University Student Business Start-up and Growth through Student Programmes:

A Social Capital Perspective

Regina Maniam
Management Department, University of Otago, Dunedin, New Zealand
Email: Regina.Maniam@otago.ac.nz

André M. Everett
Management Department, University of Otago, Dunedin, New Zealand
Email: Andre.Everett@otago.ac.nz

Conor O’Kane
Management Department, University of Otago, Dunedin, New Zealand
Email: Conor.Okane@otago.ac.nz

Sergio Biggemann
Marketing Department, University of Otago, Dunedin, New Zealand
Email: Sergio.Biggemann@otago.ac.nz
University Student Business Start-up and Growth through Student Programmes:

A Social Capital Perspective

ABSTRACT

University student start-ups outnumber academic start-ups through research-oriented programmes. Yet, research on university student start-ups generated through the entrepreneurial ecosystem resulting from university student programmes is scarce. The context of the entrepreneurial ecosystem expands access to social capital and through it to additional forms of capital (human, financial, knowledge, physical, and others). This study uses a critical realist approach to examine different combinations of social capital elements that may cause growth or no-growth of student businesses startups. It contributes to (a) academic understanding of the effects of social capital on student start-ups; (b) practitioner understanding of conditions that impact student start-ups and growth; and (c) policy guidance on the collaborative roles of university, industry, and government in supporting student start-ups.

Keywords: entrepreneur, entrepreneurial learning, entrepreneurial spaces, start-up, SME, small business

The aim of this paper is to discuss the impact of university student curriculum-based and extracurricular programmes on start-up and growth of student businesses from a social capital perspective. Students engaging in university entrepreneurship programmes extend their network of contacts, giving them a wider and better access to resources useful for both new business start-ups and their subsequent growth. This study takes a critical realist approach in investigating the social capital elements (the causes or generative mechanisms) of university entrepreneurial programmes that contribute to the startup and growth of businesses. The qualitative comparative analysis (QCA) methodology is used to examine various combinations of conditions (social capital and condition of smallness) that can result in the same outcomes (a situation referred to as equifinality); in this study, the designated outcomes are ‘growth’ and ‘no growth’. The purpose of this study is to gain an understanding of (a) how university, industry, government, and society can engage in supporting student start-ups through university student programmes; and (b) how such collaborations affect the conditions that contribute to student business start-up and growth. This study is expected to contribute to economic development by improving on student programmes supporting entrepreneurial activities.
and also providing students entrepreneurial knowledge, skills, and access to a wider social network through which they can harness resources now and in the future building upon the social capital developed through the university entrepreneurial ecosystem.

**UNIVERSITY START-UPS**

Universities had two primary roles of teaching and research to which was added the third role of economic development. This third role led universities towards commercialisation activities resulting primarily from research-oriented activities of the hard sciences. Industry, the government, and university worked together as the Triple Helix in achieving economic goals. Over time, a broader societal consideration led to the inclusion of social entrepreneurship (referring to non-profit organisations) forming the Quadruple Helix, and environmental consideration leading to the Quintuple Helix (Carayannis & Rakhmatullin, 2014) compared to the earlier mainly profit-oriented ventures. These have led to a more inclusive definition of entrepreneurship impacting a wider population as well as expanding the definition of entrepreneurship to include social and lifestyle entrepreneurs, and ecopreneurs.

Literature on university student start-ups is limited compared to start-ups originating from university research activities. Siegel and Wright (2015) state that there has been a narrow focus on contribution towards economic development by university outcomes such as patents, licenses, and start-ups from research activities. They emphasise that there are other entrepreneurial opportunities through non-IP options and other forms of entrepreneurial ventures.

This section first elaborates on the types of literature resulting from research done on research-oriented activities followed by the emerging literature on non-research-oriented activities.

**Research-oriented start-ups**

Hybrid organisations, resulting from the co-operative efforts of the Triple Helix of university, industry, and government, include Technology Transfer Offices (TTOs), incubators, and science parks infrastructure support for business start-ups, patents and licenses (Etzkowitz, Webster, Gebhardt, & Terra, 2000; Laursen & Salter, 2004). These structural support for research-oriented start-ups have made easier access to data for research purposes (Hughes & Kitson, 2012). Access to research participants such as academic entrepreneurs and other related actors is also relatively easier as
compared to accessing information on students who have left the university, leading to a proliferation of literature on academic entrepreneurship over the years.

