ENTREPRENEURIAL RESEARCH TO RESEARCH ENTREPRENEURSHIP: A CASE STUDY IN COLLABORATIVE RESEARCH DESIGN

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ABSTRACT

Entrepreneurship remains relatively immature compared with other business, economic and social research disciplines. It lacks large scale, longitudinal studies with rigorous research methods and complex models that provide a foundational, empirical base, partly due to the resource-intensive nature of such studies. Since entrepreneurship has been defined as “the pursuit of opportunity without regard to the resources controlled”, applying entrepreneurial methods to entrepreneurship research provides a potential solution. A new entrepreneurship research project is presented as a case study using this approach. Significant benefits in terms of scale and research design quality of the resulting project are identified.

INTRODUCTION

Entrepreneurship continues to grow in popularity, both as an educational and research discipline. But despite several decades of recognition as a distinct discipline by the Academy of Management, from a research perspective, entrepreneurship is considered immature and the rigour of entrepreneurship research remains under scrutiny.

Almost ten years ago, Chandler and Lyon (2001) reviewed the previous decade of published entrepreneurship research in the top entrepreneurship journals with a critical evaluation of the methodologies employed. They noted some progress, but concluded that further improvement was needed in a number of areas, including:

- multiple source datasets;
- reliability and validity, which was found to be relatively unsophisticated compared with other disciplines;
- more sophisticated theoretical models and analysis; and
- longitudinal research.

Almost a decade later, Crook et al. (2010) reviewed articles from the same journals, and surveyed experienced researchers with editorial board responsibilities, to examine whether the progress called for by Chandler and Lyon had been achieved. They concluded that, despite improvements in some areas, there was still a long way to go. Issues identified as ongoing areas for improvement included:

- multiple data sets across multiple countries;
- models examining mediation and moderation effects; and
- rigour in research design and construct measurement.

More sophisticated analysis techniques were held by Crook et al. (2010) to be desirable and found to be increasing (Dean et al., 2007; Crook et al., 2010), but few researchers were found to be confident in using more than a basic set of analytic techniques (Dean et al., 2007).
The cumulative message is that to advance the credibility of entrepreneurship as a research domain, we need more research involving large multiple source datasets across multiple countries, and more sophisticated models, while retaining validity and reliability of constructs. Such projects demand a wide range of skills and an investment of time and, correspondingly, money. The breadth of necessary resources – theoretical knowledge, research design, complex statistical expertise, and networks spanning borders - are beyond the capabilities and resources of most research teams. Furthermore, the institutional context, placing as it does great emphasis on frequent, high-quality publications, presents a barrier to the type of longitudinal, cross-cultural research projects that are necessary.

There is, therefore, a resources gap.

Entrepreneurship has been defined as “the pursuit of opportunity without regard to the resources currently controlled” (Stevenson, Roberts & Grousbeck, 1994: 6). Thus, when pursuit of research opportunities is limited by resources controlled, an entrepreneurial approach is indicated.

This paper examines a specific research project as an entrepreneurial venture in its own right. It uses Shane and Venkataraman’s (2000) framework of entrepreneurship as disciplined management of opportunity, supplemented by frameworks of resource acquisition (Stevenson, Roberts & Grousbeck, 2000; Timmons and Spinelli, 2007) and entrepreneurial orientation (Lumpkin & Dess, 1996). It also draws comparison with another major, ongoing entrepreneurship research initiative, the Global Entrepreneurship Monitor.

The authors do not assert that either of these projects was designed with entrepreneurship principles consciously in mind, but that the methods by which the projects were designed and are being implemented are consistent with entrepreneurial behaviour. The authors further assert that this entrepreneurial approach has benefited both research projects, principally in terms of scope, scale and quality of research design.

ANALYTICAL FRAMEWORK

The parallels between entrepreneurship research and entrepreneurial ventures occurred to the first author when participating in the Global Entrepreneurship Monitor Project in the early 2000s. Parallels with a franchise operation (complete with a degree of tension between franchisor and franchisees!) were apparent. More recently, an academic colleague commented in a meeting with entrepreneurship program students and alumni that “research is entrepreneurial” – a remark which bewildered the entrepreneurship practitioners present, but piqued the interest of this author. Participation in the Entrepreneurship Education Project, which launched in 2010, reinforced the parallels and provided the trigger for a more rigorous examination of the entrepreneurship research project as an entrepreneurial venture.

