

Thesis  
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**VISION AND SUPPORT IN NEW VENTURE START-UPS:  
AN EXPLORATORY STUDY OF  
NEWFOUNDLAND FIRMS**

by

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## ABSTRACT

In seeking to account for variation in the performance of new and small firms entrepreneurship theory has experienced a shift away from approaches which attribute success to personal characteristics in favour of approaches emphasizing the social context of resource acquisition and mobilization. This study develops and tests a new theoretical model concerning relations between vision, support and new venture performance based on Sooklal's (1991) grounded theory of visionary leadership. In doing so, it addresses theoretical and methodological weaknesses associated with past efforts.

Four stages of data collection were required to execute the study. Phases One and Two were used to develop the instrumentation for measuring entrepreneurial vision. Phase Three was a small-scale pilot study. Phase Four, the main component of the study, was utilized to test the research hypotheses. This final phase entailed semi-structured interviews with a random sample of 50 Newfoundland firms incorporated in 1993.

Employing Wold's method of Partial Least Squares analysis, five of the nine hypotheses concerning relations amongst seven theoretical constructs were statistically significant. In general, there was strong support for the contribution of both vision and support in the theoretical model. Higher performance were found to be positively influenced by both vision reach (i.e. the "ambitiousness" of the vision) and the strength of received support. Increased support strength was associated with greater vision reach and greater diversity of value-based (i.e. without expectation of reciprocal benefit) and convenience-based (i.e. relationships based on economic exchange) supporters. Contrary to expectations, visions that focused on either internal or external dimensions were associated with greater insider and outsider supporter diversity. The relative importance of predictor constructs in the model was substantially different for urban versus rural firms. Overall, the model was found to possess useful predictive power.

The results of the study indicate that vision and supporter diversity play an important role in the strength of support received by start-up entrepreneurs and that both entrepreneurial vision and the strength of received support contribute to new venture performance. In developing the measurement model for the research, many of the indicators for the theoretical constructs were either adapted from other disciplines or newly developed in the absence of pre-existing measures of vision and to overcome weaknesses associated with past "network" studies of support. This measurement model was found to possess satisfactory validity and provides a substantial base upon which further advancements can be made. Practitioners stand to benefit from the predictive power of the model and the insights the model provides concerning performance-enhancing start-up activities beyond the business plan.

Dedicated to the memory of

Michael G. Scott

## ACKNOWLEDGEMENTS

In some respects the dissertation process is not unlike that of starting a new venture. Both entail considerable risk, personal sacrifice, and an extraordinary level of effort and commitment. Both offer, in exchange, the potential for individual growth and personal fulfillment. And both, while appearing on the surface to be individual achievements, usually owe a great deal to the contributions of others. This dissertation is no exception. On reflecting upon the long and difficult journey culminating in this thesis, there are a number of people to whom I would like to express my gratitude and appreciation for their help and support.

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# CHAPTER 1

## INTRODUCTION

### Chapter Outline

#### **1.1 Motivation for the Study**

#### **1.2 Predicting Small Firm Performance: A Poor Record to Date?**

**1.2.1** Analysis of the Lack of Progress in Predicting Small Firm Performance

**1.2.2** Other Reviews of the Small Business Performance Literature

**1.2.3** Guidelines for Future Research on Small Firm Performance

#### **1.3 Purpose of the Study**

#### **1.4 Overview of the Research**

**1.4.1** Research Strengths

#### **1.5 Dissertation Organization**

### **1.1 MOTIVATION FOR THE STUDY**

In her acceptance speech at the 1996 Canadian East Coast Music Awards, singer and songwriter Laura Smith reminded us once again that nobody makes it “this far” without a lot of help from a lot of people. If the number of declarations of gratitude and appreciation expressed at ceremonies for the handing out of Junos, Grammys, Oscars and other such awards is any indicator, it would appear that the entertainment industry is keenly aware of an important link between the realization of the dreams of individuals and the support of others. Interestingly, this insight comes from an industry associated with the idolization of “larger-than-life” heroes and heroines.

What is it, then, that accounts for superior performance in the case of entrepreneurs? The thesis of this study is that dreams (or more precisely, “vision”) and the support of others are yet again of key importance, although this perspective is only recently making inroads in both popular notions and the discipline of entrepreneurship. This

resistance is amply illustrated by the following commentary in INC. magazine concerning a survey of INC. 500 founders:

And instead of iconoclastic individualists, the cowboy capitalists of America's dreams, we found people enmeshed and embedded in industries, with rich networks of contacts and colleagues they could draw on to help them build a business. For most, the secret of successful entrepreneurship seemed to lie not just in individual inspiration but in knitting a dozen different interests into one cooperative endeavour...

