Perceived Barriers and Needs by Entrepreneurial University Students in New Zealand

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Entrepreneurship is a vital force in the generation of a nation's wealth. It relates to the motivation, energy or drive of individuals to make a living as a self-employed person. Universities are an increasingly attractive source and resource for entrepreneurship. This is because of the expectation that higher levels of education can create higher quality of entrepreneurship and productive power. Increasingly, universities are asked to provide evidence for their contribution to society and, amongst other things, to the economic wealth of nations. It is therefore of interest as to what assistance universities could offer to create help create and assist entrepreneurs. Put another way, what are the barriers and needs and motivations perceived by potential and actual entrepreneurs? What are potential ways universities can assist entrepreneurs? The present report attempts to provide some answers to this question with special reference to New Zealand. This is the first but not exhaustive report on the findings.

Methodology

The survey has been conducted at a universities in 14 countries, is web-based, and administered by St Gallen University, Research Institute of Small and Medium Enterprises. Previous versions of the survey had been tested in Germany and Switzerland. This is the first time it is tested in an English environment. It is planned to be repeated bi-annually.

The survey was administered between the beginning of March and the end of May in 2006. In New Zealand, there are 7 major universities and a number of other tertiary institutions such as polytechnics. Only universities were included. The two largest institutions from both the North and South Island were chosen for their breadth of subject areas and potential sources and resources for entrepreneurs. Negotiations with university student administrations proved to be a major hurdle. While there was ample interest, the actual technical feasibility was hampered because of such issues as, perceptions of spam until the true nature of the research had been understood, ethical approval to approach students via university intra-nets, and perceptions that students might be overloaded with messages. In the end, the two targeted universities of the North Island declined with one promising to keep the ethical approval granted in the first place, open for two years. The other university declined, apparently more for technical than any other reasons as it runs a number of campuses in the North Island.

An e-mail was sent to students via the universities intra-net services. There was no direct contact between researcher and student. The letter contained an invitation to answer the questionnaire, reasons as to its purpose, and attractive incentives sponsored by New Zealand's economic development organization, New Zealand Trade and Enterprise (http://www.nzte.govt.nz/section/11909.aspx). The first letter was sent at the beginning of March 2006 with a follow-up reminder by mid-May. The server in Switzerland closed during the first few days of June 2006. The letters contained an internet link to the server in Switzerland where all data from all countries was collected. After the closing date, the data file of New Zealand's students were sent to the researcher. In a different section of the questionnaire which was independent and had its own link to the server, students were also asked as to whether they would want to participate in a sweepstake for the prizes. The

winners of incentives were chosen from a list of e-mail addresses in Switzerland and the list sent back to the researcher. The winning students were contacted via e-mail of their fortunes and asked for their mailing addresses.

Sample Description

The sample (n= 7970) for the Entrepreneurship survey was taken from two universities in New Zealand, the University of Otago (n= 4298; population 18421; return rate = 23%) and the Christchurch University (n= 3661; population 11.901; return rate = 31%), both situated in the South Island. The total sample comprised 47% males and 53% females.

	Quantity	Percent
Male	3,726	46,8%
Female	4,244	53,2%
Total	7,970	100%

Table 1 Gender Distribution

Students' ethnic origin is mainly Pakeha/European and New Zealanders (73.8%) with 2.4% identifying as Maori and 13.7% as Asian (See Table 2). Asking for students' mother tongue showed that 80.6% have an English speaking background while 20% share a wide variety of cultural backgrounds. The largest international contingent is Chinese (8.1%), followed by 1.4% Germans. A further 8.2% represent many other cultural backgrounds not tabled here including Pacific Islanders, Indians, Ukrainians and Afghanis (see Table3).