Is research inherently entrepreneurial as the academic colleague suggested? This question is best answered by reference to established models of entrepreneurship. Shane and Venkataraman’s (2000) seminal publication defined the field of entrepreneurship as “the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.” (p218). This paper uses the discovery, evaluation and exploitation stages of entrepreneurship as a framework for examining the extent to which two specific entrepreneurship research projects can be regarded as entrepreneurial activity. Shane and Venkataraman’s framework is chosen because it includes entrepreneurial behaviour as a transitory, as well as habitual, characteristic; takes into account context; and does not necessarily involve the creation of a new organization, thus constituting a framework that can be applied to a wide range of activities in a wide range of contexts.

In a sense, every academic research project begins with discovery of a gap in existing knowledge that justifies additional empirical or conceptual study to fill or close that gap. These projects begin by defining the gap and how the researchers propose to address it. Researchers evaluate research opportunities based on fit to their academic discipline and knowledge base, and with respect to the value the research will create for them, which depends on what value they personally seek. Finally, the decision to exploit a research opportunity depends on the resources available to them personally and through their networks, from their institution, or from other bodies such as governments and industry (or a combination of these). Table 1 illustrates the analogy with entrepreneurial business opportunities.
Of course, not all research projects are entrepreneurial any more than all new businesses are. What distinguishes an entrepreneurial venture is the degree to which it creates new value, the degree to which it is growth-oriented, and the processes by which it is launched and developed. For example, there is nothing especially entrepreneurial about a tradesman setting up his own business and advertising for work. But if that tradesman proactively seeks out opportunities for independent work, talks his (her?) way into a large contract and then goes about securing the workers to deliver it, they are acting entrepreneurially by pursuing an opportunity without regard to resources controlled (Stevenson, Roberts & Grousbeck, 1994).

In the same way, most research projects can be regarded as (without any negative connotations) “business as usual”. They may involve no resources beyond access to literature, the individual researcher’s cognitive skills, and contacts that provide access to a limited sample of potential respondents. They may involve collaboration with colleagues – within their faculties and institutions, or outside. They may even involve external funding through government grants and industry partners, but while they go through established channels, there is nothing particularly entrepreneurial about this.

### Table 1: Entrepreneurial ventures and Entrepreneurship Research compared

<table>
<thead>
<tr>
<th>Stage</th>
<th>Factor</th>
<th>Entrepreneurial venture</th>
<th>Entrepreneurship research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence</td>
<td>Sub-optimal situation</td>
<td>Gap in market</td>
<td>Gap in knowledge</td>
</tr>
<tr>
<td>Discovery</td>
<td>Information asymmetries</td>
<td>Prior industry knowledge, networks, contacts, access to information sources.</td>
<td>Body of academic knowledge, academic and practitioner networks and contacts, personal research data.</td>
</tr>
<tr>
<td></td>
<td>Cognitive properties</td>
<td>Ability to conceive new means-end relationship; seeing opportunity rather than risk.</td>
<td>Philosophical stance, intellectual confidence, passion for field, openness to collaboration.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Nature of opportunity</td>
<td>Value created compared with effort involved (relative to other potential opportunities)</td>
<td>Value created compared with effort involved (relative to other potential opportunities)</td>
</tr>
<tr>
<td></td>
<td>Individual differences</td>
<td>Individual perception of value: wealth; impact; power; prestige; mission.</td>
<td>Individual perception of value: career advancement; advancing knowledge; problem-solving; prestige</td>
</tr>
<tr>
<td>Exploitation</td>
<td>Within existing organisation</td>
<td>Corporate venture; spin-off venture; joint venture; alliance etc.</td>
<td>Institutional resources or internal unit to attract external resources. Alliance with other universities, industries or government bodies.</td>
</tr>
<tr>
<td></td>
<td>Create new organisation</td>
<td>New independent venture, alone or with other individuals</td>
<td>Individual resources or alliance with other individuals.</td>
</tr>
<tr>
<td></td>
<td>Sell to existing organisation</td>
<td>Sell IP; develop under corporate sponsorship.</td>
<td>Industry-sponsored research (not necessarily academically recognised)</td>
</tr>
</tbody>
</table>

Research may often be opportunistic, responding to sources of funding such as grants or industry sponsorship, to happenstance access to a particular sample of individuals, to transitory access of an eminent scholar, even to a casual conversation at a conference. There are aspects of entrepreneurial behaviour involved, but the outcomes of such opportunistic research activities are usually transitory, making individual (though potentially valuable) contributions to the field of knowledge and advancing the career and reputation of the individuals involved. Such activities are analogous to the development of professional practice, such as medical or legal specialists, which does not fall under most definitions of entrepreneurship.
The authors are interested in research activities that go beyond the ‘business as usual’ or opportunistic research to create a lasting organisation or, at least, a much larger project than the individuals who began it could achieve alone. Two cases are examined and implications drawn.