For us — we'd better admit it — this discovery was a little unsettling. (Case, 1989, p. 51)

Historically, the study of entrepreneurship has been characterized by a strong emphasis on the entrepreneur as a rugged and heroic individual (Reich, 1987). Until recently the central theme in entrepreneurship research has been the founder/owner/manager of the small enterprise. According to Aldrich and Baker (1997), personality traits research at the Babson conference has ranged between 13 and 20 percent of the papers presented and 31 percent of entrepreneurship journal articles between 1991 and 1994 focused on this theme. Consequently, most theories and research associated with entrepreneurship have attributed the success of the enterprise, either explicitly or implicitly, to personal qualities of the entrepreneur. This "great man" approach to entrepreneurship has been described aptly by Collins, Moore and Unwalla (1964, p. 19):

In one heroic theme in American thought, the entrepreneur is a risk-taker — a man who braves uncertainty, strikes out on his own, and, through native wit, devotion to duty, and singleness of purpose, somehow creates business and industrial activity where none existed before. Viewed in this way, the entrepreneur is a folklore figure akin to Davy Crockett and other truly indigenous epic types... Like him or not, he is fascinating. His values and activities have become integral to the character of America and intimately related to its ideas of personal freedom, success, and — above all — individualism. He represents the rags to riches theme in its purest form. He rises on his own by solid achievement, not by social climbing. He gets there by what he knows, not who he knows. His resources are all inside, not outside.

Although past research on entrepreneurship focused somewhat stubbornly on the psychological traits of entrepreneurs, these trait approaches ultimately proved unfruitful (Gartner, 1988). Recently, beginning with Gartner (ibid.) the field has gradually shifted its

focus to the study of entrepreneurship as behaviour, opening up the field to the examination of the social dimensions of entrepreneurship. Social relations and support would seem to be fundamental to the task of entrepreneurship if one accepts the current notion of entrepreneurship as “the pursuit of an opportunity regardless of the resources controlled” (Timmons, Smollen and Dingee, 1990).

New streams of research have emerged as a result of this shift in approach. These include, in particular, the study of support for small businesses and the study of the personal networks of entrepreneurs.<sup>1</sup> As will be shown in Chapter 2, however, until now the concept of support in the small business and entrepreneurship literature has tended to be treated in a peripheral manner, reserved primarily for the role and importance of government agencies, professionals (lawyers, accountants, etc.) and venture capitalists. Network research, on the other hand, has tended to approach support in an indirect fashion by using networks as the unit of analysis and assuming that these networks are indicators of support.

As will be shown subsequently in Chapter 2, neither of these avenues of exploration has provided convincing results demonstrating the importance of support to performance. On the evidence of research to date, the results are at best inconclusive and at worst indicate that support is not important to performance. Yet what is missing from past research is a direct investigation of the support actually received and valued by entrepreneurs and the impact of that support on performance. Addressing this gap constitutes one of the two central issues in the current research.

The second issue addressed by the current study concerns the impetus for this support and its effect on performance. In the earlier example using the entertainment industry it was suggested that the realization of an individual’s dreams were often due, in no small part, to extraordinary contributions by others. This study adopts the position that

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<sup>1</sup> Both of these streams are examined in some depth in the Chapter 2 literature review.