	Quantity	Percent
Maori	193	2.4%
Pakeha/European	2,147	26.9%
New Zealander	3,738	46.9%
Asian	1,093	13.7%
Other	799	10.0%
Total	7,970	100

Table 2 Ethnic Background

	Quantity	Percent
German	114	1.4%
French	38	0.5%
Italian	7	0.1%
English	6,421	80.6%
Finnish	5	0.1%
Norwegian	7	0.1%
Hungarian	4	0.1%

Chinese	648	8.1%
Turkish	4	0.1%
Croatian	3	0.0%
Spanish	16	0.2%
Arabian	46	0.6%
Other	657	8.2%
Total	7,970	100%

Table 3 Mother Tongue

Table 4 shows the year of study with between 20-25% of students in their Bachelor years, some 15% in their fourth, and 14% in their fifth year. Asking for the level of study (not tabled here), results show that many 4th year students are pursuing double degrees. A total of 80% of all students are still in their Undergraduate years, while 11.5% are Graduate students (n=908) and 4.5% are PhD students (n= 361). 94% of the sample is full time and the other 6% are part time students.

	Quantity	Total Percent	Relative Percent	Cum Percent
1st academic year	1,810	22.7%	22.7%	22.7%
2nd academic year	1,768	22.2%	22.2%	44.9%
3rd academic year	2,020	25.3%	25.4%	70.3%
4th academic year	1,259	15.8%	15.8%	86.1%
5th and further academic year	1,108	13.9%	13.9%	100%
Total	7,965	99.9%	100%	
Missing	5	0.1%		

Table 4 Year of Study

The **average age** of participants is 22.8 years (median and mode 21), or 80% are 24 years or younger, some 10% are between 25 and 30 years of age while another 10% is older than 30.

As expected, the range of subjects studied is wide. There are only a few differences between the two universities in terms of relative percentages of students studying in the various fields. Christchurch specializes in engineering (21% vs. 1.1% at Otago) whereas Otago has a major medical school (23% vs 1.4% at Christchurch) and is also prominent in sports (4% vs 0.4% at Christchurch). The distribution across the sample in Table 5 is for both universities.

Field	Quantity	Percentage
Economics	487	6.1%
Business administration	885	11.1%
Business information Systems	352	4.4%
Law	733	9.2%
Mathematical sciences (Math, physics, info systems, astronomy)	458	5.7%
Natural sciences (chemistry, biology, geology, geography)	1,069	13.4%
Medical sciences and pharmaceutics	1,031	12.9%
Civil engineering, architecture	325	4.1%
Mechanical and electrical engineering	478	6.0%
Agricultural and forestry science	36	0.5%
Theology	32	0.4%
Philology and literary studies	202	2.5%
Science of history and cultural studies	305	3.8%
Social sciences (psychology, sociology and similar subject	1,380	17.3%
Sports	193	2.4%
Military sciences	4	0.1%
Total	7,970	100%

Table 5 Field of study students are majoring in / pursue Ph.D.

Interest in Entrepreneurship

For this part of the description of the sample, it is of interest to also look at two further questions. First, there is students' involvement with the concept of Entrepreneurship (see Table 6.1) as well as their aspirations as to where they see themselves employed a) within 5 years after finishing their studies at university and b) where they see themselves employed *after* those 5 years (see Table7).

Commitment to Entrepreneurship Scale (1-3 and 5-7)*	Quantity	Percent
1 No, never	1,682	21.1%
2 Yes, sketchily	3,683	46.2%
3 Yes, rather concretely	938	11.8%
4 *Yes, but I turned away from it*	428	5.4%
5 Yes, I am bound and determined to work self-employed	719	9.0%
6 Yes, I already started with the realisation	260	3.3%
7 Yes, I am already self-employed	127	1.6%
8 *Yes, I was self-employed, but no longer am*	133	1.7%
Total	7,970	100%

Table 6.1 Have you personally, ever concretely thought of building up your own self-employed entrepreneurial existence?