Selected models of entrepreneurial behaviour

Our selected definition of entrepreneurship research refers to “how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.” (Shane & Venkataraman, 2000: 218, emphasis added). This paper focuses mainly on the ‘how’, together with some examination of the ‘by whom’. Emphasis was given to models that identify specific activities and behaviours, specifically Stevenson, Roberts and Grousbeck’s (1994) framework for the start-up process, supplemented by Timmons and Spinelli’s (2007) new venture screen, for its more detailed focus on identifying and understanding the ‘market’.

Stevenson, Roberts & Grousbeck (1994) identifies three main goals of pre-startup analysis (p17):

1. Understand the dimension of the opportunity and evaluate its attractiveness
2. Determine the resources needed and effort involved to exploit the opportunity
3. Identify a strategy for exploitation

Timmons and Spinelli’s (2007) new venture opportunity screen provides an overview of the entrepreneurship process roughly grouped into the categories below:

- Market: Assess the market receptiveness and size
- Numbers: Assess the potential reward and timeframe to achieve benefits
- Resources: Assess resources are needed and whether they can be obtained
- Competition: Assess probability of competitor threat or imitation

A major component of the strategy for exploitation is managing stakeholders, which involves attracting stakeholders, minimising their exposure, selecting appropriate stakeholders who can add value to the project, and finally convincing them to participate. In an entrepreneurship research venture, there is an overlap between these stakeholders and the eventual customers. The researchers interested in assisting with the project’s implementation are also interested in ‘consuming’ the data generated, and the research papers published by fellow participants. The Timmons and Spinelli (2007) framework for assessing market potential adds value as an extension of Stevenson, Roberts and Grousbeck’s stakeholder framework.

Adding the ‘by whom’ perspective to the examination of entrepreneurship in research, we referred to Lumpkin and Dess’s (1996) definition of entrepreneurial orientation as:

"a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities” (p137)

This aspect of entrepreneurial behaviour is examined only in the second case, courtesy of the personal input of the project founders.

CASE STUDIES

Case 1: The Global Entrepreneurship Monitor Project

The Global Entrepreneurship Monitor (GEM) project, launched in 1999 from a collaboration between Babson College in the USA and London Business School in the UK, with the sponsorship support of the Ewing Marion Kauffman Foundation. Researchers representing 10 countries, recruited through personal networks participated in the 1999 pilot of the project, the success of which led to a rapid expansion to include additional countries.

Many attendees of this conference will be familiar with the GEM project, and details of its structure can be found on the project’s web site (www.gemconsortium.org). In essence, it was structured similarly to a franchise organisation, with the two founding partner institutions acting as franchisors and participating countries as franchisees.
The ‘franchisors’ controlled the GEM brand, the research design, the data collection from population surveys, release of data sets and a standardised analysis methodology. The ‘franchisee’ national teams contributed an annual fee, which covered their local population survey and contributed to managing the GEM consortium. In return, as well as local data, they obtained use of the GEM brand and privileged access to GEM data.

Table 2 summarises the GEM project’s characteristics as an entrepreneurial venture. The authors assert that the GEM project has more characteristics of a corporate venture or alliance than of a new independent venture, given that it relied on the reputation and resources of the founding institutions. Furthermore, the ‘franchisees’ are not independent ventures, but represent their host institutions and rely on the resources and accreditation that those institutions provide.

Table 2: The GEM Project as an entrepreneurial venture

<table>
<thead>
<tr>
<th>Stage</th>
<th>Factor</th>
<th>Entrepreneurial venture</th>
<th>GEM Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence</td>
<td>Sub-optimal situation</td>
<td>Gap in market</td>
<td>Gap in knowledge about economic contribution of emerging ventures.</td>
</tr>
<tr>
<td>Discovery</td>
<td>Information asymmetries</td>
<td>Prior industry knowledge, networks, contacts, access to information sources.</td>
<td>Founder of Panel Study of Entrepreneurial Dynamics (PSED) – provided proven research methodology. Connections of founders (Kauffman foundation, key scholars)</td>
</tr>
<tr>
<td></td>
<td>Cognitive properties</td>
<td>Ability to conceive new means-end relationship; seeing opportunity rather than risk.</td>
<td>Intellectual confidence from PSED and other projects, passion to demonstrate economic contribution of entrepreneurship field.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Nature of opportunity</td>
<td>Value created compared with effort involved (relative to other potential opportunities)</td>
<td>Opportunity to create a globally recognised organisation. Need to achieve critical mass.</td>
</tr>
<tr>
<td></td>
<td>Individual differences</td>
<td>Individual perception of value: wealth; impact; power; prestige; mission.</td>
<td>??? (known only to founders!)</td>
</tr>
<tr>
<td>Exploitation</td>
<td>Within existing organisations</td>
<td>Corporate venture; spin-off venture, joint venture, alliance etc.</td>
<td>Commenced as a joint venture between two institutions, extended by alliance with partner institutions in participating countries. Analogous to a franchise model.</td>
</tr>
<tr>
<td></td>
<td>Create new organisation</td>
<td>New independent venture, alone or with other individuals</td>
<td>The GEM consortium is a new organisation, but the members are dependent on their host institutions.</td>
</tr>
<tr>
<td></td>
<td>Sell to existing organisation</td>
<td>Sell IP; develop under corporate sponsorship.</td>
<td>Although sponsors are involved globally and locally, the IP remains with the consortium</td>
</tr>
</tbody>
</table>

