneurial intentions research work in Scottish universities acknowledge that the results of their intent study are limited, precisely because of their reliance on what students said they were likely to do in the future. They point to the importance of seeking to evaluate the impact of enterprise/ entrepreneurship education and training on the *quality* of subsequent start-up; a potentially valuable field of enquiry. Similarly, other research (e.g., ISBA Consortium, 2004; Pittaway and Cope, 2007) notes the pressing need for longitudinal research work to address this very issue.

Political Issues

The issue here is the positioning of the entrepreneurial intentions research within broader considerations of student/ graduate enterprise and entrepreneurship. We noted earlier the two developments of social enterprise in HE and graduate entrepreneurship. The problem is the evident conceptual ambiguity that characterises the terms entrepreneurship and enterprise (see also, for example, Nabi and Holden, 2008; Sewell and Dacre Pool, 2010). On the one hand, graduate entrepreneurship (and

entrepreneurship education) can be used in a narrow sense for particular students/ graduates who are involved in entrepreneurial behaviour (e.g., trying to start-up a business and learning related skills like developing a business plan). On the other hand, graduate enterprise (and enterprise education) can be used in a broad sense to refer to a set of life skills for students (e.g., coping with stress) reflecting a university-wide 'enterprise for life' approach that all students should possess, regardless of discipline (Nabi and Holden, 2008). In practice, the terms are often used interchangeably and the resultant conceptual ambiguity causes tension in what is or should be the main agenda in an entrepreneurial university.

Kirby (2004), for example, poses the question: Are HE business schools trying to develop 'entrepreneurial' or 'enterprising' graduates? And the answer has consequences for HE-initiated programmes in terms of which attitudes they wish to nurture and shape and/or the tools and capabilities they aim to develop (Nabi and Holden, 2008). Indeed, it is within the world of HE teaching that the ambiguity is most evident; in terms of inputs and outputs (Pittaway and Cope, 2007). The result is highly problematic for any genuine attempt at evaluation of impact. At worst we end up using stated 'intention to start-up' or the number of actual graduate start-ups as some sort of proxy measure for the impact and penetration of the much broader enterprise agenda. In sum, our point is this: The EI survey research is positioned uncomfortably within a somewhat murky enterprise-entrepreneurship landscape. As a result, the objectives of the research and ultimately its impact and value are undermined because of this lack of clarity.

Ultimately, the above points of concern raise a question mark over the future legitimacy of research in its current form. The EI research tells us very little about the process of personal change in relation to attitudes towards entrepreneurship brought about by HE. It tells us very little about the transition from student to entrepreneur. It fails to explain the low follow-up on entrepreneurial intent. Whilst its survey-based nature provides large-scale information, what is needed is a way of conceptually framing the impact of HE on attitude formation and the interactional process by which a student firstly moves through higher education towards employment of some sort, and secondly engages in employment post degree, whether this be through a start-up business or - for the overwhelming majority of graduates - with an employer.

Conclusions: Towards a Re-Focused Research Agenda

It would be disingenuous to conclude that the EI research, conducted over 6 years, does not constitute a valuable body of data with some implications for policy and practice in HE (e.g., Ward et al., 2008). Data from the EI survey indicate that approximately one third of Yorkshire and Humber students intend to start their own businesses. However, the proportion of graduates holding entrepreneurial intentions has been declining. The extent of entrepreneurial intentions appears to be related to ethnicity and subject studied although further research is required here to say with any certainty that this is the case. No difference in levels of entrepreneurial intentions was discernible across year of study at university, which points to a lack of impact of HE. There is some limited evidence of a heightening of awareness in relation to the increased levels of start-up support both within and external to the university. It remains the case, however, that the vast majority of students appear to remain ignorant of its existence. These results are interesting and are not without value to a

range of stakeholders working within the fields of student and graduate entrepreneurship. Nonetheless, we believe there is a compelling case for further research in three largely neglected areas.

First, continuation of the research as reflected in the EI survey addressed here risks perpetuating both its theoretical and methodological limitations, and the ambiguity within the worlds of HE enterprise and entrepreneurship that we have discussed earlier. A more appropriate theoretical framework for measuring the impact of HE on entrepreneurial attitudes and motivation is that suggested by Fayolle, Gailly and Lassas-Clerc (2006). This framework is grounded in the well-established Theory of Planned Behaviour, and importantly provides a common framework to evaluate (and develop) the impact of entrepreneurship education programmes (EEPs) on antecedents of entrepreneurial behaviour (e.g., attitudes about entrepreneurship, perceived self-efficacy, entrepreneurial intention). The framework provides indicators or characteristics of the EEP such as: type of EEP (e.g., awareness raising, education for start-up); contents of the EEP (e.g., know-what, know-why, know-how, know-who); and teaching approaches (e.g., real-life immersion, case studies, role-model talks, lectures). This could be cumulative and valuable nationally. Although ambitious, it should allow for a more appropriate, structured and comparative framework as to what works, pedagogically, to enhance entrepreneurial potential. Built on a robust theory-driven approach and based on validated measures, such a quantitative approach could allow for an empirical and longitudinal analysis.