* Apart from categories 4 and 8 in Table 6.1, the sequence of categories indicates an increase in intensity of thinking about becoming an entrepreneur. This sequence of categories will henceforth be referred to as the 'Commitment to Entrepreneurship' scale.

Table 6.1 shows that 21% have never thought about becoming entrepreneurs while almost 50% have at least toyed with the idea. Some 33%, however, have had serious thoughts about stepping out and becoming self-employed. Of those who state that they have actual experience in self-employment (ticked boxes 7 and 8 in Table 6.1 (n=260)), 75 have had no experience in their chosen future career, whereas 184 have, meaning that about 30% of those with entrepreneurial experience are seeking new horizons going beyond their past entrepreneurial or work experience.

Table 6.2 shows in which industries the majority of those who want to start up their business wish to locate themselves. It can be noted that the majority seeks opportunities in trade and the (public) services industries as opposed to product and manufacturing sectors.

	Have you personally ever concretely thought about building up your own self-employed entrepreneurial existence, i.e. being self-employed?		Total
In which industry have you or are you planning to start up your business?	yes, I am already self-employed	yes, I was self-employed, but no longer am I	
agriculture, hunting, forestry and fishing	7	9	16
Mining	0	1	1
production of food products, beverages and tobacco	2	7	9
production of textiles, textile products, leather and footwear	3	1	4
production of wood and products of wood and cork	2	1	3
production of pulp, paper, paper products, printing and publ.	2	1	3
production of chemical, rubber, plastics and fuel products	0	3	3
production of other non-metallic mineral products	1	0	1
production of basic metals and fabricated metal products	0	1	1
production of machinery and equipment	1	1	2
production of manufacturing NEC, recycling	1	1	2
electricity, gas and water supply	1	0	1
Construction	3	5	8
wholesale and retail trade	14	8	22
restaurants and hotels	7	8	15
transport and storage	6	0	6
Communication	21	13	34
finance, insurance, real estate	8	3	11
business services	20	21	41
public admin. and defence; compulsory social security	0	2	2
Education	4	13	17
health and social work	6	12	18
other community, social and personal services	17	22	39
Total	**126**	**133**	**259**

Table 6.2 Chosen Industries of Future Entrepreneurs with Past Experience

The same trend of where aspiring entrepreneurs see their future continues with those who are committed to becoming self-employed but have, as yet not actually worked in their chosen fields. Table 6.3 shows the industries chosen by those who ticked boxes 5 and 6 in Table 6.1. (those who are determined and those who have started the realization of their businesses).

In which industry have you or are you planning to start up your business?	Extent of E-Ship		Total
	Bound & Determined	Already Started	
agriculture, hunting, forestry and fishing	27	10	37
mining	4	2	6
production of food products, beverages and tobacco	22	16	38
production of textiles, textile products, leather and footwear	12	12	24
production of wood and products of wood and cork	2	5	7
production of pulp, paper, paper products, printing and publ	6	2	8
production of chemical, rubber, plastics and fuel products	9	7	16
production of other non-metallic mineral products	1	1	2
production of basic metals and fabricated metal products	7	3	10
production of machinery and equipment	15	5	20
production of transport equipment	3	2	5
production of manufacturing NEC, recycling	2	2	4
electricity, gas and water supply	9	7	16
construction	18	4	22
wholesale and retail trade	79	32	111
restaurants and hotels	69	21	90
transport and storage	5	3	8
communication	40	22	62
finance, insurance, real estate	56	17	73
business services	95	22	117
public admin. and defence; compulsory social security	14	3	17
education	29	14	43
health and social work	113	23	136
other community, social and personal services	79	23	102
Total	**716**	**258**	**974**

Table 6.3 Chosen Industries of Future Entrepreneurs without Past Experience

Returning to *the total sample*, Table 7 shows the type of employment students seek a) within the first five years after studies and b) in the years beyond. This is of interest as many students expressed their willingness to gain practical experience first before striving for self-employment.