While the GEM project has many characteristics of a corporate entrepreneurial venture, are there examples of entrepreneurship research projects that are analogous to independent new ventures? Our second case presents such an example.

Case 2: The Entrepreneurship Education Project

The Entrepreneurship Education Project (EEP) originated with one researcher’s question, which was (roughly):
“Does what we do in the classroom (entrepreneurship undergraduate courses) make any difference in terms of students actually starting their own business?”

This was not the first time this question had been asked, but a review of the published studies revealed few results that were able to address this particular research question. There are a plethora of studies investigating an individual’s intention to start their own business (i.e., Audet, 2004; Krueger, Reilly, & Carsrud, 2000; Wilson, Kickul, & Marlino, 2007; Zhao, Seibert, & Hills, 2005). Most of this body of literature, however, focuses on the factors that influence the formation of entrepreneurial intentions, specifically limited to individual factors such as various personality characteristics and attitudes. A separate body of literature has focused on the linkages between entrepreneurship education programs and students’ entrepreneurial intentions (i.e., Kolvereid & Moen, 1997; Fayolle, Gailly, & Lassas-Clerc, 2006; Noel, 2001; Segal, Borgia, & Schoenfeld, 2005). However, these studies have been cross-sectional in nature, therefore not providing firm evidence of whether and how these education programs influence students’ career outcomes. One longitudinal study (Souitaris, Zerbinati, & Al-Laham, 2007) did show that an entrepreneurship program increased science and engineering students’ entrepreneurial intentions over time, mostly as a result of providing inspiration. The next logical question, then, which the EEP project seeks to address, is how this sort of effect carries through to students’ eventual career choices and success in terms of forming a new venture and successfully growing that venture.

After exploring the question with colleagues, a draft research framework was developed. It was based on existing theory of entrepreneurial motivation and intentions, but also drew on Social Cognitive Career Theory (SCCT) as a means to investigate the linkages between educational experiences and career choices and success using a well-established theoretical foundation focused on an individual’s motivational processes (Lent, Brown, & Hackett, 1994, 2000). In particular, this theoretical framework builds upon the growing body of literature that highlights the importance of self-efficacy to the formation of intentions (i.e., Kickul et al., 2008; Kilenthong, Hills, & Monllor, 2008; Kolvereid & Isaksen, 2006; Sequeira, Mueller & McGee, 2007; Wilson et al., 2007; Zhao et al., 2005).

The first step in this project was to develop a conceptual model based on SCCT. The resulting model, which included the core components of SCCT - namely self-efficacy, outcome expectations, intentions, contextual influences and individual factors - was necessarily complex. This indicated the need for a very large number of responses in order to validate relationships between constructs with any degree of rigour. Extending the project beyond the researchers’ own institutions was desirable to achieve this critical mass of responses. The project founders also realized an added opportunity and subsequent benefit to involving students from many institutions in many countries. This sort of collaborative framework would allow for additional perspectives to refine the research design and also for a much broader applicability of the practical implications of the research project. This sort of large-scale, collaborative research project had the potential to create just the sort of foundational entrepreneurship research scholars have been calling for (Chandler & Lyon, 2001; Crook et al., 2010).

The EEP project did face certain limitations in its infancy that other projects such as GEM did not. For instance, whereas the GEM project could leverage the knowledge, reputation and prestige of leading scholars at leading institutions, the EEP founders, as with nascent entrepreneurs, were in the infancy of their career development and thus had not yet established a reputation or network that allowed for the corporate venturing approach. The EEP project, however, did require relatively low resources in that the founders sought scholars interested in participating from universities around the world and not much beyond that. The founders therefore realized that a new research venture was highly feasible by using bootstrapping and grassroots techniques to solicit project participation from scholars at different universities.