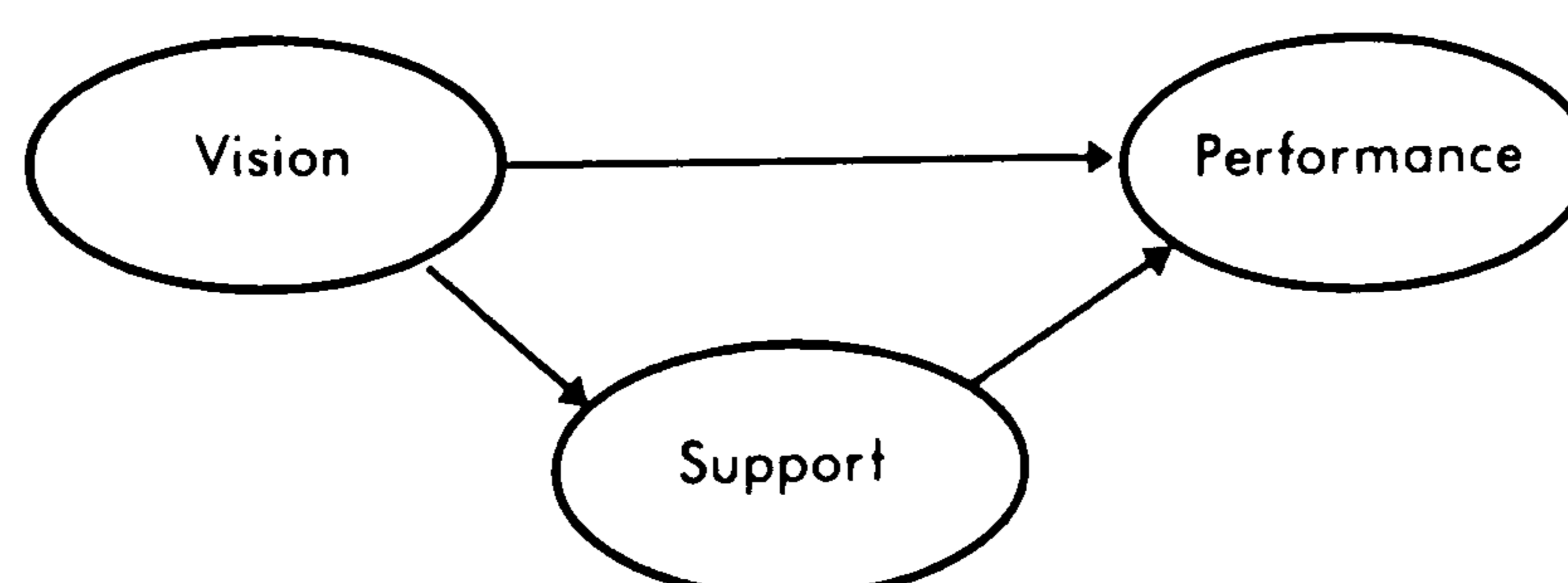


an individual's dream or, more properly, vision, constitutes a driving force that differentiates entrepreneurship from other kinds of activity.

Several authors have suggested the potential importance of vision to entrepreneurship and Chapter 2 of the dissertation argues why this should be the case, drawing heavily on the twin strands of leadership and strategic management research. Entrepreneurship often changes the environment in important ways, including the creation of new firms, new combinations of resources, new markets, and in some cases new industries. Consequently, entrepreneurs face a high degree of uncertainty. The usefulness of traditional goal-setting in such environments is questionable, as it may contribute to rigid policies when flexibility is what is needed most (Isenberg, 1987). Clearly, however, entrepreneurs require some direction in order to progress in a non-random fashion. This study proposes that it is the entrepreneur's vision that provides this direction and thereby both enhances the performance of the firm and provides a motivational force for others to contribute support.

In sum, this research seeks to account for differences in entrepreneurial performance by positing and subsequently testing the existence of positive relationships between vision and support, vision and performance, and support and performance. This generalized model is depicted in Figure 1.1 below. There exists no prior empirical work which has attempted to examine linkages between vision, support and performance.