There are roughly five subgroups in Table 7, those seeking employment by micro firms, SMEs or corporations (1-6) we here call 'Other Employed', those striving for careers in public service including at university (7 & 8) named 'Public or Uni Service', and those who seek various forms of self employment (9-13) henceforth called 'self-employed'. Further, there are those who wish to start families as their main goals for the time horizons given, and those who do not know.

	Main activity directly after studies (<5 Years)		**Main activity five years after studies (>5 Years)**	
	Quantity	**Percent**	**Quantity**	**Percent**
1) Paid employment at a micro enterprise	411	5.2%	208	2.6%
2) Paid employment at a small enterprise	1,017	12.8%	421	5.3%
3) Paid employment at a medium-sized enterprise	1,287	16.1%	475	6.0%
4) Paid employment at a big company	995	12.5%	706	8.9%
5) Paid employment as a researcher at a university/ college	551	6.9%	392	4.9%
6) Paid employment in civil / public service	756	9.5%	422	5.3%
7) Self employment getting in the family business	171	2.1%	185	2.3%
8) Self employment taking over an existing business	98	1.2%	263	3.3%
9) Self employment starting-up a franchise business	71	0.9%	213	2.7%
10) Self employment investing into an existing company	139	1.7%	357	4.5%
11) Self employment in your already founded start-up	102	1.3%	163	2.0%
12) Self employment starting up a business	268	3.4%	1,213	15.2%
13) Self employment working as self-employed person	154	1.9%	589	7.4%
14) Founding a family as main activity	322	4.0%	859	10.8%
15) Don't know yet	1,628	20.4%	1,504	18.9%
Total	7,970	100%	7,970	100%

Table 7 Which principal / main activity are you striving for after your studies?

While there is some 40% agreement between the careers chosen from one time period to the next ($r = .376$; $p < .001$), an inspection of the columns reveals that there is a clear trend from other-employment to self-employment after 6 years from leaving university. In other words, while 47% seek paid employment within the first 5 years after leaving university, only 23%

see themselves in an employee relationship after that time. Correspondingly, while some 13% of all students see themselves as entrepreneurs right after finishing their degree, the number grows to 37% after 5 years.

Concrete Steps Taken towards founding a Business

The following Table 8 shows the steps one needs to take when founding a business. If we consider a certain sense of realism as to which step is appropriate at what time, the sequence reflects a certain increase in intensity of commitment. The results of the descriptive Table 8 further reflect the trend in numbers from Table 6.1, i.e. of those who have thought about becoming an entrepreneur, and the previous Table 7 which showed what types of employment students were going to seek. In other words, given the nature of the commitments at university, the higher the level of commitment in terms of steps taken to become an entrepreneur, the smaller the number of students in each category.

Steps Taken Scale*	Quantity	Percentage
No steps taken	2,753	45.2%
Thinking through first business ideas	2,886	47.4%
Writing down first business ideas	1,181	19.4%
Developing a business plan	670	11.0%
Gathering start-up specific information	734	12.1%
Visiting start-up specific events	372	6.1%
Talking to potential sources of financing	353	5.8%
Determining a date of foundation	137	2.3%
Prototype of product/service exists	314	5.2%
Total	6,087	154.4%

* Students could tick these categories according to what they had already done towards founding a business. The closer they were to founding a business, the more they would have done. In this way, the categorical scale was transformed into an interval scale, by simply adding the categories together for each respondent.

Table 8 Which steps did you already take for your potential start-up?

When correlating Table 8 above with Table 6.1 (Commitment to Entrepreneurship; see footnote Table 6.1) the expectation that the more students are committed to entrepreneurship, the more steps they would have taken is corroborated by a fairly strong correlation (Spearman's rho = .380, p<.000; Pearson's r= .409, p<.000; n= 5725).