Table 3 illustrates the fit of the EEP project to the Shane and Venkataraman (2000) framework. A summary timeline of the project is also included as Appendix A.

The principal resources required to make the project feasible were other researchers (stakeholders). The main priority therefore was to identify such researchers and convincing them to participate. Guerilla marketing techniques (Levinson, 1984) were used to locate, attract and select participants. Use of general Internet searches, publication searches for scholars publishing in this area, multiple list servers and direct contacts increased both range of awareness and probability of receptive individuals hearing about it from more than one source, thus creating “buzz”.
The effort involved in this stage should not be underestimated. The search for potential participants was exhaustive, targeting all possible sources of such information including:

- College guides showing institutions that offered entrepreneurship programs;
- Editorial review boards of entrepreneurship journals
- Entrepreneurship journals and networks publishing research on entrepreneurship education
- Entrepreneurship networks such as Global Entrepreneurship Week
- Listservs, organizations, and various groups/clubs focused on topics related to entrepreneurship and entrepreneurship education

The project founder (lead entrepreneur) spent many, many hours over a period of months on this research and estimates that he identified and directly emailed more than 1,500 individuals representing nearly 1,200 different institutions. Through this approach, and due to the overwhelmingly positive response the founder received from these individuals, it was established that a sizable and receptive ‘market’ in the form of interested academics existed (Timmons & Spinelli, 2007: ch. 5).

Table 3: The EEP as an entrepreneurial venture

<table>
<thead>
<tr>
<th>Stage</th>
<th>Factor</th>
<th>Entrepreneurial venture</th>
<th>EEP Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence</td>
<td>Sub-optimal situation</td>
<td>Gap in market</td>
<td>Gap in knowledge about the impact of UG entrepreneurship programs.</td>
</tr>
<tr>
<td>Discovery</td>
<td>Information asymmetries</td>
<td>Prior industry knowledge, networks, contacts, access to information sources.</td>
<td>Prior entrepreneurial experience: Networks primarily through AOM and USASBE</td>
</tr>
<tr>
<td></td>
<td>Cognitive properties</td>
<td>Ability to conceive new means-end relationship; seeing opportunity rather than risk.</td>
<td>Willingness to question assumptions re the value of entrepreneurship education</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intellectual curiosity to learn what others are doing in the entrepreneurship classroom, what’s working, what’s not</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Desire to link pedagogy to real-world outcomes</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Nature of opportunity</td>
<td>Value created compared with effort involved (relative to other potential opportunities)</td>
<td>No other research project with comparable complexity of framework and range of participants. Opportunity to create a foundational study.</td>
</tr>
<tr>
<td></td>
<td>Individual differences</td>
<td>Individual perception of value: wealth; impact; power; prestige; mission.</td>
<td>Different perspectives of founders: one OB, one Strategy; one conceptually-oriented, one methodologically-oriented; one takes institutional perspective (value to participating institutions), one student-focused (value to the students)</td>
</tr>
<tr>
<td>Exploitation</td>
<td>Within existing organisations</td>
<td>Corporate venture; spin-off venture; joint venture; alliance etc.</td>
<td>Not possible.</td>
</tr>
<tr>
<td></td>
<td>Create new organisation</td>
<td>New independent venture, alone or with other individuals</td>
<td>Implemented as a new venture with the initial researcher as founder and collaboration and participation of other scholars (key stakeholders).</td>
</tr>
</tbody>
</table>

The next task was to convert expressions of interest into committed participants. Because the project founders (entrepreneurs) and the research partners (stakeholders) came from the same profession, potential stakeholder concerns were readily identifiable and could be proactively managed.
Stakeholder risks identified included:

- Research quality (methodology, research design, ethics, etc)
- Opportunity cost compared with other potential research projects
  - Fit with prior / planned research in this field
  - Assured opportunities for publications
  - Assurance that commitment to the project is real and ongoing

Table 4 summarises the stakeholder management process alignment with the selected frameworks.

