INFORMAL VENTURE CAPITAL INVESTMENT IN ATLANTIC CANADA: A REPRESENTATIVE VIEW OF 'ANGELS'

A Report Submitted to

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EXECUTIVE SUMMARY

This study of informal venture capital investors uses a completely different methodology than other studies in an attempt to get a more representative and generalizeable view of the population of informal investors in the Atlantic Region. Briefly, the methodology uses newly incorporated companies as the unit of analysis, a random sample, and provincial weightings to generate an estimate of the amount of angel activity taking place in the Region. This 'grass roots' approach is a more accurate indicator of the amount of angel activity.

Data were generated from 328 persons and companies about their personal investment habits and the contributions to firms by informal investors; 32.3 percent of the respondents were from Nova Scotia, 19.8 percent from New Brunswick, 25.3 percent from Prince Edward Island and 22.6 percent from Newfoundland. A total of 35 766 companies were incorporated in the four Atlantic Region provinces in the past five years.

Personal Reports of Investments

* Previous reports have identified a high incidence of entrepreneurship amongst informal investors. This research reports a high incidence of informal investing amongst entrepreneurs.

* 20.2 percent of respondents who are largely entrepreneurs in the Atlantic Region economy indicated they had invested their own money into a new or expanding business that was largely operated or managed by some person other than themselves.

* In this sample alone, a total of 66 people made 95 informal investments in the past five years for a sum total of $5 432 400; 56 percent took equity and another 28 percent took a combination of loan and equity.

* 34.9 percent of these personal reports of informal investments went to businesses that were started by a family member.

* 17.9 percent of the informal investors indicated they had sold an investment. Few respondents indicated the rate of return received on the sale of their investments.

* 36.8 percent of informal investors said that they lost the entire investment because the company went bankrupt or voluntarily closed the operation.

* 9.2 percent of the sample's informal investors are women.

Corporate Reports of Investments

* More than 75 percent of the respondents were the entrepreneurs for the company. Investors represented 9.6 percent of the respondents and lawyers represented 4 percent.

* Almost 20 percent of the companies incorporated within the past five years admit to not conducting business anymore (19.6 percent).

* Almost 15 percent (14.8 percent) of the companies had some form of informal investment. The number of informal investors ranged from one to seven with a mean of 2.09 informal investors per company which had informal investment capital.

* This sample alone had combined contributions of informal investment totalling more than $5 303 500. If we agree that 35 percent of these investments are made by a family member, true informal investment in these companies was likely in the range of $3 452 600.

* On average, informal investors are taking reasonably sized equity holdings in the companies in which they invest (29.73 percent). Very few take majority positions.

* Female respondents have a greater proportion of angel participation in their firms.

Regional Estimate

- *The estimate for Atlantic Region annual informal investment, calculated using the firm as the unit of analysis, is $85 million. This is supported by a secondary method which produced an estimate in the same magnitude and direction as expected.*

Look for the whole report at www.acoa.ca. Also look for the 2000 follow-up report at the same web site.

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INTRODUCTION

Informal venture capital investors have been classified as a subsector of venture capital. As early-stage investors, they have been thought to occupy a prominent position in the advancement of entrepreneurial ventures. As suppliers of seed, start-up and growth capital, informal investors promote the development of new ventures with equity and 'non-repayable' loans following exhaustion of the amount of internal capital the entrepreneur is prepared to contribute. The level of their activity in the Atlantic Region is a source of interest to a variety of sectors of government.

The often asked question by policy makers regarding informal investors is "How much of a role do informal investors really play in the start-up activities of new ventures?" The most often asked question by entrepreneurs is "How do I find an informal investor?" Both these questions are worthy of considerate time and expense to answer since they have significant financial implications for the economy in general and individuals in the Region in particular.

The expense of developing good research often precludes its conduct. Researchers, mindful of the need to write and publish, conduct their work with the limited resources available to them through shrinking university departmental budgets. The existence of an agency and resource such as ACOA, to sponsor high quality, labour intensive, research such as this study, is a credit to our Region. I would like to express my gratitude for their interest in the nature of informal venture capital investors and their insight in enabling this collaboration. I would also like to thank Saint Mary's University and my Department for providing relief from course work to allow such a collaboration to take place. My supervisors at the University of Nottingham, Mike Wright and Ken Robbie, as usual are of invaluable assistance, guidance and support.

This report begins by summarising the research on informal venture capital investors and its findings. The next section considers serious methodological concerns with current research and outlines the ways in which this study seeks to remedy these concerns. The results follow with discussion and the report finishes with considerations of recommendations.

REVIEW

Research has begun to focus on the angel investor and there have been many studies identifying their demographics, return rates and investment patterns. Many of these studies have been conducted in Britain and in the United States with some notable exceptions in Canada (Riding, Cin, Duxbury, Haines and Safrata, 1993), Finland (Lumme, Mason and Suoni, 1996) and Sweden (Lundström, 1993). Informal venture capital investors are generally male, middle-aged, of significant income generating households and have greater than average wealth holdings. They have a variety of motives for investing in entrepreneurial endeavours ranging from fun to looking for part time work. The many studies are not generalizeable and so the range of characteristics which describe angel investors is growing.

The following charts summarize the span of angel demographics, investment characteristics and return expectations that have been identified by other studies.

Figure 1 - Angel Demographics

Author & Area	***Wealth***	***Income***	***Education***	***Average Age***
Aram **Great Lakes, USA** **1989**	$1.5 million	$112,000 family	82% at least under-graduate degree	47.2
Harrison & Mason **UK** **1991**	£312,000	£46,000		53
Riding, Cin, Duxbury, Haines & Safrata **Canada** **1993**	$ Cdn 1,362,9000	$ Cdn 176,800	30 % - university degree 39% - post graduate	50
Lundström **Sweden** **1993**	57% > $909,000 (excluding principle residence)	60% > $91,000 27% > $182,000		73% between 45 - 64
Tymes & Krasner **California, USA** **1983**			MBA	42
Harr, Starr & MacMillan **East Coast, USA** **1988**	'few millionaires'	51% incomes between $100,000 - $249,000		60% are 41 - 60
Stevenson & Coveney **UK** **1994**	1/3 were millionaires 48% wealth their own business; 12% inherited		74% university educated	48
Lumme, Mason & Suomi **Finland** **1996**	wealth derived from entrepreneurial efforts; 16% was inherited		56%-Masters degree 8%-Ph D. 48%-backgrounds in technology 38% backgrounds in commerce	67% between 40 and 60

Source: Great Lakes, USA. Aram ,1989, Frontiers in Entrpreneurship
UK. Mason and Harrison, 1991, IJSB
Canada. Riding et al., 1994, Report to Industry Trade and Commerce
Sweden. Landstrom, 1993, Frontiers in Entrepreneurship Research
California, USA. Tymes and Krasner, 1983, Frontiers in Entrepreneurship Research
East Coast, USA. Harr, Starr and MacMillan, 1988, Journal of Business Venturing
UK. Stevenson and Coveney, 1994, UK Venture Capital Report
Finland. Lumme, Mason and Suomi, 1996, Frontiers in Entrepreneurship Research

Figure 2 - Angels' Investment Characteristics

Author & Area	*No. of Deals*	*Avg. $/Deal*	*Stage of Investee*	*Industry*
Aram **Great Lakes, USA** **1989**	.7/annum	$48,766	55% start-up 14% established	33% technology
Harrison & Mason **UK** **1991**	.67/annum	£10,000	30% start-up 34% young firms 18% established	retail/wholesale consumer services high tech manufacturing
Riding, Cin, Duxbury, Haines & Safrata **Canada** **1993**	4.78 per investor over five year period	$ Cdn 126,000 per investor over five years		manufacturing resource & service
Lundström **Sweden** **1993**	1/annum	51% < $US 91,000 28% >$US 182,000	7% pre start-up 20% start-up 30% established	insurance/finance low tech manufacturing
Tymes & Krasner **California, USA** **1983**	Expect to invest in 5 per year for next 2 years	Average $18,000 Median >$250,000	43% start-up 21% infant 22% young 14% established	high tech manufacturing and manufacturing
Harr, Starr & MacMillan **East Coast, USA** **1988**	2.5 investments per investor in three-year period	Median $50,000 - $99,999 category	58% start-ups 35% < 5 years old	28% high tech manufacturing 18% finance/ banking/insurance 12% construction/ real estate
Stevenson & Coveney **UK** **1994**	Average of 2.34 per investor over three-year period	Average amount invested by angels per investment is £120k over 3 yrs. Median is £40k.		
Lumme, Mason & Suomi **Finland** **1996**			23% seed 29% start-up 23% early stage	65% manufacturing 35% services 62% of manufacturing investments were in high technology sectors.

Source: Great Lakes, USA. Aram ,1989, Frontiers in Entrpreneurship
UK. Mason and Harrison, 1991, IJSB
Canada. Riding et al., 1994, Report to Industry Trade and Commerce
Sweden. Landstrom, 1993, Frontiers in Entrepreneurship Research
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Finland. Lumme, Mason and Suomi, 1996, Frontiers in Entrepreneurship Research

Figure 3 - Angel Investment Returns

Author & Area	*No. Respondents*	*Exit Expectations*	*Return Reported*	*Time Spent*
Aram Great Lakes, USA 1989	55		27% < $25,000 25% > $225,000	16 hrs/month on investment analysis
Harrison & Mason UK 1991	63	50% - 3 to 5 years 26% - 6 to 10 years	27% - above or well above expectations; 33% - equal to expectations; 38% - below or well below expectations	
Riding, Cin, Duxbury, Haines & Safrata Canada 1993	279	6.35 years	32% after tax (33% earned greater than 50% of income from informal investments)	
Lundström Sweden 1993	52	41% expect to liquidate in 3 -5 years	25% felt investments were performing moderately or well above expectations	12 hrs/month after investing
Tymes & Krasner California, USA 1983	41	50% 3 - 5 years 30% 5 - 7 years	Only expectations reported	
Harr, Starr & MacMillan East Coast, USA 1988	121	75% expect to liquidate in less than 5 years	Actual Returns: 38% made money 13% lost part of capital 8% lost all capital Expected Returns: 50% 1 - 4 times invest. 20% 10 times invested	
Stevenson & Coveney UK 1994	484			
Lumme, Mason & Suomi Finland 1996	20	52% anticipate holding their investments for 3-5 yrs. 12% of cases: the intention is to retain the investment indefinitely		

Source: Great Lakes, USA. Aram ,1989, Frontiers in Entrpreneurship
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The wide variety of results which appear in these studies suggests that we have far to go in our understanding of informal investors and/or the entrepreneurs in which they invest. Ages range from 42 to 64, incomes vary between £46 000 to $100 000 - $250 000, expectations of exit range from three to seven years, and very few report poor expectations on investments. The variability in the manner in which the data was collected also leaves much room for speculation about the methodological procedures used in angel research.