Excluding those who are self-employed already, an analysis of variance using the Commitment variable and the Steps Taken variable above results in a highly significant difference between the Committed groups on the Steps Taken scale (see footnote Table 8; sig. difference .000, 4df; Chi Square 926.225). This demonstrates the nomological or face-value validity of the scale and justifies their further use for comparisons as the Commitment variable shows good convergent and discriminative validity. In other words, the results simply make sense and the differences shown between the groups indicate that Commitment is capable of highlighting true differences between members of each category. In addition, the

results show that the scales have interval qualities and may be used in parametric statistical tests with caution.

Barriers to Entrepreneurship

The following Table 9 records students' impression as to where the hurdles lie for becoming entrepreneurs. In a first approach, Table 9 shows the percentages for each category (from "a very small hurdle' to "a very big hurdle').

		Very small hurdle	Pretty small hurdle	Rather small hurdle	Rather big hurdle	Pretty big hurdle	Very big hurdle	Total
1) lack of the right business-idea	**Quantity**	427	794	1,364	2,065	1,868	1,452	7,970
	Percent	5.4%	10.0%	17.1%	25.9%	23.4%	18.2%	100%
2) complicated regulatory efforts	**Quantity**	260	801	2,570	2,811	1,202	326	7,970
	Percent	3.3%	10.1%	32.2%	35.3%	15.1%	4.1%	100%
3) own financial risk	**Quantity**	236	556	1,256	2,261	2,220	1,441	7,970
	Percent	3.0%	7.0%	15.8%	28.4%	27.9%	18.1%	100%
4) lack of courage	**Quantity**	580	1,007	1,831	1,950	1,578	1,024	7,970
	Percent	7.3%	12.6%	23.0%	24.5%	19.8%	12.8%	100%
5) lack of the right founding partner	**Quantity**	391	902	1,875	2,474	1,681	647	7,970
	Percent	4.9%	11.3%	23.5%	31.0%	21.1%	8.1%	100%
6) lack of equity	**Quantity**	251	627	1,704	2,561	1,803	1,024	7,970
	Percent	3.1%	7.9%	21.4%	32.1%	22.6%	12.8%	100%
7) lack of debt capital	**Quantity**	221	545	1,667	2,722	1,901	914	7,970
	Percent	2.8%	6.8%	20.9%	34.2%	23.9%	11.5%	100%
8) know-how deficit (e.g. tax or law issues)	**Quantity**	300	806	1,849	2,224	1,811	980	7,970
	Percent	3.8%	10.1%	23.2%	27.9%	22.7%	12.3%	100%
9) lack of contact to clients / customers	**Quantity**	300	869	1,917	2,119	1,810	955	7,970
	Percent	3.8%	10.9%	24.1%	26.6%	22.7%	12.0%	100%
10) economical cycle	**Quantity**	311	968	2,780	2,433	1,148	330	7,970
	Percent	3.9%	12.1%	34.9%	30.5%	14.4%	4.1%	100%
11) business environment / economic policy	**Quantity**	311	989	2,623	2,460	1,219	368	7,970
	Percent	3.9%	12.4%	32.9%	30.9%	15.3%	4.6%	100%
12) fear of failure	**Quantity**	700	1,265	1,771	1,647	1,430	1,157	7,970
	Percent	8.8%	15.9%	22.2%	20.7%	17.9%	14.5%	100%
13) support from family and friends	**Quantity**	2,210	1,766	1,982	1,085	596	331	7,970
	Percent	27.7%	22.2%	24.9%	13.6%	7.5%	4.2%	100%
14) lack of time	**Quantity**	628	1,168	1,839	1,980	1,486	869	7,970
	Percent	7.9%	14.7%	23.1%	24.8%	18.6%	10.9%	100%
15) lack of entrepreneurial qualifications / skills	**Quantity**	596	965	1,766	1,839	1,622	1,182	7,970
	Percent	7.5%	12.1%	22.2%	23.1%	20.4%	14.8%	100%

Table 9 Where do you see the greatest hurdles for starting-up a business?