**Table 4: EEP Stakeholder Management - Alignment with start-up models**

<table>
<thead>
<tr>
<th>Activities (Stevenson)</th>
<th>EEP activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attracting stakeholders</strong></td>
<td>Guerilla marketing:</td>
</tr>
<tr>
<td>Testing market size and receptiveness (Timmons &amp; Spinelli)</td>
<td>• Messages to listservs, websites, organizations (ENTREP, AOM, USASBE)</td>
</tr>
<tr>
<td></td>
<td>• Locate and contact universities with entrepreneurship programs</td>
</tr>
<tr>
<td></td>
<td>• SSRN and ‘ship journals to identify and contact authors and editors</td>
</tr>
<tr>
<td></td>
<td>Response confirmed large number of academics receptive to the project</td>
</tr>
<tr>
<td><strong>Selecting stakeholders</strong></td>
<td>• Target participants already teaching and researching entrepreneurship</td>
</tr>
<tr>
<td>Experience</td>
<td>• Leverages existing commitment to e’ship pedagogy and research</td>
</tr>
<tr>
<td>Excess capacity</td>
<td></td>
</tr>
<tr>
<td><strong>Minimising stakeholder exposure</strong></td>
<td>Will the research be high quality?</td>
</tr>
<tr>
<td>Off-the-shelf inputs</td>
<td>• Circulate conceptual model and proposed survey instrument</td>
</tr>
<tr>
<td></td>
<td>• Established constructs, sources cited</td>
</tr>
<tr>
<td></td>
<td>• Circulate ethics approval from home institution</td>
</tr>
<tr>
<td></td>
<td>• Circulate list of prospective participants</td>
</tr>
<tr>
<td>Customer investment</td>
<td>Is this the best use of my research efforts?</td>
</tr>
<tr>
<td></td>
<td>• Minimal additional effort involved.</td>
</tr>
<tr>
<td></td>
<td>• Emphasise focus on generating publications for ALL participants</td>
</tr>
<tr>
<td></td>
<td>• Release of local data to local participants within days of collection – supports further local research and collaborations</td>
</tr>
<tr>
<td></td>
<td>• Release of full data to all participants after each wave completed – supports further global idea generation and collaboration</td>
</tr>
<tr>
<td><strong>Trade-offs</strong></td>
<td>What if I prefer to design my own research</td>
</tr>
<tr>
<td></td>
<td>• Feedback from participants refines and improves research design</td>
</tr>
<tr>
<td></td>
<td>• Emphasise opportunities arising from scale and diversity of research</td>
</tr>
<tr>
<td></td>
<td>• Tailoring of survey instrument to meet local needs and research questions –unique web-based or hard copy survey for each university, with option to include additional questions</td>
</tr>
<tr>
<td><strong>Convincing stakeholders</strong></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial attributes</td>
<td>Proactive communication, projecting passion and determination</td>
</tr>
<tr>
<td></td>
<td>Rapid response to individual stakeholder concerns</td>
</tr>
<tr>
<td></td>
<td>Flexibility in tailoring survey instrument to local requirements</td>
</tr>
<tr>
<td>Ham and egging</td>
<td>Distribute list of interested participants to reinforce scale. Leverages credibility of recognised names on list, and opportunities for local collaboration.</td>
</tr>
<tr>
<td>Closing skills</td>
<td>Research partner agreement designed and circulated with research design. Clearly outlines rights and responsibilities of principal investigators and research partners</td>
</tr>
<tr>
<td></td>
<td>Prompt response to any queries and concerns, generating trust between principal investigators and research partners</td>
</tr>
</tbody>
</table>
The nature of stakeholder concerns and the EEP founders’ response to managing these issues fit well with the ‘Managing stakeholder risk’ and ‘Convincing stakeholders’ elements of the Stevenson, Roberts and Grousbeck (1994: ch. 6) model of stakeholder management.

A detailed research design was circulated with constructs identified and their sources cited so that prospective partners could verify the quality of the design. Feedback from participants was incorporated in developing iterations of the research design. [Minimising stakeholder risk]

A partnership agreement was developed, outlining rights and responsibilities of principal investigators (founders) and research partners (stakeholders), emphasising mutual benefits. Tailored partner agreements to incorporate specific partner concerns were accommodated where possible and reasonable. Rapid response to any partner queries or concerns generated a relationship of trust between founders and stakeholders. [Convincing stakeholders]

Finally, we turn to the ‘by whom’ aspect of entrepreneurship. Lumpkin and Dess’ (1996: 137) definition included these characteristics:

- “a propensity to act autonomously;
- a willingness to innovate and take risks;
- a tendency to be aggressive toward competitors;
- and proactive relative to marketplace opportunities”

The first author commented “from the moment I started corresponding with [project founder], I felt I was dealing with an entrepreneur”. Structured probing revealed high congruence with the definition of entrepreneurial orientation, as shown in Table 5 below.