The overlap of the Triple Helix actors saw the formation of hybrid organisations e.g. technology transfer offices (TTOs), business support institutions (e.g. technology incubators, start-up accelerators), and financial support institutions (e.g. angel investors, venture capital firms) (Etzkowitz et al., 2000; Ranga et al., 2013). This allows individuals and organisations to take on the role of the other when the other is under-performing. Fewer layers of management and less centralised decision making of these hybrid organisations increase their flexibility and responsiveness. However, except for a few successes, many TTOs had difficulty even recovering the cost of their set up, besides not being equipped to serve small and medium enterprises (Geuna & Muscio, 2009). Furthermore, universities are not generally able to contribute to businesses that lack absorptive capacity (Breznitz & Feldman, 2012). Academics involved in such activities also face orientation and transaction barriers (Tartari, Salter, & D’Este, 2012). Businesses have a short-term, profit-oriented outlook as opposed to the long-term, research-oriented outlook of academics. There are also issues with academics wanting to release findings for publication compared to industry need not to release such information for competitive reasons. There are transactional barriers referring to the costs of commercial engagements due to university rules and regulations. Research-oriented activities also alienate the social sciences from much of the type of commercialisation opportunities that are relevant only to the (hard/physical) science disciplines (Hughes & Kitson, 2012). There are also only limited opportunities for student participation where a limited number of postgraduate students are able to participate in research-oriented activities (Ponomariov, 2009). There is a wide range of literature based on academia and industry as actors (Ankrah, Burgess, Grimshaw, & Shaw, 2013), but limited work focusing on student involvement.

However, since 2010, literature has emerged highlighting the significance of university student start-ups.

Non-research-oriented start-up literature

Bathelt, Kogler, and Munro (2010) found that more information technology (IT) firms in the Kitchener and Guelph metropolitan areas, west of Toronto, Canada, were university-related start-ups
by students as opposed to direct university start-ups (through academic-led research). Åstebro, Bazzazian, and Braguinsky (2012), in reviewing studies on MIT in USA, Halmstad University in Sweden, and Chalmers University in Sweden, came to a similar conclusion that student activities have generated more start-ups than have direct university start-ups from research activities. A European Commission report on university-business collaboration on all the European countries listed student entrepreneurship as key not only for entrepreneurial but also for employability skills for graduates (Davey, Baaken, Muros, & Meerman, 2011).

Studies on university-business collaborations in curriculum-based education and extracurricular programmes are limited in comparison to studies on technology research that has been more explicitly developed (Healy, Perkmann, Goddard, & Kempton, 2014). Industry collaboration with the university is important in the development and delivery of curriculum-based teaching that will prepare students to launch their own businesses now or in the future, or be able to think entrepreneurially and have an understanding of the ‘real world’ when they are employed by other organisations (Davey et al., 2011; Healy et al., 2014; Walshok & Shapiro, 2014). Shah and Pahnke (2014) described the role of technological and entrepreneurial knowledge in the creation of start-ups highlighting that there are start-ups that happen outside of research activities.

Whatever the mode of start-ups, crucial to businesses is an understanding of business growth to be able to expand their business, close down the business, or be satisfied with the level of growth that they are happy with.

**BUSINESS GROWTH**

Both output and mode of growth are important for businesses (Penrose, 1995). However, there has been greater coverage in growth literature on growth as an outcome as in sales, revenue, profit, and increase in number of employees as compared to growth mode (McKelvie & Wiklund, 2010). The outcome of growth is the result of the growth mode employed. As an example a greater increase in revenue growth can be shown through acquisition of a business or through organic growth. Many studies consider the differences in growth without considering the qualitative differences in how growth was achieved (Shepherd & Wiklund, 2009). This study adopts growth mode as the measure of business growth adding content to an area of limited research. Businesses considered
include profit-motivated businesses, social entrepreneurs, ecopreneurs, as well as home businesses that may not be registered formally.

Growth mode can be grouped into organic growth, growth by acquisition, and hybrids. Organic growth can be achieved through new and/or improved products, processes, channels, and new markets. Acquisition strategy involves buying other businesses. Hybrids include licensing, franchises, joint ventures, and strategic alliances among others.

While looking at growth mode, it is also necessary to understand conditions of smallness and the dark side of social capital that restrict growth. Action on such restrictions can enable growth. Conditions of smallness include (a) small business owners preferring the freedom of running their businesses as they choose to, and (b) the avoidance of the burdensome nature of regulatory requirements (Anderson & Ullah, 2014). The dark side of social capital refers to the bond of close knit groups that constrain individuals from breaking away from the limitations of their community, as well as access by outsiders from the group learning from the group. This is further elaborated in the next section on social capital.