Figure 1.1  
The General Model



## **1.2 PREDICTING SMALL FIRM PERFORMANCE: A POOR RECORD TO DATE?**

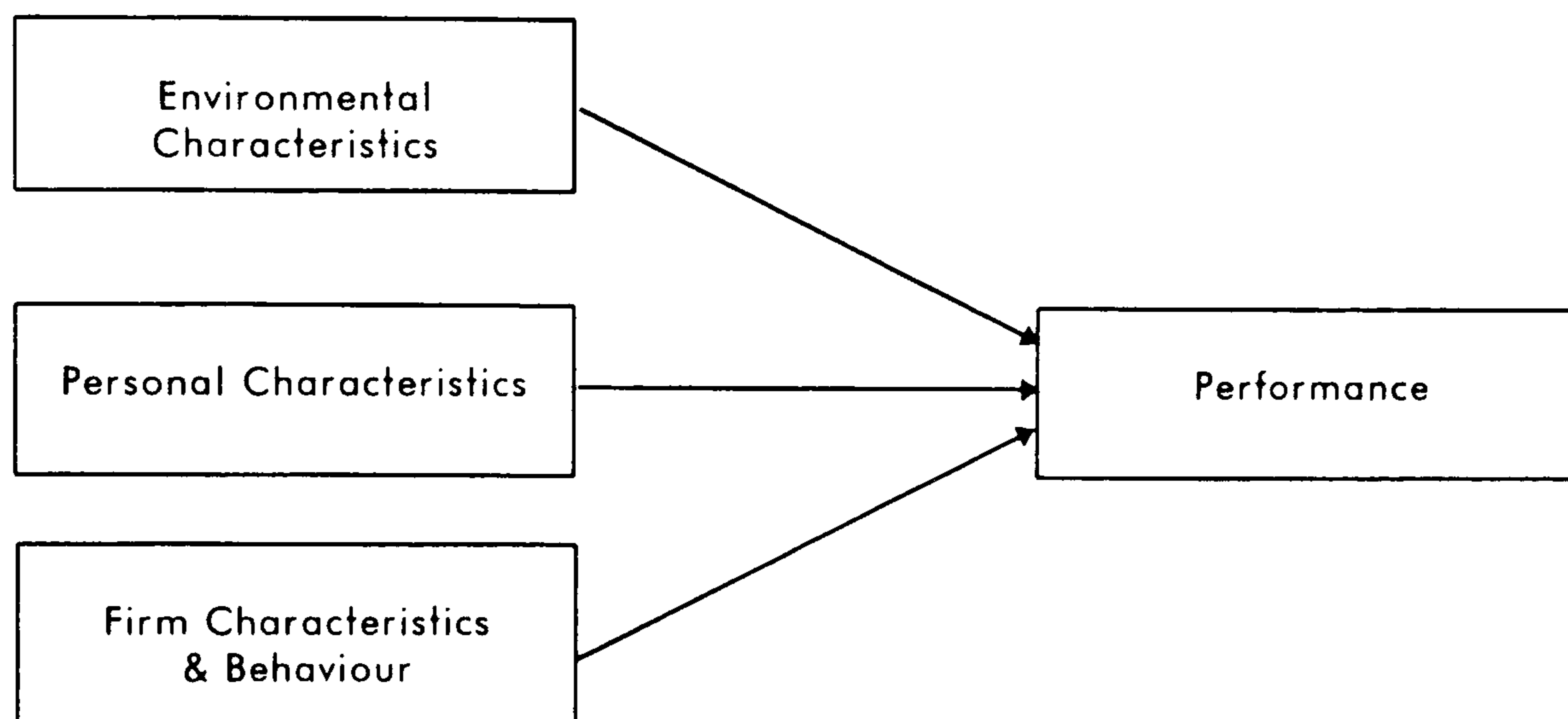
In seeking to explain variation in the performance of small firms, this study joins a sizeable body of research aimed at enhancing our ability to initiate and grow successful businesses. Its contribution and limitations, therefore, should be understood within the context of this prior research. This section provides a brief overview of the field's current state of development and, based on these findings, provides some guidelines for both this study and future research on small firm performance.

The importance of the small firm sector to job creation and economic performance has no doubt played an important role, not only in motivating research on entrepreneurship, but also in influencing the direction of its inquiry. Because the search for the determinants of small firm success and failure constitutes one of the most central questions in entrepreneurship research (Cooper and Gascón, 1992) a substantial number of empirical studies have been carried out in order to investigate the factors associated with small firm performance. These studies might be termed "success/failure" studies or studies of "success" factors, and are best viewed within the context of strategic management because they tend to view the firm as a whole, rather than from within a specific functionalistic perspective such as that of operations or marketing management. Appendices 1.1 and 1.2 present a summary of 51 empirical investigations concerning small firm performance. The studies reviewed were restricted to the domain of entrepreneurship and do not include performance-related investigations associated with other perspectives such as strategy or economics.

In excess of 200 different factors have been investigated as possible determinants of small firm performance (based on Appendices 1.1 and 1.2). The vast majority of this broad array of variables can be roughly grouped under three main categories: personal characteristics of the entrepreneur, firm characteristics and behaviour, and environmental characteristics (Hanlon and Barnes, 1992). Figure 1.2 illustrates this analytic framework.

A broad analysis of these studies is now undertaken to show how the results have provided little indication of the factors underlying entrepreneurial success.

Figure 1.2  
Analytic Framework for Success Factors



Tables 1.1 through 1.7 highlight some of the independent variables occurring more frequently in the studies depicted in Appendix 1.1. Table 1.1 summarizes the three studies which examined the impact of need for achievement on firm performance. Of the three studies, one found a positive relationship, one found no significant relationship, and one obtained conflicting results, depending on the performance measure adopted. To further complicate matters, the two studies which produced opposing results both utilized the same performance measure (firm survival) as the dependent variable. Taken together, the results suggest it is not yet clear whether a relationship between need for achievement and performance exists.