Table 5: The Entrepreneurial Orientation of EEP

<table>
<thead>
<tr>
<th>Orientation dimension</th>
<th>Illustrative behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity to act autonomously</td>
<td>Despite initial collaboration to confirm the gap and develop the model and survey design, the act of launching the project was autonomous</td>
</tr>
<tr>
<td>Willingness to innovate and take risks</td>
<td>Academics are a critical audience. Proposing a major new project while still early-career researchers invites criticism and, potentially, condescension or even hostility. Whenever the first author offered feedback, careful to state it was constructive in intent, the repeated response was “Don’t worry, I am very thick-skinned”</td>
</tr>
<tr>
<td></td>
<td>The project founders offered each participating academic the opportunity to adjust the survey instrument (within a few boundary conditions) to suit their individual and/or institutional needs.</td>
</tr>
<tr>
<td>Aggressive toward competitors</td>
<td>“Aggressive” is not accurate, but aware of competing projects and confident that this work can and will be superior. Quote: “while there were competitors in terms of other projects to which scholars might be devoting their efforts, I think ours stands apart in many important ways”</td>
</tr>
<tr>
<td>Proactive relative to marketplace opportunities</td>
<td>When engaged in entrepreneurship education, it is obvious to ask what impact it has on entrepreneurial behaviour. The question is not new. The fact that so many academics were willing to sign up as research partners confirms that it is a question of widely held interest. However, nobody else had sought to pursue this research on such a scale or with such a comprehensive model.</td>
</tr>
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RESULTS AND IMPLICATIONS

If entrepreneurship is characterised by the outcome of creating an organization (e.g. Gartner, 1988), then the EEP is a successful entrepreneurial venture. As of October 2010, 303 individuals at 297 different universities, only 79 of which are in the USA, have signed on to participate in the Entrepreneurship Education Project. A further 162 individuals at additional universities were still
considering participation. The project has taken on an existence in its own right, though still at the early stage of organizational life cycle, where it is dependent on the founders (Churchill & Lewis, 1983).

The first wave of data collection commenced in August 2010 (southern hemisphere) and late September 2010 (northern hemisphere). In the first two months of data, with less than 20% of participating universities having started data collection, more than 6,000 responses had been collected. The research design involves subsequent waves of data collection approximately every twelve months for at least 10 years.

The project has the potential to:

- Explore a new, comprehensive model of entrepreneurial intentions (original motivation).
- Measure the impact of individual entrepreneurship education programs on students using a well-established theoretical framework and psychometrically sound measures of well-established constructs.
- Compare differences in experiences and impact between students from different “cultures” (i.e., public vs. private university, different regions/nations).
- Compare differences in impact between different programs on comparable student cohorts.
- Compare differences in impact of the same program on differing student cohorts.
- Through the pre-test wave of surveying, explore cognitive and affective differences between groups of students (e.g., different majors).
- Examine the cumulative effect of multiple entrepreneurship education programs on the same cohort of students.

Results support the proposition that an entrepreneurial approach to developing major research projects brings significant benefits. As the project matures, opportunities exist to examine its fit with later stages of the entrepreneurial process.

**Benefits of the entrepreneurial approach**

The founders of this research project are convinced that an entrepreneurial approach has led to significant improvements in the resulting project, including but not limited to:

- Scale, and therefore improved confidence in the findings due to a larger and more diverse sample
- Research design quality, thanks to the range of feedback on research design from research partners, allowing wide consensus on which constructs should (not) be included, and which variants of established constructs were most reliable.
- Commitment from participating researchers and access to their personal and professional networks, due to participative approach
- Ongoing opportunities for extension and enhancement, due to entrepreneurial sub-units forming within the research team.

From the perspective of a research partner, the benefits have been:

- Access to a much larger and more diverse data set than would be available through research focused only on local students and programs.
- Expanded knowledge of relevant models and constructs
- A potential network of researchers with common interests, education programs and comparable data
- Empirical research to inform ongoing program design.

**FUTURE IMPLICATIONS**

This paper asserts that there is much to be gained by adopting entrepreneurial approaches to designing and launching new research projects. However, this project is still in the start-up phase. What will happen as it grows and reaches maturity? Will it continue beyond two waves of data collection? Will
the founders close down the project? Expand it to an ongoing institution (as with the GEM model)? Harvest the intellectual property by transferring to a new owner?

Two cases are presented here, representing different types of entrepreneurship research projects and drawing analogies with different styles of entrepreneurial ventures. Other analogies may exist. Sources of opportunity have been usefully categorized into discovery and creation views (Alvarez and Barney, 2007). Both GEM and EEP fit the ‘creation’ perspective, wherein the opportunity is created by the actions and perceptions of the entrepreneur. Other research projects may follow the ‘discovery’ perspective, wherein the alert entrepreneurial researcher seeks out opportunities arising from the existing, external environment (for example, new grants from governments and other research funding bodies).