**SOCIAL CAPITAL**

Social capital is seen both as glue and a lubricant that brings together human, knowledge, intellectual, finance, and physical capital required for businesses to grow (Anderson & Jack, 2002). Both bonding (as glue) and bridging (lubricant) social capital play an important part in the start-up and growth of businesses. Optimal configurations combine both bonding and bridging (Gulati, Lavie, & Madhavan, 2011) with the configuration of the entrepreneur’s social capital changing over time as the business grows. These two forms of social capital exist internally within a network or external to that network. The group that forms the university entrepreneurial ecosystem includes all academic, administrative, and extracurricular functions within the university; and business and governmental representatives who are co-opted into the university’s entrepreneurial programmes.

**Bonding and bridging social capital**

Bonding brings together people who are like one another creating associations with homogenous members while bridging links people who are unlike one another creating associations with heterogeneous members (Putnam & Goss, 2002). Bonding due to strong ties with family
members, friends, and business contacts can be reliable and trustworthy (Stam, Arzlanian, & Elfring, 2014) as it provides avenues for funding, sharing of resources with established businesses (Jones & Jayawarna, 2010) and also access to skills, knowledge and emotional support (Sequeira, Mueller, & Mcgee, 2007). Both curriculum-based and extracurricular entrepreneurial programmes by universities involve (a) university academics and administrators who provide the knowledge; (b) business mentors who advise on relevant strategy; and (c) governmental representatives who provide guidance on the rules governing the running of businesses.

Coleman (1988)’s theory of network closure underpins the concept of bonding social capital. Figure 1b depicts network closure where all actors are closely bonded to each other, and will support each other in providing resources that an entrepreneur might need. If any one of them steps out of line, he or she is sanctioned. On the other hand, in Figure 1a there is no closure and it is relatively more difficult to get support and also for sanctions.

There is, however, a dark side of bonding social capital. Bonded solidarity amongst group members have the potential to (a) restrict access to group resources by external actors, (b) share a common experience of adversity, and (c) an opposition to mainstream activities (Portes, 1998). Being part of the group also applies pressure on individuals who want to break away from the restrictions placed by the group. There are also free riders who want to share in the success of the entrepreneur either by wanting access to funds or through the business employing group members even if they are not the best candidates for the job.

Another feature of bonding social capital is the homogeneity of resources within the group which creates redundancy after the initial phase. Beyond a point other heterogeneous resources are required and these can be accessed through bridging social capital. Bridging social capital enables access to non-redundant knowledge over sparse networks which has the advantage of less maintenance costs of the ties (Liao & Welsch, 2003). Hence, bridging is said to be useful in getting ahead while bonding is useful in getting by (Putnam).
The theories underlying bridging social capital are Granovetter (1973)’s strength of weak ties and Burt (1992)’s theory on structural holes. The strength of weak ties describes that when ties among actors are weak, there is a lesser chance of resources being exchanged. These ties are strong because they hold heterogeneous or non-redundant resources that entrepreneurs are looking for. As compared to this, resources available within strong ties become redundant after a point in time. Structural holes, on the other hand, are possible connections that are weak or not existent between actors, both of whom are connected to one common actor. This common actor has the potential of brokering a connection between the other two actors by bridging.

Another perspective of internal and external social capital must also be taken into account to acquire resources required for business growth.

**Internal and External social capital**

Another view of social capital is that of internal and external social capital. Internal social capital is accessed from within a defined network and external social capital applies to links external to the defined network (Geys & Murdoch, 2010). Bonding and bridging social capital exist both internal to the network and externally (Figure 2). In the university entrepreneurial ecosystem, internal social capital is derived from all functions within the university as well as resources from industry and governmental organisations that participate in the university student programmes. While studies of above concepts have been done, there is little literature on the combined effect of internal bonding and bridging, and external bonding and bridging.

OVERVIEW OF THE STUDY

The context of the study is university student programmes (both curriculum-based and extracurricular) within the university entrepreneurial ecosystem, which includes the university, industry (including social and environmental organisations) and governmental actors who support the student programmes. The purpose of the study is to investigate how internal and external bonding and bridging social capital, the dark side of social capital, and condition of smallness impact the growth of
businesses started by university students and former students (Figure 3). The term ‘businesses’ includes profit-motivated businesses, social entrepreneurs, and ecopreneurs, as well as home businesses that may not be registered formally. The research question of this study is:

How do university student curriculum-based and extracurricular programmes impact student business start-up and growth?

A critical realist approach is taken, influencing the research design, with qualitative comparative analysis (QCA) as the analysis method central to the study. QCA considers various combinations of conditions (social capital and condition of smallness) that produce the same outcomes (referred to as equifinality); in this study, the outcomes are ‘growth’ and ‘no growth’. Study of entrepreneurial social capital using a critical realist approach has been encouraged (Lee & Jones, 2015). There is also a call for future research to test equifinality to find optimal configurations of conditions (Payne, Moore, Griffis, & Autry, 2011).