Methodological problems exist because there is no known population of informal investors so most of these works have been completed with convenience samples of investors. Convenience samples include the snowball technique (asking a potential respondent if they know any other respondents) and judgement or purposive samples (where the sample is selected based on some appropriate characteristic of the sample members) (Sudman, 1976). Most of the angel research to date has been conducted with the use of non-probability convenience samples including mailing lists of self-identified angels belonging to business angel networks (Stevenson and Coveney, 1994), mailing lists of persons with high discretionary incomes such as dentists, MBA graduates and subscribers to venture magazines in large urban areas (Harr, Starr and MacMillan, 1988), and snowballing from formal venture capitalists and some known angels (Riding et al., 1993).

With convenience samples, we are unable to generalise the results to the greater informal investment population in general. The only thing we can say of the results of these studies is that they are limited to the group of investors interviewed for the study. This is an extremely limiting position for researchers and policy makers who may wish to employ the results in program development. Therefore, attempts to quantify informal investors' participation in the activities of new and growing enterprises have been speculative at best. Translating speculations into economic policy is haphazard at best.

METHODOLOGICAL CONCERNS

The study of informal investors is inextricably entwined with the study of entrepreneurship because entrepreneurial ventures are the most likely candidates for informal investments, and because there is a high incidence of entrepreneurship amongst informal investors. Entrepreneurship is a young field of research (Romano and Ratnatunga, 1996) and attention has begun to focus on theoretical and empirical observations as well as methodological considerations regarding samples, questionnaires, methods, statistical analyses, and length of investigation. This section considers methodological concerns regarding entrepreneurship and its financiers. Some of the general problems are noted first and then we consider sampling and systematic errors. The next section identifies how we have attempted to solve these issues for the current study. The following discussion relates to methodological issues with regards to entrepreneurship and informal venture capital investment.

Fundamentals for a New Paradigm

1. Sample Size and Breadth

There is a call for more broad based work than has been undertaken to date because fundamental differences are being unearthed between the findings of small, specific and highly focused studies when compared to the large, broadly-based studies (Cooper and Dunkelberg, 1987) particularly in areas related to entrepreneurship. For example, when compared to more narrowly focused studies, a broad based sample of entrepreneurs turned out to have: fewer foreign-born entrepreneurs or entrepreneurs with foreign-born parents than the general population of foreign-borns; a generally smaller percentage of entrepreneurs who came from entrepreneurial parenting homes than was previously suggested; more education than we had believed (professionals aside) and certainly more than the average for the general population; and more adaptability in organisational settings than we had previously thought. The implications of these findings are equally important to the study of informal investors who are the financiers for entrepreneurs.

The call for broad based work is even more important if one wants to extrapolate their findings into 'general principals' for theory development or for areas that carry policy implications. "If the intent is to make generalisations applicable to the economy as a whole, then samples should be broadly based" (Cooper and Dunkelberg 1987, p. 21).

2. Field Work Versus Statistical Wizardry

Financial theory is highly developed. Sometimes, researchers of informal venture capital investors attempt to apply highly developed financial theories upon the newly developing area of informal investment. However, the informal investors may resemble entrepreneurs more than they resemble the 'corporate return-maximising' investor. The close relationship between 'investing in' angels and 'starting' entrepreneurs may make angels more 'entrepreneur-like' than 'return-maximising-like.' This is why field work is important and attempts to apply highly develop financial theory to informal investors may be ill advised.

Furthermore, some critics charge that current levels of statistical analysis are too sophisticated for the study of a new paradigm such as entrepreneurship (Bygrave, 1989). They suggest that it is futile for an infant paradigm to imitate the theoretical and empirical methods of an advanced paradigm' (p. 14). and imply that entrepreneurship researchers are being 'seduced' by the accuracy and precision of complex statistical tools. They say that entrepreneurship should be studied by intuitive, inspired, inductive logic. In the rush to be seen as credible by other disciplines, entrepreneurship researchers apply statistical wizardry to their data sets despite the lack of some basic elements such as random sampling. This problem is exacerbated by sample frames which narrowly focus on convenience samples of informal investors.

Observing and recording behaviours has had large impacts on our understanding of managerial work (Mintzberg, 1973) and may have similar results were it conducted similarly for entrepreneurs and informal investors. New paradigms require substantial field research before we can apply the classic dissertation format of developing hypotheses from propositions extended from theories based on field research. At this stage of our interest in entrepreneurs and their angels, the emphasis should be on empirical observation with exploratory or grounded research. The importance of field research and observation is necessary to get back to the understanding that there is much to be learned in the on-going events and processes of *ordinary* activity. "Too many young scientists have been inculcated with the belief that only 'startling' findings matter" (Bygrave, 1989, p. 21) thereby implying that the mundane daily tasks of field observation are not spectacular enough to warrant credibility in publication or tenure considerations.

Sampling Errors

1. Sampling an Invisible Population

The sampling method is essential to quantitative empiricism because of the types of sampling errors. While inadequacies in the measurement process, called measurement errors, can be limited through attention to particular details in the research process, sampling errors can only be reduced by attention to a randomly selected probability sample (Lewis-Beck, 1994). The central limit theorem and the law of large numbers permit sampling errors to be estimated only when the data have been collected by a random sampling procedure. Confidence intervals, on which we put much reliance, will only take on real meaning when the results are applied to properly sampled sets of data. While confidence intervals do not allow us to know whether the results are exactly correct, they do allow us to estimate the probability that the results will be inaccurate. We should endeavour to make confidence intervals as valid as possible by providing the underlying grounding necessary for validity. There have been no stated confidence intervals for any angel research because they have not been randomly sampled, until now.

Publication should include estimates of sample errors, but no statistical estimates of error can be computed when the sample is selected non-randomly. For certain, errors will exist. If we were to admit the existence of unspecified sample error in advance -- a kind of 'lowered head' in acknowledgement of a sample's faults -- we still cannot specify in which direction the errors lie (Lewis-Beck, 1994). When sampling errors are unspecified, our assumption is that the error likely lies equally distributed around the mean. In acknowledging that an error exists, the unspoken caveat is that the error probably lies equally distributed around the mean. There is, however, nothing to suggest that that may be the case. The errors may all be in one direction or, perhaps, in the other, or they may be about the mean, or they may not. Without a random sample there is simply no way to know in what way the error may be skewed.

Random sampling becomes a problem when there is no known population from which to sample. There is no known population for informal investors and Wetzel (1983) suggests it may be unknowable. *Formal* venture capital firms are regularly listed and identified in guides such as Pratts Guide to Venture Capital and industry associations such as the British Venture Capital Association and the Canadian Venture Capital Association. A library or a telephone book can assist in identifying formal venture capital firms easily. Entrepreneurs, however, report having a difficult time finding *informal* investors. Since angels are considered to desire invisibility (Wetzel, 1983), there are no directories, lists or public sources of information about them. This so-called invisibility has never been the subject of research. It has become a universally accepted, but untested, norm that angels wish to remain hidden so they will not be deluged with business proposals by willing or would-be entrepreneurs (Harr, Starr and MacMillan, 1988)[1]. Nevertheless, without lists, publications, associations or visible methods of finding them, developing samples from populations is problematic when the population is unknown.

2. Success Biases

When looking at sample biases from the standpoint of the firm, there is another sampling concern which is the tendency for methods of sample selection to bias samples towards *successful* entrepreneurs. This has resulted because of a difficulty finding samples for very young companies. Because it is hard to find reliable sources or lists of very young companies, a tendency to interview entrepreneurs who have been in business a number of years (Aldrich, 1990; Busentiz and Murphy, 1996) has resulted. When very young companies cannot be easily found, more established lists produce slightly older firms which, having survived longer, results in weeding out less successful firms with time. This too is a systematic bias.

[1] It is, as yet, an unsolved contradiction in the literature that angels want to protect their invisibility (Wetzel, 1983), but generally express a desire to see more proposals and be exposed to more opportunities.

PROPOSED METHODOLOGY

What was needed was a methodology that would accommodate for the four problems noted above: avoiding success biases, random sampling without a known population, a broad based approach and attention to fundamental detail. The answer was proposed at a conference in San Francisco at the 42nd World Conference of the International Council on Small Business (Farrell, 1997). This methodology proposed to find informal investors -- not by attempting to enumerate the individuals themselves -- but by finding them throughout the cadre of newly incorporated companies. By working with the population of newly incorporated companies, we would be able to identify the proportion of companies financed with informal investment money via the instrument, not the source.

In this methodology, companies are sampled from the known number and population of new corporations provided by the public registrations required. The individual companies are then asked about the capital provided for the firm at and since start-up and about their individual investment activities as well. This is a significant departure from normal sampling methodologies habitually used for studying informal investors. Some angel samples have investigated specialised industries and attempted to identify the informal investment capital therein. Where they specialise in an industry, we are not able to generalise their findings to the economy or entrepreneurial foundings generally.

This methodology solves a number of problems, particularly that of a known population from which to sample randomly. Other conditions were solved through the contributions of a variety of other factors. The assistance for the research permitted a broad based study of new incorporations from the four Atlantic Provinces as opposed to a more limited local or provincial treatment. ACOA's assistance also contributed to the adherence to fundamentals and detail. Phone surveys receive far better response rates, and hence less response error, than mail surveys. In addition, when respondents refuse to answer phone interviews, they often cite reasons that are passed along by the telephone surveyors. These comments, while not conclusive by nature, give us insight into the respondents' reasons and future ways to collect and treat information.