Studying the above figures, it becomes apparent that a 'lack of the right business ideas' and 'partners', as well as financial risks are perceived major hurdles by all students.

In order to recognise any underlying dimensions amongst the above variables, a factor analysis was conducted. A successful factor analysis relies on the correlation between variables. A Principal Component analysis resulted in only two factors (two varimax rotated factors explaining 70% of the variance; Chronbach alpha = .63). The first factor, Financial Hurdle, explains 42 % of the variance while the other factor, Support Hurdle, explains 28%. Financial Hurdles comprise lack of debt and equity capital as well as the fear of one's own financial risk. The second factor is that New Zealand's students clearly see the need for family support and perceive a lack of time to conceive of ideas, let alone developing and operationalising good business ideas from concept to market.

An analysis of variance which compares students at different levels of commitment (see Commitment variable Table 6.1) regarding the above Financial and Support hurdles showed that no differences could be found. In other words, no matter how committed students are, these are the most important perceived hurdles across all groups, whether aspiring or committed entrepreneurs or none of these at all.

In a further attempt to separate those with clear ideas as to who they want to be in the future, only those who actually had begun to think about entrepreneurship expressly and concretely were included in an analysis of the perceived differences regarding all other hurdles not dealt with in the above factor analysis. In this case, it involved all those between category 3 (Thought Concretely about it, and Self Employed, see Table 6.1)

A multivariate analysis of variance (MANOVA in SPSS) with a Scheffe test controlling for different group sizes resulted in a number of differences between the increasing levels of commitment. All multivariate test indicators show highly significant results ($p < .000$).

At the level of the individual variable, the following differences appeared (all sig. differences are <.05). Those who had already started their own business were not worried about having 'the right business idea' anymore, as they had already begun in their commitment. However, they differed significantly from all others ('Bound and Determined' and 'Thought about it rather concretely' see Table 6.1) but not from those who had 'Already Started to realize their business idea'.

There is no perceptual difference between the groups in terms of the fact that one might face 'regulatory difficulties'. However, the ones 'Bound and Determined' and those who considered entrepreneurship 'Rather Concretely' distinctly 'lack courage' as opposed to the already self-employed.

Only the self-employed differ significantly from all others in having fewer worries with finding the 'right business partner', whereas only the ones who have thought about entrepreneurship 'Rather Concretely' differ significantly from those self-employed. There is no difference between groups in their fear that they might lack 'know-how in taxation and law-issues'

While there was no difference between the groups at different levels of aspiring entrepreneurship in terms of 'lack of contact to clients', the ones at the threshold ('Bound and Determined' and 'Rather Concrete') differed significantly from self employed and those who had already begun to realize their business in their fear of 'economic cycles'.

Similarly, the self-employed did differ from those before the realisation stage ('Bound and Determined' and 'Rather Concrete') in their perception that the 'business environment / economic policy' might be a hurdle. They also differed in their 'fear of failure' and evaluated

it as significantly less. However, neither of these three groups differ from those who had already begun realising their business idea.

Lastly, but most importantly, there are substantial differences in the groups' perceptions of their 'entrepreneurial skills'. The self-employed do not differ from those who have already started realising their business ideas. They acknowledge any lack of skills as a 'rather small hurdle' (see Table 9 for these categories). They do, however, differ significantly from the ones who are just before the final commitment, as it were, i.e. the "Bound & Determined' group. All of the above groups differ significantly from those who have thought about entrepreneurship 'Rather Concretely'.

These results represent two rather congenial facts. Firstly, they give policy makers clear indications as to where perceived obstacles lie and how members of one group may be taught or equipped with pertinent knowledge and skills and convinced to move from one group to the next so that their entrepreneurial potential can come to fruition. Secondly, the transparency and common-sense fluidity of the results again demonstrate a) the validity of the measures (particularly the Commitment variable) and b) the results these variables portray, as these, too, can be clearly aligned with the groups.