A complementary approach lies in a perspective based on higher education as a key stage of transition and graduate progression more generally: student to graduate; graduate to employee; graduate to entrepreneur. Within such a framework, attitude formation and development might be the focus. Following on from this genre (e.g., HECSU, 2005/06; Holmes, 2001), for example, we would argue that it is not helpful to see their journey through higher education as simply filling their 'toolbag of skills' for subsequent employment whatever and wherever that may be. It is surely more valuable to see it as a process of transition in terms of identity formation which is an evolutionary process and one that goes beyond the assumption of a smooth education to employment progression in which successful students can 'hit the ground running' (HECSU, 2005/06). Within this, quite legitimately and potentially very valuably, a focus on student progression (from HE to graduate entrepreneur) could be appropriately positioned. How best to encourage 'entrepreneurial identity' - what Gibb (2005, p. 3) calls feeling "what it is like to be entrepreneurial"- holds the key to the creation of entrepreneurial values. The research imperative is to understand this process, to understand this journey and to identify and assess the complexity of factors that influence this journey. This should also help to ensure students develop a more 'informed' entrepreneurial intent.

Finally, we believe, there should be particular research focus upon those who express intent (i.e., a commitment to pursue the entrepreneurship career path), but who do not fulfil this intent, or at least not in the first 3 or 4 years post degree. Such a focus would also enable the much needed data on how many students who tell us they are inclined towards 'start-up' actually do start-up; in other words, longitudinal research on the journey from student into employment but with an 'entrepreneurship' focus. Why do some people change their minds and not start-up their own businesses despite high intentions at university? Importantly, insight here would help us better

understand the barriers, and perhaps, the strategies to overcome, the lack of or delay in transition from intention to action. In turn, this should help to address a key goal of the NCGE, that is, to shorten the journey from student to start-up.