Using provincial, state or parish incorporation registrations serves as a source of new, young incorporated companies for sampling (Farrell, 1997). Because it is more recent than Statistics Canada reports, Dunn and Bradstreet listings, business directories or phone books, it is a better source for new company surveys. In fact, it turned out to be such a recent and good source of new companies, it was often difficult to find a telephone number for the companies. This recency would eliminate or reduce success bias.

Organization of the Report

The results are organized into five sections. 1) In the next section, we consider the respondents to the survey, the sample, and the representativeness of the non-respondents. 2) After that, the informal investment activities of individuals are summed and projected. 3) This is followed by modifications to investments based on interaction by family investments. Together, these two sections (2 and 3) give the propensity for individuals to invest minus any interference by family investment activities. Using the personal investment activities minus family interference is an estimation of the proportion of informal investing which is attributed to non-family enterprises. 4) This is followed by an examination of the amount of informal investment activity from the perspective of the firm. Here analysis is conducted by asking information about the firm specifically. 5) Applying this proportion to the number of companies which have informal investment capital in their structures gives us an estimate of the amount of true informal venture capital investment in Atlantic Canadian companies. Using the weightings developed earlier, we can estimate the amount of annual angel activity in the Atlantic Region. This is followed by recommendations.

Charts, tables and figures are used liberally throughout the document. Using charts and tables in the presentation provides more information to the reader which may not be commented upon in the text. The surrounding information provides context and enlarges the contributions made by readers, thereby promoting discussion.

SAMPLE RESULTS

Because of the importance of the process of random sampling in this research, we shall enumerate and enlarge this section. The list of companies incorporated between July 1, 1992 and June 30, 1997 was provided by both the provinces of Nova Scotia and New Brunswick. From these, a random list of numbers from 0 to 100 was used to select companies from the list. The province of Prince Edward Island provided a random sample of their database. In Newfoundland, the process was systematic random sampling. A researcher hand-selected every 50th file. There is no reason to believe that the number 50 would have any periodicity in these files. (Periodicity occurs when the list has a systematic pattern and the number selected biases the sample).

Distribution of Atlantic Region Incorporations

Reports from the Registries for the four provinces show a total of 35 766 companies registered as incorporated in the four provinces during the five year period from July 1, 1992 to June 30, 1997. These numbers are provided by the Registrars of the four provinces. The distribution of these incorporations is as follows:

Figure 4 - Atlantic Region Incorporations

Province	New Incorporations	Percent of Total
Nova Scotia	12 193	34%
New Brunswick	12 095	34%
Newfoundland	9 924	28%
Prince Edward Island	1 554	4%
Total	**35 766**	**100%**

Sample Respondents and Attrition

The original random sample identified 1408 companies and their directors/agents/lawyers, entrepreneurs or investors. A large number of the sample identified could not be located by phone. A figure showing the details of each sector of the sample follows this section as do the details of those not reached and the conceptual concerns about their whereabouts.

A total of 444 persons were actually reached by telephone. Of this group, 328 agreed to be interviewed and 116 declined giving us a response rate, based on companies reached, of 74 percent. These 328 represent 23.3 percent of the overall sample which included 490 phone numbers which could not be found. The key indicator of response rate in this sample is the number of successful interviews compared to the number of companies/persons who had an operating phone number. This proportion - 328 successful interviews out of 840 potential respondents who had working phone numbers - represents a response rate of 39.0 percent which is very good. With a given population of approximately 35 766, these results are sufficient to provide us with a confidence level of better than 95 percent.

These are important results, however, we must also conceptually consider the groups that were part of the sample, yet who did not form part of the response. A more detailed account of each of these groups follows:

Figure 5 - Distribution of Sample Attrition, Nonresponse and Successful Response

Total Sample Distribution	
Random Sample Size (random number list)	1408
1. Could not Find a Phone Number	490
2. Disconnected, Not in Service, Other	78
3. No Response	97
4. Calls Backs that Were Never Fulfilled (Not there, call again)	299
5. Reached and Would Not Agree to Be Interviewed	116
6. Reached and Agreed to be Interviewed	328

1. The phone numbers were sourced using the Canada 411 (http://canada411.sympatico.ca) directory available through the Internet. The phone number for each company was first sought via the business listings. Surprisingly few were found with a business listing. In a large number of cases (490) no phone number could be found for the companies or individuals, or the phone number found was the wrong one.
The Registries have the company and officers phone numbers, but only PEI and some of Newfoundland's records actually included this information in their reports for our use. New Brunswick and Nova Scotia would not provide that information.

2. Of the phone numbers identified, some were wrong, the phone had been disconnected, or we were unable to communicate with the person answering the phone.

3. Each person or company for whom a phone number was found was called at least three times varying the times of day and night (morning, afternoon, evening, Saturday) to optimize the likelihood of reaching someone at the other end. This method was an effort to reduce a systematic bias which may have arose from persons whose business may not have placed them at the phone during normal business hours. There were a large number of phone numbers that appeared to be working phone numbers, but no one ever answered the phone.

4. In many cases, we reached the potential respondent who asked us to call at a better time, who said they would call us back, or who indicated the respondent was not in. When we were able to reach these individuals, the calls were converted into #5 or #6.

5. This group was successfully reached by telephone, but would not agree to be interviewed. A large number of this group made reference to a bad partner, the company going out of business, or just not conducting business anymore. The surveyors were trained to encourage them that their information was still valuable, however a large number of non-respondents indicated some negativity about the enterprise/venture and refused to answer the survey.

6. This group was successfully reached by telephone and agreed to complete the interview.

Figure 6 - Survey Sample Attrition and Responses

Non-Respondents

There were several categories of attrition in the sample. For a large number of companies, no business phone number or personal phone number could be found. This is group #1 listed above. Under other circumstances, we might say that this would appear to be a clear indication that activities may have ceased or never begun operation. We cannot make that assumption with this sample, however, because so many of the numbers were sourced via personal phone listings which are more likely to have higher rates of unlisteds. We can only speculate on the whereabouts of these companies and individuals if no listings are available. There are three possibilities:

a) The company never started business in which case we would not want to include them in the survey.

b) The company has gone out of business and the individual has left the area or has an unlisted personal number (possibly because of financial difficulties associated with the bankruptcy or closing) in which case we would have wanted to talk to them.

c) The company *and* director do not want listed phone numbers. There may be companies which avoid paying the difference between a business listing and a personal listing, but one cannot expect that much business will be conducted with a company that chooses to have an unlisted number as well as its director. Personal phones are often unlisted, but one would not expect that anyone starting a successful business would keep an unlisted personal *and* business phone.

It is possible that Canada411 does not have up-to-date listings. A contribution to solving the mystery of the large number of unfound phone numbers would involve the telephone authorities of the four provinces. Those companies which were identified by the sample, but whose phone numbers could not be found, would be given to the phone authorities which have the best information on up-to-date phone listings. The telephone companies would have the final authority to identify whether there were phones for these companies or their directors.

It is also hard to rationalize group #4. These phone numbers were called repeatedly at different times of the day, night and weekends. The lack of any response is puzzling. This may partially reflect new telephones where the callers name and number is listed so strangers from unknown numbers are not answered.

Group #5, listed above, are those phone numbers which were found and for which we were able to make some kind of contact. This contact consisted of the person was not there, the person would call us, or we were asked to call them back. In either case, we knew we had made contact with the person identified. In some instances, when we followed up on these, we found the person was not identified with the company and there was likely another listing for a person with the same name or initials.

Respondent Distribution by Province

Of the 328 respondents, 32.3 percent of the respondents who agreed to be interviewed were from Nova Scotia, 19.8 percent were from New Brunswick, 25.3 percent were from Prince Edward Island and 22.6 percent were from Newfoundland. The following chart represents these percentages in absolute numbers.

Prince Edward Island represents a disproportionately large number of responses for three reasons. Firstly, there were concerns about the small size of PEI's contribution to the sample if the sample were constructed proportionately (only 4 percent of new incorporations). In other words, if we constructed the sample with only 4 percent contribution from PEI, we may have had a problem relying on provincial statistics for PEI later. Therefore, we allowed PEI's numbers to approximate those of the other provinces in the event that provincial estimates might be calculated. Regional estimates will have to be weighted according to the number of elements in each province in order to estimate total population means. Secondly, and probably more importantly, the registry information provided by the Department of Provincial Affairs and Attorney General of PEI included the phone numbers for the newly incorporated companies. Lastly, surveyors indicated Prince Edward Islanders appeared to be very receptive and willing to be interviewed.

The distribution of the respondents (those who were reached and agreed to be interviewed) follows.

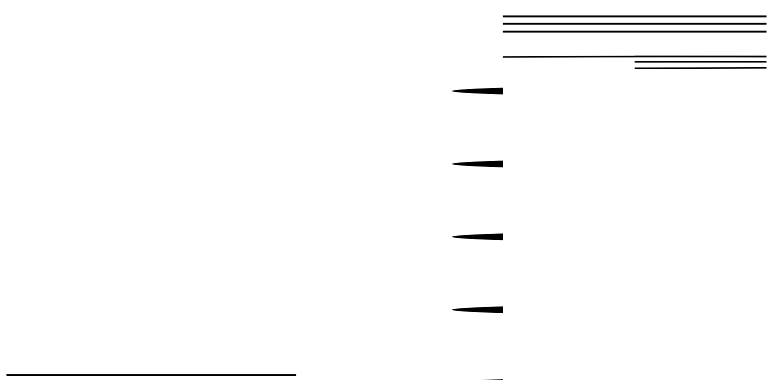
Figure 7 - Distribution of Respondents by Province

Province	Respondents (#)	Percent of Total (%)
Nova Scotia	106	32.3
New Brunswick	65	19.8
Newfoundland	74	22.6
Prince Edward Island	83	25.3
Total	**328**	**100%**

Gender

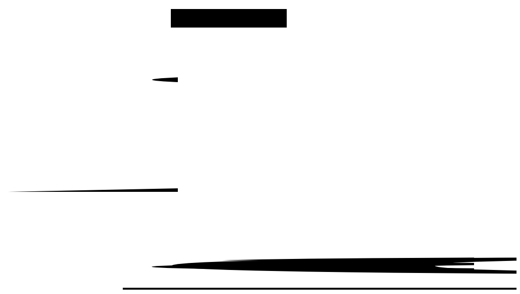
Women were represented by 19.6 of respondents. The counts for women in NS, NB and PEI are lower than would be expected and men are over represented in each of these provinces. Newfoundland shows a noticeable over-representation by women.