The ideas presented here apply to any type of research, not just research into entrepreneurship. However, entrepreneurship researchers, unlike most academic researchers, are familiar with the principles of entrepreneurial behaviour. But how many of us apply these principles to our own research activities? Most of us are, from time to time, somewhat despondent at the gap between exciting research questions and the resources available to us for pursuing them. Perhaps we should pause to think about the very behaviour we are researching and apply its lessons to our own research activities.

REFERENCES


APPENDIX A – EVOLUTION OF THE EEP

Steps in rough sequence, some conducted in parallel.

1. Preliminary research question: “Does what we do in the classroom (entrepreneurship undergrad courses) make any difference in terms of students actually starting their own business?”

2. Theoretical framework developed, based on Social Cognitive Career Theory (SCCT), embracing student choice (to start or not start a business), individual and contextual variables, motivational processes and the evolution of self-efficacy and identity.

3. Literature review on SCCT, entrepreneurship education and entrepreneurial intentions

4. Preliminary draft of conceptual model developed, based on established, validated measures.

5. Research Partner Agreement developed, outlining rights and responsibilities of both the project directors and Research Partners. Statement of intent rather than legal document.
6. Targeting entire population of interest (anyone who taught or was interested in undergraduate entrepreneurship and who would have access to undergrad students). Channels included:
   a. Posted invitations on AOM listservs, and USASBE membership list
   b. Universities that had entrepreneurship programs
   c. SSRN for papers posted there relating to entrepreneurship education,
   d. Journal search for related articles and author contact information
   e. E-mail addresses of all individuals listed as involved in the editorial board and as reviewers for entrepreneurship journals
   f. Global Entrepreneurship Week
   g. Google searches for additional contact information for professors

7. As of 15th October 2010, e-mail invitations sent to 1,567 individuals (estimated representing 1,200 schools)
   a. Follow-up invitations, updates, etc. sent every month or so
   b. No response from 796 individuals from that original 1,567
   c. 98 responded that they did not want to (too busy) or could not participate (no UG entrepreneurship programs)
   d. 303 individuals at 297 universities have signed on to participate (only 79 of which are from the US)
   e. Over 70 countries are represented
   f. Another 162 individuals responded with interest and are considering participating

8. Codebook for the survey created and shared with all Research Partners. Feedback requested (majority responded) and codebook revised to final version for Wave 1.

9. Partners invited to include individual questions specific to their respective university (very few took this up)

10. $10,000 as incentives for students (raffle/drawing for 100 x $100USD Visa Gift Cards) funded by the project founder

11. Project website (www.entrepeduc.org) created as repository for information and to give project legitimacy. Contains:
   a. Project background info, info on the theoretical framework (SCCT)
   b. Codebook for student survey Wave 1 (in password-protected area)
   c. List of Research Partners, their university affiliation, and the country (also contact details in password-protected area)
   d. Information flyer, research partner agreement, both IRB approval documents
      Will eventually contain de-identified datasets (in password-protected area)

12. Listserv developed for Research Partners to communicate/collaborate more efficiently and for Project Directors to disseminate information more efficiently

13. Research Partners surveyed for:
   a. entrepreneurial climate of their university (i.e., funding for entrepreneurship activities/courses/centers/initiatives, courses taught, programs offered, etc.)
   b. logistical information for the project
      i. Did they need the survey translated?
      ii. Could they do web-based surveys for students or did they need paper-and-pencil
      iii. What courses were offered at their university pertaining to entrepreneurship/small business management

14. Unique web-based survey developed for each university through Survey Monkey, including the university’s logo (to increase legitimacy for students)

15. Research Partners requested to review and approve their unique survey (lots of feedback here regarding grammatical errors, omission of pertinent courses from lists, etc.)

16. Messages outlining the protocol for surveying students
   a. One e-mail invitation and two reminder e-mail invitations to be sent one week apart
   b. Send e-mail invitation at very beginning of semester (if not before)
17. Wave 1 data collection, cleaning and dissemination (just commenced):
   a. Research partners advise when data gathering period begins and is complete
   b. Data to be downloaded, de-identified, and sent to research partner
   c. Responses to be compiled across universities, de-identified and sent it to all research partners. Also posted in secure area on the project website
   d. Brief report to be provided to each research partner with comparisons on key metrics to other universities (i.e., within their region, across the whole dataset, etc)
   e. Emphasis from day one for Research Partners to collaborate on presentations / publications across borders

18. Preliminary results
   a. As of October 13, 2010, data collection has commenced at 57 universities, which represents only 19% of the participating universities. Over 6,000 students have responded to the invitation to participate.