As a result, the differences between those who really aim at entrepreneurship and those already on their way are that the former perceive a threshold which takes courage to cross. Lack of courage results from respondents doubts about their business idea, but also because some grapple with uncertainty regarding the impact of economic cycles. While there appears little difference between groups regarding their skills and knowledge of legal and tax matters, some 60% perceive this as a major hurdle of sorts. In other words, there is a substantial fear of lack of relevant knowledge in a number of areas and, it appears, a lack of skill in assessing the promise of business ideas.

Support desired by budding entrepreneurs

Type of support wanted	Quantity	Percentage
Business plan seminars	4,749	59.9%
Coaching for the starting up of an own business	4,886	61.6%
General seminars and lectures to the topic of starting up a business	4,248	53.6%
Business game – starting up a business	2,493	31.4%
Get-togethers and discussions with other young entrepreneurs (e.g. club)	2,591	32.7%
Symposia, start-up days, contact platforms	1,428	18.0%
Contact point for general questions to starting up a business	3,471	43.8%
Seed financing by the university / technical college	2,655	33.5%
Incubators (Service centre for early stage start-ups)	1,773	22.4%
No further offers	310	3.9%
Other 1:	253	3.2%
Other 2:	37	0.5%
Other 3:	14	0.%
Total	7,930	364.5%

Note: Responses to Other 1, 2 and 3 were varied. However, 62 of the 304 suggestions, about 20%, referred to some type of mentoring program.

Table 10 Which kind of support for starting up a business would you wish for from your university/ technical college?

Table 10 shows that more than 50% of *all* students in the sample would like to know more about how you actually start a business and which steps you need to take in order to become successful.

For the next analysis, those who never had actually thought about becoming entrepreneurs or thought about it only sketchily were excluded. An analyses of variance between all other groups (i.e. those concretely thinking about it to self employed, see Table 6.1 incl. footnote) further demonstrate that there are very distinct perceived needs as students approach the threshold to entrepreneurship.

Results consistently show significant differences ($p<.05$) between all groups in total and for dyadic combinations in the requests for 'business games for starting up your own business', 'symposia, start-up days, symposia, contact platforms', 'contact points for general questions', and 'incubators'. The fewest significant differences (albeit still at the 10% level) occur between those thinking 'Rather concretely' and 'Bound and Determined'.

Commitment to Entrepreneurship**	**Support for Start Ups as Sought by different Groups in %**			
N= 1906	Business games	Symposia	Contact Points	Incubators
Rather Concretely	38	19	45	25
Bound & Determined	40	18	43	25
Already Started	32	19	40	28
Self-Employed	23	29	58	38

Table 11 Types of Support Sought

These results give an interesting insight as to what the differing groups at different stages of getting their start-up to succeed appear to require. Obviously, concrete advice at 'Contact Points' is a highly sought after option by all groups and particularly by the self-employed already in business. The latter group thus indicates very particular needs for advice.

The next most sought after option by those serious enough to be entrepreneurs are 'Business Games'. These would often involve computer-based simulation software packages and tuition and are within reach of most universities. Next up are incubators which are also highly sought after by the self-employed. The least favoured by most groups, yet significantly different from the self-employed are symposia. It is interesting to note that this is strongly favoured by the self-employed when compared to the other groups. It echoes the high results in the Contact Point column and indicates a strong desire for personal exchange. This is further highlighted by an analysis of the 'other category' (see footnote in Table) in which 20% out of the 304 suggestions indicated a preference for mentoring systems at universities. There is thus a need for personal and individual interaction. Judged by the results from Table 10 this ranges from the insecurity to realistically and correctly assess the economic environment through to the individual issues involved with particular product ideas. The lack of courage expressed in many of the items above amongst dedicated but hesitant entrepreneurs may however not only be an issue of lack of technical and market skills but also one of personality.