Figure 8 - Gender of Respondents by Province



The obviously large number of female respondents from Newfoundland is more than twice what would be expected.

Figure 9 - Gender Differences Explained by Province



A statistical test for independence between sex and province suggests it is highly unlikely that the sex of the respondents is independent of the province. While no causality is suggested here, there are clearly aspects of industry and incorporation at work for women in Newfoundland. In a chi-square test of independence the probability of achieving a test statistic of 23.44 is extremely improbable.

INVESTMENT ACTIVITY OF INDIVIDUALS

At this point, it seems wise to reiterate the important dual objective of the survey design. The survey was designed to capture information about informal investment in two ways -- from individual persons and about the company that was sampled from the Registries. Firstly, the survey captured information about the individual's activities by asking the agent or director for the firm about their personal investment activities before making reference to any company. Since we knew that entrepreneurs have a history of making informal investments in other people's firms, and we were going to be speaking to a lot of entrepreneurs, we would make this attempt first. It is also possible that the person responding to the survey could have been the lawyer or an investor since they are listed as agents and directors in the registries as well.

The second objective was to capture firm-specific information about the company specifically sampled from the Registries. In the second instance, the respondent was asked to tell us about the capital structure (as it related to informal investment) for the specific company noted. In other words, we would ask the respondent to tell us about their personal investment activities firstly, and then ask them to tell us about their involvement with company XYZ. Company XYZ was not mentioned until after the personal survey was achieved.

Personal Investment Activity

Of the 328 respondents, 20.2 percent indicated they had invested their own money into a new or expanding business that was largely operated or managed by some person other than themselves. This represents 66 people of the 327 responding to the question. This is a startlingly large number when one considers that one-fifth of the entrepreneurs, investors, lawyers, and directors of firms have an investment profile which includes informal investments[2] in other peoples' companies.

Figure 10 - Number of Respondents Who Reported Making Informal Investments

Number of Investments

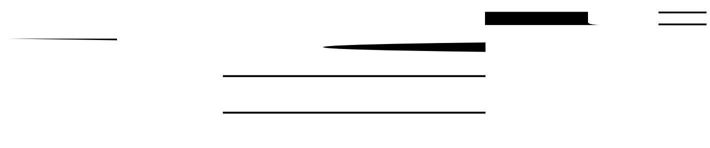
It is clear that there is an abundance of informal venture capital financial-type transactions taking place in Atlantic Canada. Sixty-four respondents (20.2 percent) divulged the number of informal investments they had made. Of this group, almost 61 percent had made one investment in the past five years. Just short of 30 percent had made two investments and a whopping 9.4 percent indicated they had made three investments. In fact, one respondent

[2] While this document makes reference to 'angels' and 'informal venture capital investment,' these terms were never used in discussions with respondents. Instead, different types of investments were described. This avoided problems whereby some people may not be familiar with the terms, or where there may have been a lack of uniformity in defining them.

indicated he had made more than he could count quickly and we included his count in the ‘three investments in the past 5 years category.

More than 95 investments were made by the 64 respondents to this question.

Figure 11 - Number of Investments Made by Individuals



<u>‘Withholding’ Caveat</u>

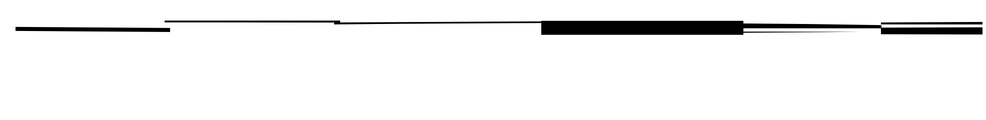
Some respondents identified themselves as angels, but were not prepared to answer specific questions about shares taken, dollars invested, or returns associated with sales. Despite this, we are encouraged because we were able to at least classify them as informal investors before the sensitive information came about in the interview. A large number of respondents agreed to be interviewed even though they did not divulge very specific and personal information.

In a postal survey for example, individuals who did not want to divulge certain limited pieces of information may have systematically selected themselves out of the survey believing that their participation was less valuable if they would not answer all the questions. In the telephone survey method, however, respondents do not know what questions are yet to come. The pattern of questions first identifies them as an informal investor; then, if they choose not to answer some of the more detailed questions, we have still captured the most important element. Furthermore, the surveyor encourages the individual to continue with the interview even if the respondent does not feel comfortable answering some of the questions.

Absolute Number of Dollars Invested

The absolute dollar amount of money invested into entrepreneurial and growth-oriented ventures during the period is at least $5 432 400. This represents a staggering sum from the rank and file of entrepreneurial oriented individuals in the Atlantic Region.

Figure 12 - Total Number of Dollars Invested in Informal Investments



Fifty-eight respondents gave us specific information about their first investment (out of a possible 66 persons who said they had invested at least once); 21 respondents gave us information about their second investment and five individuals gave us information about their third investment. Where respondents were sensitive about specific numbers we asked them to pick a range and then we used the average of the high and low for the range to determine the mean.

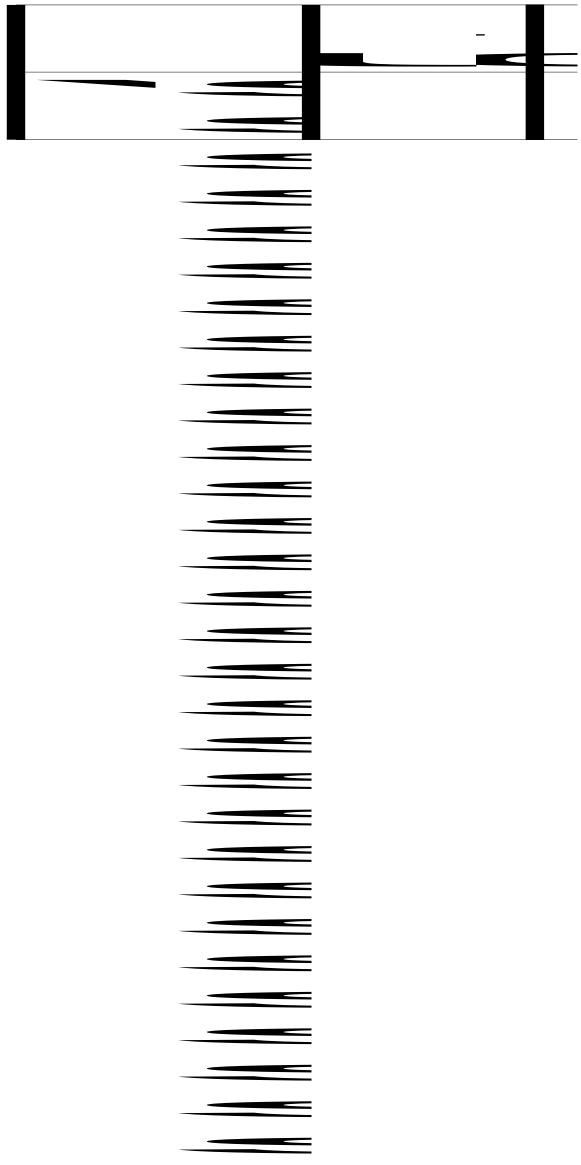
The reported investments for the five-year period totalled $5 432 400. Investment size ranged from $1000 to $500,000, an extremely wide variation. The sum of reported first-time investments totalled $4.332 million with a mean of $74 695. The total of second-time investments totalled $853 800 with a substantially reduced mean of $40 657. The five reported third-time investments totalled $246 300 dollars with a mean of $49 260.

If we were to use the means to extrapolate the sums for the missing respondent information for the eight unreported first-time investments, the four missing second-time investments, and the one missing third-time investment, our totals would increase by $597 560, $162 628, and $49 260 respectively. This estimate increases our total for the sample for the five-year period by $809 448 to $6 241 848.

First Investment Size

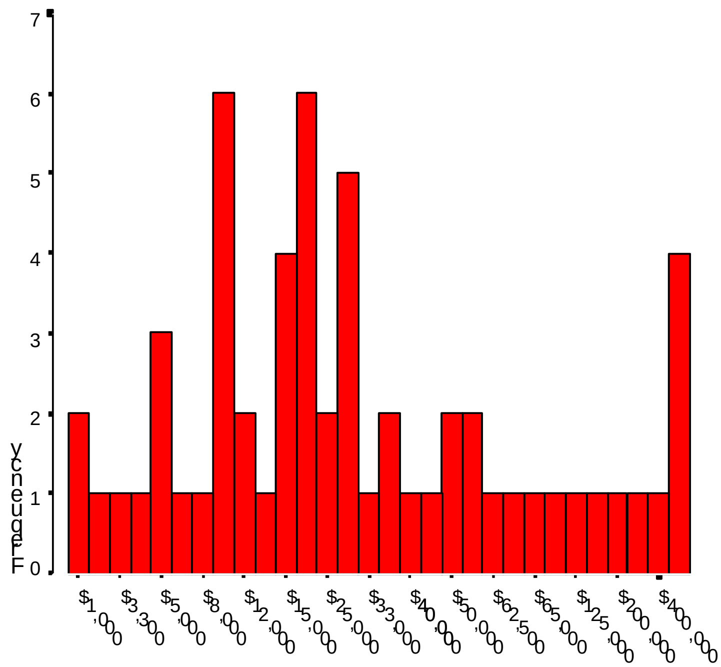
The average for first investments looks quite high at $74 695 which might lead one to believe that it is skewed by a couple of very large investments, but this is *not* the case. If we look at a distribution of the investment size, there is actually a significant percentage of very large investments; 19 percent of investments were equal to or greater than $100 000. The predominant range for first investment appears in the $10,000 to $30 000 range; 45 percent of the investments are in this range.