CONCLUSION, CONTRIBUTIONS, AND FUTURE RESEARCH

Research on the university’s role in economic development has for many years focused on academic entrepreneurship based on research-oriented start-ups. With a much larger population of students going through the university system, research on university student start-ups is anticipated to have an increasing impact on economic development. This research is focused on studying the impact that university student curriculum-based and extracurricular programmes have on the growth of businesses started up by students and former students. This study intends to contribute to (a) the gap in research and literature using a social capital perspective with attention to internal and external bonding and bridging social capital and the dark side of social capital; (b) practice through a better understanding of conditions that impact student start-ups and growth; (c) policy guidance on the collaborative roles of university, industry, and government in supporting student start-ups, and in preparation of the student programmes.
Limitations and future research

The study is limited to selected universities in New Zealand. Future research can be done to include a broader range of universities. This study can be taken to the next level by extending it to other countries based on the research design of this study. It can also be extended to cover other higher education institutions as well as secondary schools and vocational schools.

The study has been approved by the university’s ethics committee and the pilot interviews are starting at the time of this submission; the project will be mid-way by the time of the conference.


APPENDIX

Figure 1: Coleman's Theory of Network Closure

(a) Without network closure; (b) with network closure

Source: (Coleman, 1988, p. S106)

Figure 2: Internal and External Bonding and Bridging Social Capital
Figure 3: Overview of the Study

CONTEXT

CONNECTIONS

+ Dark side of social capital
+ Condition of smallness

OUTCOMES

Growth as process
Organic
Acquisition
Hybrid
No growth
University Student Business Start-up and Growth through Student Programmes:

A Social Capital Perspective

Summary of Changes

<table>
<thead>
<tr>
<th>Original text</th>
<th>Replacement text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Paper</td>
<td>Interactive Paper</td>
</tr>
<tr>
<td>Title change (Page 1) University Student Business Start-up and Growth through Student Programmes</td>
<td>University Student Business Start-up and Growth through Student Programmes: A Social Capital Perspective</td>
</tr>
<tr>
<td>Abstract (Page 1) University student start-ups outnumber academic start-ups through research-oriented programmes. Yet, research on university student start-ups generated through the entrepreneurial ecosystem resulting from university student programmes is scarce. This study examines how university student programmes impact start-up and growth of businesses by university students. Social capital enables access to other forms of capital (human, financial, knowledge, physical, and others), while the context of the entrepreneurial ecosystem extends the limitations of social capital access. This study contributes to (a) academic understanding of the effects of social capital on student start-ups; (b) practice through a better understanding of conditions that impact student start-ups and growth; and (c) policy guidance on the collaborative roles of university, industry, and government in supporting student start-ups.</td>
<td>University student start-ups outnumber academic start-ups through research-oriented programmes. Yet, research on university student start-ups generated through the entrepreneurial ecosystem resulting from university student programmes is scarce. The context of the entrepreneurial ecosystem expands access to social capital and through it to additional forms of capital (human, financial, knowledge, physical, and others). This study uses a critical realist approach to examine different combinations of social capital elements that may cause growth or no-growth of student businesses startups. It contributes to (a) academic understanding of the effects of social capital on student start-ups; (b) practitioner understanding of conditions that impact student start-ups and growth; and (c) policy guidance on the collaborative roles of university, industry, and government in supporting student start-ups.</td>
</tr>
<tr>
<td>Below keywords (Page 1) The aim of this paper is to discuss the impact of university student curriculum-based and extracurricular programmes on student business start-ups and growth from a social capital perspective. Students engaging in university entrepreneurship programmes extend their network of contacts, giving them a wider and better access to resources useful for both new business start-ups and their subsequent growth.</td>
<td>The aim of this paper is to discuss the impact of university student curriculum-based and extracurricular programmes on start-up and growth of student businesses from a social capital perspective. Students engaging in university entrepreneurship programmes extend their network of contacts, giving them a wider and better access to resources useful for both new business start-ups and their subsequent growth. This study takes a critical realist approach in investigating the social capital</td>
</tr>
</tbody>
</table>
elements (the causes or generative mechanisms) of university entrepreneurial programmes that contribute to the startup and growth of businesses. The qualitative comparative analysis (QCA) methodology is used to examine various combinations of conditions (social capital and condition of smallness) that can result in the same outcomes (a situation referred to as equifinality); in this study, the designated outcomes are ‘growth’ and ‘no growth’.