These three streams are not mutually exclusive, but in our view would significantly help to position and sharpen the focus of future research. They would add substantial value to our understanding of entrepreneurial intentions, and importantly, the transition from intentions to action.
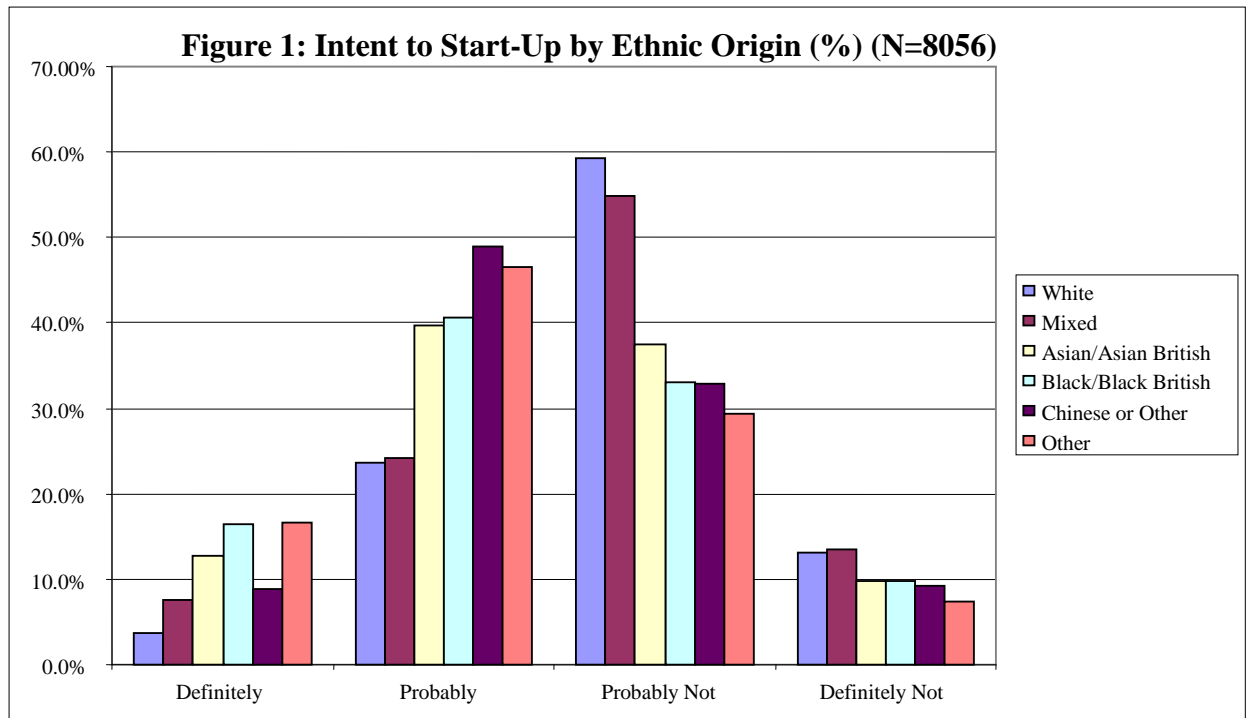
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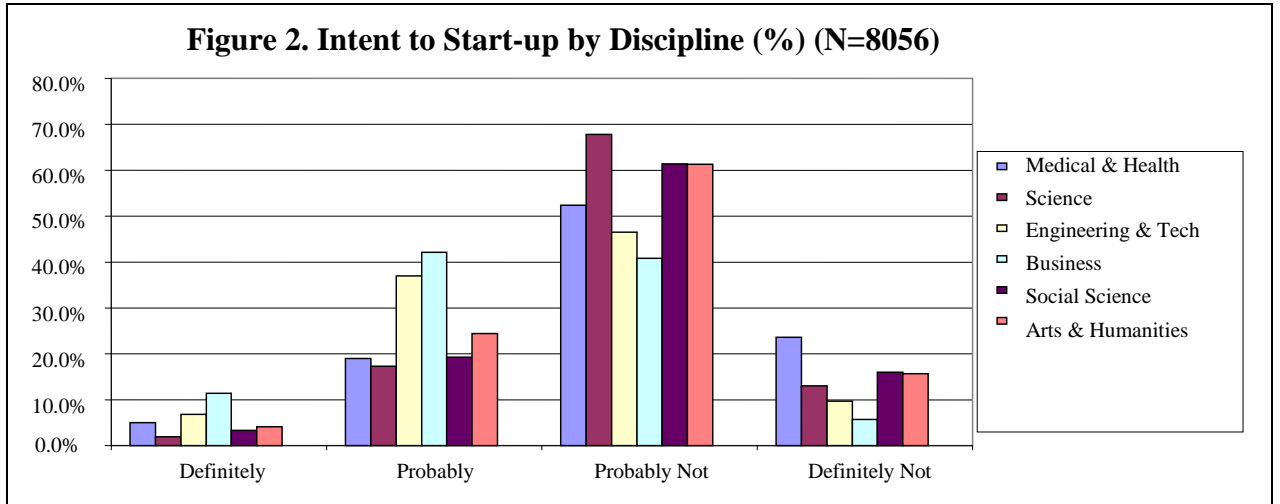
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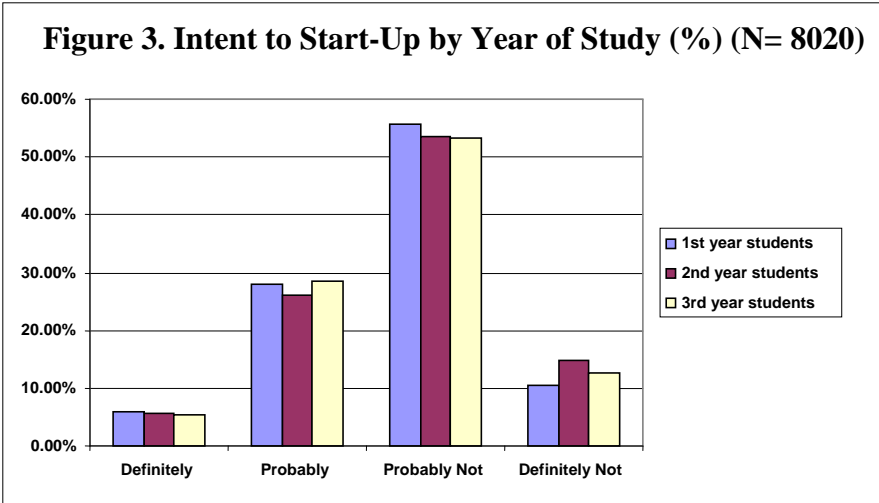
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Figure 1: Intent to Start-Up by Ethnic Origin (%) (N=8056)

Source: Entrepreneurial Intentions Survey 2007/08; Yorkshire Forward/Yorkshire Universities

Figure 2. Intent to Start-up by Discipline (%) (N=8056)

Source: Entrepreneurial Intentions Survey 2007/08; Yorkshire Forward/Yorkshire Universities

Figure 3. Intent to Start-Up by Year of Study (%) (N= 8020)

Source: Entrepreneurial Intentions Survey 2007/08; Yorkshire Forward/Yorkshire Universities