Figure 13 - Frequency Distribution of First Informal Investment



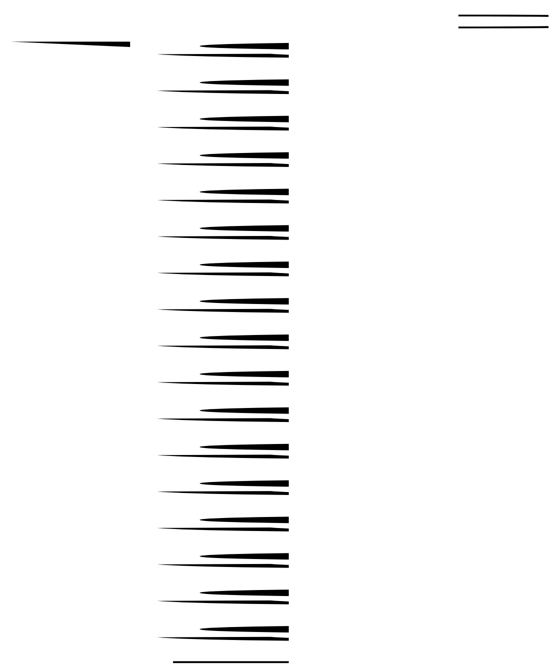
The following bar chart is more pictorial in demonstrating where the spikes in investment size are located.

Figure 14 - Illustration of Frequency of First Investments



The frequency distributions for second and third investments are predominantly weighted to the lower end of the investment scale. Fifty-two percent of second investments are equal to or below $25 000, another 23.8 percent are up to and including $50 000, 19 percent are up to $100 000 and only one investment at 4.8 percent exceeds that.

Figure 15 - Frequency Distribution of Second Informal Investment



All but one investment of the five reported 'third' investments were under $35,000.

Figure 16 - Frequency of Third Informal Investment

It is important to note at this stage, that these figures are not what 'so-called' angels *would* invest if they 'found a good project.' The sums represent the dollars which were *actually* invested by a sample of 328 people who were involved in new-company start-ups within the Region in very recent history. These investments are not in their own companies.

Terms of the Investment

The lion's share of the holdings in return for the investment were taken in the form of equity. At least 84 percent of the informal investors took some amount of equity; 56 percent took all equity and another 28 percent took a combination of loan and equity. The remaining 15.8 percent took loans. A number of angels were reluctant to tell us what terms they came to in their agreements with their entrepreneurs.

Figure 17 - Terms of the Investment

Investments Sold and Rate of Return Achieved

When enquired about selling informal investments, 17.9 percent of the informal investors indicated they had sold an investment. When questioned about the return on their investment sold, all but three refused to indicate what returns were achieved in any specific way. Those who did reply ranged from 20 percent to 50 percent returns. Some respondents said the return was 'pretty good.' There was no indication given as to whether they were calculated to annual rates or if they were overall returns over a period of years.

Figure 18 - Investments Sold

The curious aspect of the information on returns is the lack of any real detail in the respondents' ability to report information. There are three possibilities as to why this might be the case: either the return was very good and they did not want to say, or the return was very bad and they did not want to say, or they did not know. Regarding the first two possibilities, respondents' did not seem hesitant to tell us 'good' or 'bad' information in other categories (i.e. businesses that went bad, investments lost, companies no longer in business, etc.), nor did they mind telling us about large investments and other angels. In most other categories, respondents' indicated in detail about the parameters of their investments, timing, number and order. It would appear by deduction that informal investors may not know what or how returns are calculated for multi-period investments, or where the returns may have come in a series of payments, or in different forms.

Tried to Sell An Investment

In finding out that only 17.9 percent had sold investments, we attempted to find out if any of the remaining informal investors have ever *tried* to sell an investment. Only 4.5 percent reported ever trying to sell an informal investment.

Figure 19 - Informal Investors Who Have Never Sold an Investment But Who Have Tried

Bankruptcies and Voluntary Closures

A large number of informal investors report losing their investment through bankruptcy or voluntary closure of the business. Almost thirty-seven percent (36.8) said that the investment was lost because the company was no longer in operation. This is a large number of informal investments gone bad. This number reflects the 'gambling-like' nature informal investment has come to represent; there are some real winners and some real losers. The results here would indicate there many investments go bad which is consistent with evidence of new firm survival (APEC, 1998)[3]

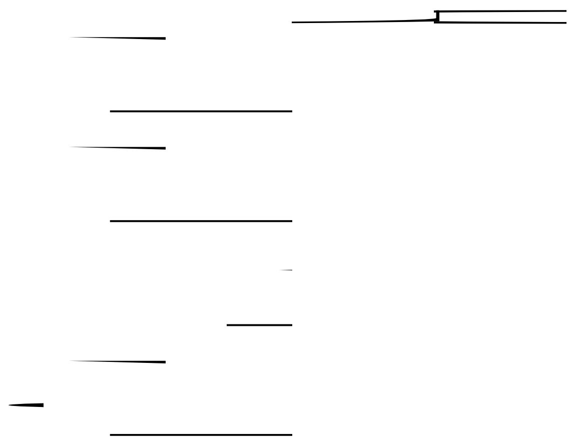
[3] APEC (1998) reports that through either 'bankruptcies, mergers, acquisitions or other forms of breakup, 52% of the region's firms in 1989 were no longer identified in 1995' (p.1).

Figure 20 - Informal Investments Where Whole Investment is Lost

Gender of Informal Investors

Nine (9.2) percent of the sample's informal investors are women. This is a very surprising result since most reports indicate that informal venture capital investment is almost exclusively the realm of men. While 9.2 percent is not a large percentage, it is a larger number than is normally represented in the convenience samples of informal investors where angels are hand-selected and interviewed about their investment habits. This study demonstrates that women are highly under-represented in the hand selection of participants for most non-randomly sampled angel research.

Figure 21 - Gender of Informal Investors



Habitual Investors

Habitual investors are those who have made more than one informal venture capital investment either concurrently (portfolio informal investor) or successively (serial investor). There is strong evidence to suggest that most informal investors will only ever make one informal investment; however, a substantial number went on to make more than one investment.

One would think that the lack of reported returns, and the high incidence of lost investments would negatively affect the number and incidence of second- and third-time investors. While the rate is significantly lower than the number of first-time investors, there are still a large number of second- and third-time investments taking place. A correlation analysis with a slightly larger sample of habitual investors could help uncover more specific information about these very important informal investors. It would be further interesting to know if their first and second investments were prior to or concurrent with subsequent investments, and whether or not returns had any affect on future decisions to invest.

INVESTMENT ACTIVITIES IN FAMILY-RELATED ENTERPRISES

Informal venture capital investment normally precludes investments which are made in enterprises which are owned and operated by family members. Therefore it is important to modify our estimate of informal activity in the Region by those investments which were involved in family businesses.

Investing in Businesses Started by Family Members

More than a third of the respondents (34.9 percent) who had made informal investments had made them in firms which were started by a family member.   We generally classify these investments as love money, the term given to investments made into companies which are started by family members. Love money is not generally included in the definition of informal venture capital investment so we are interested then to know that 34.9 percent of these investments are going to family sources.

Figure 22 - Investment was Placed With a Member of Your Family

When including first, second and third investments, 17 of our original 66 investors reported making an investment in a family members' company and four of them reported making a second investment in a family members' business. This represents a total of 25 investments of the original total of 95 investments (26.3 percent) were invested in a company started by a family member. No one reported that they had made three investments into companies started by family members.

Figure 23 - Frequency of Investments in Family Members' Businesses

The data is not structured to tell us which of the investments are made to family members and which are informal investments.

COMPANIES FINANCED WITH INFORMAL VENTURE CAPITAL INVESTMENT

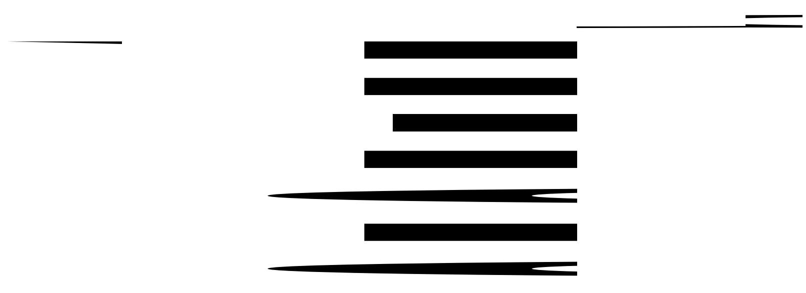
After responding to questions about their personal investment activities, respondents were referred to a specific company name. All further questions related to the activities of this company specifically. Particularly important, was their relationship to the company.

Respondents' Relationship to the Company

As each company was randomly selected, a contact person was then identified. The contact person was the first or second name in the company's list of directors. In so doing, we realized that we may be reaching a solicitor/agent/lawyer, an entrepreneur, or an investor. What, then, was their relationship to entrepreneurial venture sampled from the Registries' databases?

In each case, we asked respondents if they were the 'lawyer, entrepreneur or an investor' in the specific company. Repeatedly, respondents wanted to refer to themselves as 'owners,' or 'entrepreneur *and* investor.' These comments were collected and recorded in the data collection as well. It is clear that in category #4, many entrepreneurs cannot extricate their role as entrepreneurs from those as investors because they had put their own time, money and energy into the project. To differentiate entrepreneurs from informal investors, the lead idea person and manager for the firm was the entrepreneur. An investor invested money into a company that was 'largely operated by someone else.'

Figure 24 - Respondents' Description of Their Relationship to the Company



More than 75 percent of the respondents referred to themselves as the entrepreneurs in the company. Of that group, 20 percent refused to simply call themselves entrepreneurs and referred to themselves as investors as well. Investors represented 9.6 percent of the respondents. Lawyers represented 4 percent of the respondents.