Personality Traits and Other Personal Characteristics

The survey asked students to tell what they think of themselves and what they believe others think of them regarding their personality, ability to lead, delegate and communicate. The following tables distinguish groups according to their levels of commitment to becoming entrepreneurs (see Table 6.1).

According to Type of Employment Sought

The personality dimensions are based on an application of the Big Five (se e.g. John and Srivastava, 1999) using 25 items falling into 5 personality dimensions. These are called, Extroversion, Conscientiousness, Emotional Stability, Culture, and Compatibility.

Extroversion is indicated by such items as to how sociable, talkative and open students consider themselves. *Conscientiousness* is measured by questions relating to how thorough, exact, and orderly they feel they are. *Emotional Stability* relates to robustness, self-satisfaction and confidence, while *Culture* relates to how, for example, creative, artistic and imaginative students think they are. Lastly, *Compatibility* asks for levels of how good-natured, peaceful or unselfish students are.

Commitment to Entrepreneurship**	Personality Dimensions				
N= 7374	Extroversion*	Conscientious (not sig. diff.)	Emotional Stability*	Culture*	Compati-bility*
Never thought it	Lo	Lo	Lo	Lo	Hi
Thought Sketchily	Lo	Med	Med	Lo-med	Hi
Rather Concretely	Med	Med	Med	Lo-med	Lo-med
Bound & Determined	Hi	Med	Hi	Med-hi	Lo-med
Already Started	Hi	Med	Hi	Hi	Lo
Self-Employed	Lo	Hi	Med	Hi	Lo-med

* sig. p< .000; Monte Carlo sig. < .002

** This scale here is formed by replicating the categories of Table 6.1 but dropping category 4 (thought about it but turned away from it) and category 8 (yes, I was self-employed but turned away from it)

Table 12 Relative Personality Differences between Levels of Commitment to become an Entrepreneur

Table 8 shows the relative strength in the five character dimensions. Apart from the second dimension, Conscientiousness, in which there were no significant differences, all others were highly significant at least between Lo and Hi groups.

The results show that entrepreneurs see themselves as not very compatible with others since they count themselves as not very patient, more selfish than not, and more of a fighting spirit. It is also notable that those who are "Bound & Determined" to become Entrepreneurs and those who "Already Started to Realise their Business Plans" tend to be more extroverted, and also emotionally less sensitive and vulnerable. All in all, these budding entrepreneurs appear as more aggressive than all others.

Conclusions

This first analysis of students at two of New Zealand's universities and their aspirations, barriers and needs regarding entrepreneurship shows an encouraging if multifaceted result. There is a clear desire by some 50% of the sample to eventually end up as entrepreneurs and as being self-employed. Universities are challenged to provide more and more visible help particularly in evaluative skills ranging from market analysis and environmental scanning for start-ups, to better access to financial advice and resources for all those budding businesses.

The analysis of personality profiles shows that there is somewhat of a fighting-spirit amongst those on the threshold of becoming entrepreneurs maybe to spite their own insecurities about their capabilities. The strongly voiced desires particularly by those on the threshold for practical experience, coupled with the wisdom held by most to first seek employment elsewhere, allow universities a broad spectrum of assistance. This spectrum ranges from

practical and personal tuition to broad-based computer simulation games administered by teaching staff in commerce, events, and show-casing. While many universities appear to offer some or all these options, there is still much ignorance about their availability (8% of students said that these were not offered at their institutions). In any case, however, to provide adequate solutions certainly lies within the realm and expertise of universities. To become more targeted and to help students to succeed, distinguishing them regarding the stage of commitment to become an entrepreneur they are at may well improve both the success rate of those wishing to become self-employed, as well as improve the conversion rate and switch more of those who are just dreaming to those who are actually 'doing it' out there.

John, O.P. and s. Srivastava in L. Pervin and O.P. John (Eds.), Handbook of personality: Theory and research (2nd ed.). New York: Guilford