There is a very small role, .9 percent, for lawyers as entrepreneurs and investors which is contrary to popular opinion about lawyers' involvement in informal investing. Their role is likely more advisory in their knowledge of new company start-ups and its resulting capital structure to the extent that it is reflected in the company's directors.

Still Conducting Business

Almost 20 percent of the companies incorporated within the past five years admit to not conducting business anymore (19.6 percent). This number may seem high, however, it would be consistent with other reports of failures in new business. Methodologically, at this point, we may want to consider the number of phone listings which were disconnected, or no longer in service and their importance and fate.

The 12 companies which did not respond to this question were either lawyers (who responded to the individual and personal first part of the survey, but would not respond to the company related information), or individuals who, after completing the individual and personal part of the survey, did not want to complete the remainder of the survey.

Figure 25 - Companies Reporting They are Still Conducting Business

Companies Financed by Angels

Respondents were asked about any informal investment within the specific company with which they were associated. Most of the respondents we spoke with were the entrepreneurs and investors so they would have intimate knowledge of the companies' initial capital structure and subsequent investments as well.

Almost 15 percent (14.8 percent) of the companies incorporated in the Atlantic Region between the period 1992 to 1997, had some form of informal investment -- capital which was contributed by someone *other than* the lead or initial entrepreneur. This rate is high and has very positive implications given the significant number of companies which are started each year. A number of people preferred to not answer this question. Others indicated some type of shareholding by employees or family and were therefore not included as informal venture capital investments.

Figure 26 - Companies Started with Informal Investor Financing

Forty-six respondents indicated that there were angel investments in their firms (14.8 percent). This 14.8 percent of companies which were started with outside contributions, (those who 'provided investment money and took shares in the company other than the lead entrepreneur') had an average of 2.09 investors in their firm. These companies had as many as seven other investors.

Figure 27 - Number of Informal Investors in Atlantic Region Companies

By far, the greatest number of companies (76.1 percent) had only one (45.7 percent) or two (30.4) informal investors. Interestingly, three and four investors were reasonably common representing 17.4 percent together.

There are a considerable number of informal investments taking place in the Atlantic Region's newly incorporated companies. Sadly, we do not have any comparison for our results since there are no other broad based, randomly sampled, regional works.

Figure 28 - Frequency of Respondents Reporting Number of Other Investors Involved in the Firm

Ranging from $500 to $1 000 000, reports of the contributions by informal investors to Atlantic Canadian companies in this sample alone totalled more than $5 303 500. Furthermore, this does not include all the investments made since some respondents preferred not to divulge this information. The categorisation of 1st, 2nd, etc. investors does not imply any relative ordering, but simply our coding of the number of investors per respondent. These reports could have been given in any order by the respondent. Once again, we see a large contribution to new enterprise from outside the immediate entrepreneurial team.

Figure 29 - Capital Injected by Informal Investors

Even fewer companies wanted to report on the share holdings of the informal investors noted. The weighted average of these 44 separate reportings is 29.7 percent. (Share 1, Share 2, etc. holds no relative relationship, but is only a categorical coding mechanism).

Figure 30 - Shares Taken by Informal Investors

On average, informal investors are taking reasonably sized equity holdings in the companies in which they invest (29.7 percent). Very few are taking majority positions. In cases where dollars invested and equity taken are both reported, only three respondents showed a majority position: one took 51 percent for $15 000; another took 60 percent for $60 000; and the third took 75 percent for $40 000. It would appear that these angels are not inclined to desire or exercise strict control over their investees. We can take into account that in the far majority of all the respondents reporting, we are talking to the entrepreneur who would have detailed and intimate knowledge about the share structure.

Incidence of Success in Businesses with Angels

The following sections consider some of the descriptive analyses possible when we split the sample by the presence or absence of angel investment in the firm. There were 18 cases missing in this analysis.

There seemed to be only a slightly higher incidence of companies still conducting business for the firms which had angel money (82.6 percent) versus those that did not have angel money (79.5 percent). ‘Yes’ and ‘no’ in the chart refer to the question ‘Is this company still conducting business?’

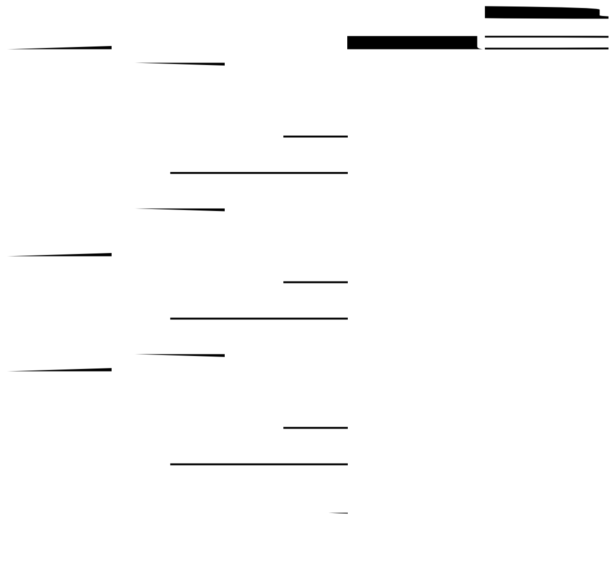
Figure 31 - Incidence of Business Failure by Presence of Angel Investment

These results have interesting implications for the 'signalling' effect entrepreneurial equity holdings are supposed to portend. The signalling effect of business expectations theorizes that entrepreneurs 'signal' their likelihood for success by refusing to give up larger portions of equity. While there are considerable other exogenous variables, in this instance, those who held all the equity did not fare any better than those who obviously gave up some portion of their companies.

Incidence of Gender in Firms with Angels

Female respondents have a greater proportion of angel participation in their firms. Female respondents with angel investment in their firm represented 26.7 percent of the 'angels in the firm' portion of the sample, while females only represented 18.6 percent of those reporting no angel investment in the firm.

Figure 32 - Incidence of Gender in Firms With and Without Angel Investment



We do not want to attribute too much to this finding since there are many variables involved, however, it is possible that angel money makes it possible for a greater proportion of women to start companies. It is also possible that, given the high incidence of investment in businesses started by family members, further analysis could produce findings demonstrating that much of the family money may be going to women.

CONSTRUCTING AN ESTIMATE OF ATLANTIC REGION INFORMAL INVESTMENT ACTIVITY

We have created an estimate of informal investment activity for the Atlantic Region from two different perspectives. Constructing an estimate using two different approaches, and then comparing them, provides a measure of validity; two different methods which produce similar results provides us with further confidence in the measures employed. The two different approaches to constructing an estimate are: building on the informal investment activity of individual persons, and building on the informal investments reported within existing companies.

Estimate # 1

1.) In the first instance, we calculate the amount of investment per province as per the sample and extrapolate that based on the weightings established from the number of companies formed in the province and the sample size for the province. (In and of itself, the fact that many of the non-respondents made negative references to the businesses current operating standing as a reason for not responding does not necessarily reflect on the companies' start-up or informal investment capital at start-up. In other words, because they are not in operation now, is no reason to suggest that they did not have angel investment at the time. We are assuming these companies had the same proportions of informal investment capital as the respondents.)

To accurately reflect the weighting for each province, we explode each provincial category by its respective weighting as dictated by the proportion of the number of companies in the sample to the number of companies incorporated in that province during the five-year period. We then multiply the investments made by individuals by the weighting factor.

Figure 33 - Provincial Breakdowns of Capital Invested by Individuals

2) In the figure below, we modify the amount of new venture investments by the proportion of investments (by subtracting family investments) which are devoted to investments in businesses started by family members ('Minus Family'). This produces an estimate of a five-year sum per province.

3) This five-year estimate is modified to give an annual estimate for the Region.

Figure 34 - Estimation of Regional Annual Informal Investments by Individuals

Province	Weighting	Inv'd/Sample	Weighted $ Invested	Minus Family	5-Year Sum	Annual Sum
NS	115	$ 1,470,400	$ 169,096,000	$ 110,081,496		
NB	186.1	$ 1,104,500	$ 205,547,450	$ 133,811,390		
PEI	18.7	$ 2,490,000	$ 46,563,000	$ 30,312,513		
NFLD	134.1	$ 367,500	$ 49,281,750	$ 32,082,419	$ 306,287,818	$ 61,257,564

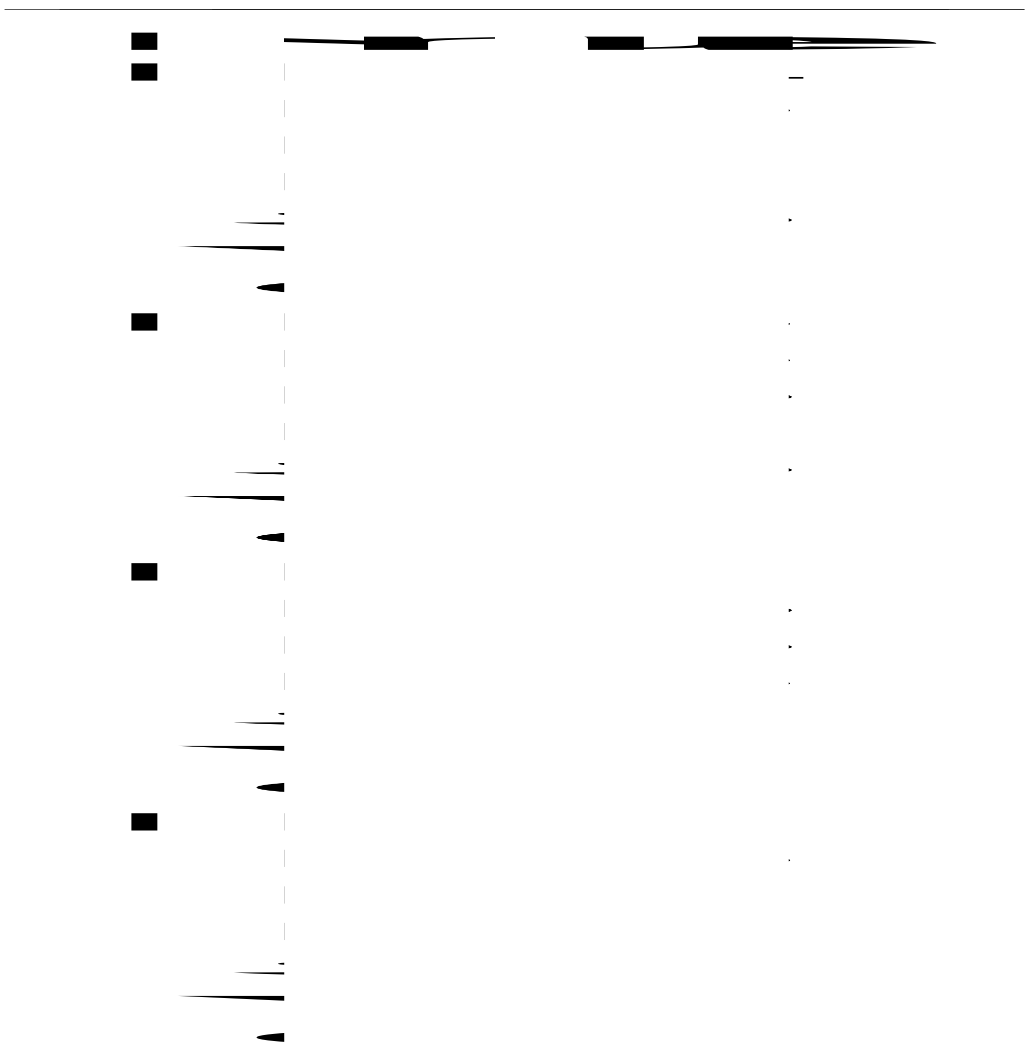
This table shows the sum of the investments made by individuals in the provincial sample multiplied by the weighting factor to bring it up to the size of the population of new companies in the Region for the period. After subtracting the proportion of dollars which are invested into businesses started by family members (34.9 percent), what is left is an estimate which represents the informal investment for the Region for a five-year period. *Based on personal investment activity of persons related to the business community the annual estimate for informal investment for the Region is more than $61.3 million.*

In this calculation, we are extrapolating the *individual's personal* investments based on weightings calculated by the proportion of *companies* in the sample and its respective province. These are the investments made by persons who are closely related to the new venture/small business/ entrepreneurial/ informal investor community. With the random sample from the population of new companies, we have adequately captured and represented all those who are inclined to invest from this community. There is a sector of informal investor who is beyond this community, however. These would be informal investors who are not a part of the new venture/small business/entrepreneurial community; these are the other investors such as laborours, professionals and others. Therefore, for this reason, and because there are more people associated with companies than there are companies, we would expect this estimate ($61.3 million) is lower than the real number.

Estimate # 2

1.) This method of calculating informal investment activity in the Atlantic Region uses the newly incorporated companies as the unit of analysis. The amount of informal investment capital contributed to the start-up or growth reported by the entrepreneurs and investors in the firms is totalled for each province. This investments are shown in the following figure. The sums are represented in Figure 36.

Figure 35 - Provincial Breakdown of Capital Invested by Company at Startup



2.) In the Figure 36, the informal investment capital contributed as reported is weighted by its proportion of the provincial sample to provide a calculation of the provincial estimate. The provincial figures are combined to give a regional total.

3.) If we take family involvement as given in individual investment at a rate of 34.9 percent, and reduce the regional total by that amount, and then divide the difference by the five-year period, we arrive at an annual estimate. *The annual estimate for Atlantic Region informal investment calculated using the firm as the unit of analysis is $85 million.*

Figure 36 - Estimation of Atlantic Regional Informal Investment by Company

	Weight	Inv't/Sample	$ Inv't by Provi	Regional Total	Minus Family	Annual Est
NS	115	$ 2,903,000	$ 333,845,000			
NB	186.1	$ 1,437,000	$ 267,425,700			
PEI	18.7	$ 990,000	$ 18,513,000			
NFLD	134.1	$ 248,500	$ 33,323,850	$ 653,107,550	$ 425,173,015	$85,034,603

Discussion

These estimates represent the culmination of a 'grass roots' approach to estimating informal venture capital activity. They are based on the results of a randomly sampled group of recently incorporated companies. The sample numbers are sufficient to produce a better than 95 percent confidence interval. The methods used to estimate and 'gross up' the sample results may be subject to far more error as they are methods which are subject to significantly more exogenous variables and influences. Nevertheless, this is the most comprehensive and conclusive method to date. This work could be improved by having a better understanding of the persons who refused to be interviewed as well as those who appeared to have working telephone numbers, but who we were unable to reach by phone.

The fact that the two numbers calculated by the two different methods are different is expected and supports the validity of this method. The total suggested by the first method ($61.3 million) should be lower than what is actually the case because we only interviewed one sector of the possible investing public -- the new venture business community. The second estimate, $85 million, is likely much closer to the true number. The $23.7 million difference between the two represents the amount of informal investment activity which is undertaken by individuals who are not related to or part of the business start-up/entrepreneurial/new venture community. This difference represents a 38.7 percent ($23.7 m/$61.3 m) increase over the first estimate which seems like a reasonable number for informal investment from persons beyond the immediate entrepreneurial community.

This method varies significantly from the favoured approach, until now, of using convenience and judgement samples. These are characterised by identifying a few select individuals who are known to have made informal investments and interviewing them about their activities. Convenience samples are also known as judgement samples not because the researcher uses judgement in selecting who will be interviewed, but because the results must be tempered with judgement after they are produced. Results from other studies are in no way representative and give us no information about the status of informal investment in the Region as a whole.

RECOMMENDATIONS

1. Refrain from perpetuating the mistaken identity of informal investors.

To date angel research has focused on wealthy, male individuals who are known to invest in the business enterprises of other individuals. We have come to call these informal venture capitalists 'angels.' Angel literature has described angels as limited in number and invisible in their activities. They invest in few proposals and are reported to like the 'fun' and sport of investing. We have come to typify them as elitist, rare, and hard to come by.

This research has shown that the incidence of angel investment is much wider than has otherwise been thought. Our methods of selecting angels have constrained our research. We now only look for people who are 'angel-like' and who fit the typology described above. Wealthy businessmen, who are known to have invested in a number of businesses locally, are approached to be interviewed about their investment prospects. This typology pervades the literature and is self perpetuating because of the methods which are used to select informal investors for research purposes. In effect, our thinking has led us down a very narrow, self perpetuating path. We have come to identity an entire group by what is really only a very small sub-sector of the group.

Thirteen percent of individuals (20.2 percent modified by 34.9 percent family investments) related to new venture start-ups have some sort of informal venture capital investment background. Ten percent of new businesses (14.8 percent modified by 34.9 percent family investment) have some sort of informal venture capital in their capital structure and the average number of informal investors in these companies is more than two. *It seems inappropriate and inaccurate to represent as elitist and rare, a commodity which is so widely represented in business start-ups.*

More attention needs to be focused on the 'grass roots' informal venture capital investor who is responsible for contributing significant sums into very risky ventures and who is doing so without much study, support or attention. In our quest for glamorous results we have directed our attention to only one 'layer' of the informal investing public. On these we have lavished our attention. While it is important that this group of informal venture capital investors receive study, it is important that we not mistakenly identify the group by one of its elements. Use of the popularised term 'angel' may promote this thinking.

2. Make available informative materials for informal investors

It is clear that there are a large number of informal investments taking place representing a significant sum of personal investment dollars. In a sample of 328 respondents, 95 informal investments were placed by the respondents over a five-year period. This activity, in terms of both the number of companies supported, the number of people involved, and the number of dollars placed, is largely unrecognised.

Investors in the sample did not identify the return received upon selling their shares. We speculated earlier on the reasons why respondents were not clear on, or were not prepared to talk about, the returns they received. Firstly, they may not wish to divulge the information to a stranger over the phone, but this is surprising in light of some of the other information that they were prepared to divulge. Another explanation for this may have been that they were unsure of a method of representing the return, either in percentages or multiples, whether it should be calculated for the entire period or adjusted for an annual return, or that they had never calculated the return. In addition, a large number of informal investors lose their investment when the investee closes or goes bankrupt.

Like other types of investing, informal venture capital investors can be supported with materials which can help them make good investment decisions. These are materials which support and facilitate the ease with which informal investors can speed the process of making an investment, and materials which highlight the common problems of informal investment. Material developed to support and facilitate informal venture capital investment would:

- inform them about perusing many opportunities,
- ensure they are properly protected in the shareholders agreement,
- provide prepared standardized clauses,
- identify ways they may be able to help the entrepreneur,
- identify key elements to consider when approached by the entrepreneur,
- consider how to prepare for exit in advance of the investment,
- and identify target and achieved rates of return and their calculation.

This information could be made available in printed form or via small seminars; it could be disseminated through lawyers or chartered accountant waiting rooms, financial institutions, or via mail or 1-800 numbers where requests could be made.

3. Centre for the study and research on informal investors

The amount of informal investment activity identified in these results suggests that these entrepreneurs and investors are very important to Atlantic Canadian entrepreneurship in general. The amount of money Atlantic Canadians are prepared to solicit and invest is impressive. The results presented here are a starting point to help identify the amount of activity. But one limited research study only scratches the surface in attempts to understand the informal investor activities, results and habits.

A greater understanding of the smaller investors who are prepared to invest heavily in helping the entrepreneurial 'ramp up' to success is in order. This is particularly relevant in an area where formal venture capital is scarce and companies need to develop management skills and experience to be able to move to higher levels of accomplishment to achieve formal venture capital levels. Evidence shows that informal and formal venture capital are feeding grounds for one another, and that both flourish where the other one exists (Fiet, 1993). Therefore, it is in our interest to encourage activity and research in this area, particularly as there is much interest and money invested in encouraging formal venture capital locally.

Long range objectives should include the establishment of a database of informal investors to use in further research. There are precious few longitudinal studies in entrepreneurship. By developing a database, researchers and policy makers can have a randomly sampled and growing group of identified informal investors who can act as data points for future studies. More research needs to take place to answer a number of very pertinent questions. What role can networks play in this area? How well are investors acquainted with entrepreneurs before investing. How did they meet their investor or entrepreneur? What returns are they making? To whom are they selling their investments? Are they using the tax incentives or do those matter?

The United Kingdom has a long-established database for companies and entrepreneurs who have been involved in management buy-outs and management buy-ins. Governments, private sources, financial institutions, researchers and others interested in entrepreneurial buy-outs and buy-ins are beneficiaries of the Centre for Management Buy-out's (CMBOR) on-going results and documentation. CMBOR's database is under the direction of Mike Wright, Brian Chiplin and Ken Robbie at the University of Nottingham[4]. CMBOR has been collecting information for more than a decade and the database has been heralded as the single largest and most successful database and source of longitudinal data on entrepreneurship and its financing in the world. As a centre devoted to entrepreneurial venturing, their work can serve as an excellent model for Atlantic Canada interested in pursuing the knowledge of their informal investors.

Personnel from relevant provincial and federal governments and agencies should visit the University of Nottingham's Centre for Management Buy-out Research as a model of a centre developed to promote understanding of entrepreneurship by developing knowledge about the structural details of their investment habits and activities. Entrepreneurship stands to benefit from our attention and support for informal investors. A better understanding and knowledge of our informal investors will improve our ability to serve them.

4. Eradicate possible age/success bias by interviewing candidates within months of incorporation.

There is the tendency for methods of sample selection to bias samples towards successful entrepreneurs which is a result of the tendency to interview entrepreneurs who have been in business for a number of years (Aldrich, 1990; Busentiz and Murphy, 1996). It can be difficult to find good sources for samples of very young companies (Busenitz and Murphy, 1996). More established lists produce slightly older firms which, having survived longer, result in weeding out less successful firms with time thereby producing a systematic bias. Registry of Joint Stock Company registrations have proved to be a reliable source for identifying all young, newly incorporated companies (Farrell, 1997).

Because firms exhibit different strengths at different periods of their organisational lives, it is important that we not systematically neglect firms with respect to age. Population ecology theory holds that different companies

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[4] Professor Wright and Dr. Chiplin are in the University of Nottingham's School of Management and Finance. Dr. Robbie is a research fellow with CMBOR. The Centre is sponsored by a number of financial institutions and venture capital companies.

are favoured at different organisational stages. With regards to population density, r-specialists are favoured in the early stages of population density by moving quickly and taking advantage of their first mover status to obtain resources. K-specialists are favoured at later stages of population density when efficiency is necessary as the population nears its carrying capacity (Aldrich, 1990). So, most foundings will be by r-specialists, but most researchers will focus on K- specialists because they are those that will have become large and successful after a period of time. More research effort should be spent on r-specialists while in the early stages of the life cycle as these are their formative years. Early founders are favoured in the early stages of population density while late forming firms are favoured at later (Aldrich, 1990).

There are indications that age and success biases are at work in the sample. We interviewed entrepreneurial firms at least one to two years -- and sometimes five -- following their incorporation. Many Atlantic Canadian respondents who indicated they did not want to complete the survey made comments about the business “going out of business,” “folding,” “loosing their shirt” and so on. While we fully expect many companies to go out of business, we would like to interview them about their capital structure before this happens; otherwise, we lose the information which could be provided by them forever. Sometimes, if we reach them too long after they have closed, they will not agree to be interviewed because we reached them *after* they have become disenchanted. We need to reach them about the status of informal investors in their company *before* they go out of business.

The short term objective of the next inquiry should systematically sample and interview new companies, and their entrepreneurs and investors within a time period that controls for age/success bias. Some nascent or embryonic entrepreneurs may have incorporated so an optimal time to interview informal investors and entrepreneurs is about six months following the company’s date of incorporation. In this way, they are less likely to be nascent entrepreneurs, but are more likely to have established their capital and formalised a capital structure.

The questionnaire and telephone survey methodology of this research have already been established as useful vehicles for this type of research project. The results new work will allow a comparison with older information to determine a number of important contributions: Is there a difference in response rates for companies which are interviewed closer to their incorporation dates than those who are older interviewees? What is the level of informal investment funding for the firms which occupy the younger group? Are the investment characteristics similar (sizes of investment, average investments, bankruptcies, etc.) between the two groups?

5. More co-operation between governments and researchers.

Governments should co-operate with researchers and provinces and federal governments could co-operate to gain more knowledge about the incentives which have been put in place to encourage the efforts of informal investors. Repeated attempts were made to gain access to information regarding the investment tax credits available in some provinces. Sadly, approval to review the files for research purposes was never obtained. As of October, 1997, 113 people took advantage of the Equity Tax Credit in Nova Scotia. The Equity Tax Credit is a government program of tax relief for people investing in qualified companies. The results shown here indicate that there are more investments that would have qualified than were applied for, or approved under, the Equity Tax Credit incentive. More co-operation between governments and researchers would help identify those who are taking advantage of such credits, the value they carry as an incentive, the proportion of the investing public taking advantage of them, and of better ways to inform prospective investees and investors.

6. Education for entrepreneurs on how to sell a business plan beyond the banks and government.

The apparent availability of informal investment capital is encouraging. Entrepreneurs with solid business prospects and good ideas should be able to find receptive and willing investors. The key will be instructing and encouraging entrepreneurs to be creative in their financing alternatives beyond internal sources of capital, banks, and government loans. With the distribution of angels being more pervasive than otherwise thought, entrepreneurs should be encouraged to maximize their potential for finding an angel by presenting their proposals to many business people.

Today, business plans are a standard part of the entrepreneurs’ vocabulary and arsenal of tools. Armed with this information and a business plan, entrepreneurs should be encouraged to ‘shop’ their ideas in the capital marketplace

-- except that the capital marketplace is broader and more diverse than initially thought. Information and education for entrepreneurs looking for angels could include:

- the characteristics informal investors use as criteria,
- how to find potential sources of informal investors,
- selling to potential angels, and that
- informal investors are more pervasive than otherwise thought.

7. Initiate longitudinal research investigations into informal venture capital investment.

The causal effects and outcomes of investment decisions can only be determined with longitudinal analysis. The passage of time permits the resolution of the capital decisions made by the entrepreneur, the businesses success or failure, and the investment decisions made by the investor. By following, over time, the investment habits of the investors, their re-investment propensity, and the effects of the capital on companies and entrepreneurs we would have a far better understanding of their investments, returns and holding periods. With regards to returns, the literature shows very little 'actual' information and a lot of 'expectation' information. The reluctance of respondents to clearly present the returns that they achieved would be improved if relationships were established to present information repeatedly.

Data loss is a difficulty with longitudinal research for entrepreneurial candidates who may be more inclined to being short-lived than other species. Samples must be sufficiently large to accommodate the data loss and still have a statistically viable sample as the years pass (Busenitz and Murphy, 1996). This is expensive research, however, the value of entrepreneurship to society should make it easier for researchers to raise the funds to do longitudinal research (Bygrave, 1990).

REFERENCES

Aldrich, H.E. (1990). Using an ecological perspective to study organizational founding rates. *Entrepreneurship: Theory and Practice,* Vol 14, No 3, pp 7 - 24.

Atlantic Provinces Economic Council (1998). *Report Card.* January. Halifax.

Busenitz, L. W. and Murphy, G.B. (1996). New evidence in the pursuit of locating new businesses. *Journal of Business Venturing 11*, 221 - 231.

Bygrave, W.D. (1989). The entrepreneurship paradigm (I): A philosophical look at its research methodologies. *Entrepreneurship: Theory and Practice.* Vol 14, No 1, pp 7 - 26.

Bygrave, W.D. (1989). The entrepreneurship paradigm (II): chaos and catastrophes among quantum jumps. *Entrepreneurship: Theory and Practice 14*(2) 7 - 30. Farrell, A.E. (1997). *More Rigour in Informal Investment Research: Towards Reaching a More Representative Angel.* Proceedings of the 42nd World Conference of the International Council of Small Business, San Francisco, USA.

Fiet, J.O. 1995. Risk avoidance strategies in venture capital markets. *Journal of Management Studies*, 32:4, pp 551 - 574.

Harr, N.E., Starr, J. and MacMillan, I.C. (1988). Informal risk capital investors: Investment patterns on the east coast of the U.S.A. *Journal of Business Venturing 3*, pp 11 - 29.

Harrison, R.T. & Mason, C.M. (1990). Informal Risk Capital in the United Kingdom. *Frontiers in Entrepreneurship Research.* Wellesley, Massachusetts: Babson College .

Landström, H. (1993). Informal risk capital in Sweden and some international comparisons. *Frontiers in Entrepreneurship Research.* Wellesley, Massachusetts: Babson College.

Lewis-Beck, M.S. (1994). *Research Practice.* Toppan Company of Sage Publications, Inc: London, UK. 406 pp.

Lumme, A., Mason, C. and Suomi, M. (1996). The returns from informal venture capital investments: some evidence from Finland. *Frontiers in Entrepreneurship Research.* Wellesley, Massachusetts: Babson College.

Mintzberg, H. 1973. *The Nature of Managerial Work.* New York: Harper and Row.

Riding, A., Dal Cin, P., Duxbury, L., Haines, G. and Safrata, R. (1993). *Informal Investors in Canada: The Identification of Salient Characteristics.* A Report submitted to the Federal Department of Industry, Science and Technology Canada and to the Ministry of Economic Development and Trade of the Province of Ontario: Canada.

Romano, C. and Ratnatunga, J. (1996). A citation analysis of the impact of journals on contemporary small enterprise research. *Entrepreneurship: Theory and Practice, 20*(3), 7 - 21.

Stevenson, H. and Coveney, P. (1994). *Survey of Business Angels.* Henley on Thames, UK: Venture Capital Report Ltd.

Sudman, S. (1976). *Applied Sampling*. New York: Academic Press.

Wetzel, W.E. (1981). Informal risk capital in New England. *Frontiers of Entrepreneurship Research.* Wellesley, Mass.: Babson College.

APPENDIX - TELEPHONE SURVEY