Table 1.2 shows that the impact of prior managerial experience on firm performance has been investigated more intensively. Seven studies in Appendix 1.1 dealt with this issue. Again the results are strikingly indecisive. Three studies found a positive relationship, two failed to detect a relationship, and two studies produced conflicting results depending on the performance measure employed as the dependent variable.

Tables 1.3-1.7 reveal similar inconclusiveness concerning the effects of other potential dependent variables.

Table 1.1<sup>2</sup>  
The Impact of Need for Achievement on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS	RESPONSE RATE	SAMPLE SIZE
Begley & Boyd (1987)	+ 0	var	liquidity roa	multiple	cs	33	239
Smallbone (1990)	+	21 mo	survival	multiple	ls	-	33
Lorrain & Dussault (1988)	0	3 mo	survival	mfg	ls	-	70

Table 1.2  
The Impact of Managerial Experience on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS	RESPONSE RATE	SAMPLE SIZE
Chandler & Jansen (1992)	+ 0	2-25 yr	profitability growth	several	cs	34	134
Duchesneau & Gartner (1988)	+	max 7 yrs	discontinuance & ronw	oj distrib	cs	-	26
Egge (1987)	+	18 mo	shortfall in expectns	multiple	cs	33	143
Stuart & Abetti (1988)	+	var	quant & subject composite	technical	cs	45	150
Dunkelberg et al. (1987)	- 0	12 mo	performance satisfaction	multiple	ls	40	1178
Cooper et al. (1988)	0	11 mo	survival	multiple	ls	23	2994
Sandberg & Hofer (1987)	0	nr	survival & roi	multiple	cs	-	17

<sup>2</sup> \* + ⇒ positive relationship  
- ⇒ negative relationship  
0 ⇒ not significant

cs = cross-sectional  
ls = longitudinal

Table 1.3  
The Impact of Education Level on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS LS
Cooper et al. (1988)	+	11 mo	survival	multi	ls
Davidsson (1991)	+	nr	growth: sales & employees	several	cs
Duchesneau & Gartner (1988)	+	max 7 yr	discontinuance & ronw	oj distrs	cs
Hay & Ross (1989)	+	min 3 yr	utd on ltd; roa, roe	multi	ls
Ibrahim & Ellis (1987)	+	var	roi	multi	cs
Stuart & Abetti (1988)	-	var	quant & sub composite	tech	cs
Dunkelberg et al. (1987)	0	12 mo	1. growth: employee & sales 2. subj	multi	ls
Lorrain & Dussault (1988)	0	5 mo	survival	mfg	ls
O'Farrell (1990)	0	16 yr	productivity & ros	mfg	cs
Sandberg & Hofer (1987)	0	nr	survival & roi	multi	cs

Table 1.4  
The Impact of Age of Entrepreneur on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS
Cooper et al. (1988)	+	11 mo	survival	multi	ls
Cragg & King (1988)	+	15 yr	growth: sales/profit; ros	metal mfg	cs
Davidsson (1991)	-	nr	growth: sales/employees	several	cs
Lorrain & Dussault (1988)	0	5 mo	survival	mfg	ls
Reynolds & Miller (1989)	0	5-10 yr	survival	multi	ls
Sandberg & Hofer (1987)	0	nr	survival, roi	multi	cs
Stuart & Abetti (1988)	0	varied	quant & subj composite	tech	cs

Table 1.5  
The Impact of Prior Start-up Experience on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS
Doutriaux & Simyar (1987)	+	10.8 yr	sales	hi-tech	cs
Duchesneau & Gartner (1988)	+	max 7 yr	discontinuance & ronw	oj distr	cs
Stuart & Abetti (1988)	+	varied	quant & subj composite	tech	cs
Chambers et al. (1988)	0	max 5 yr	subj	multi	cs
Reynolds & Miller (1989)	0	5-10 yr	survival	multi	ls
Sandberg & Hofer (1987)	0	nr	survival, roi	multi	cs

Table 1.6  
The Impact of Firm Size on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS
Cooper et al. (1988)	+	11 mo	survival	multi	ls
Davidsson (1991)	-	nr	growth; sales, employees	several	cs
Egge (1987)	-	18 mo	shortfalls in expectations	multi	cs
Hay & Ross (1989)	0	min 3 yr	utd on ltd, roa, roe	multi	ls

Table 1.7  
The Impact of Firm Age on Performance

STUDY	FINDING	AGE	PERFORMANCE MEASURE	INDUSTRY	CS/LS
Cragg & King (1988)	+	15 yr	growth in sales, profit, ros	metal mfg	cs
Lorrain & Dussault (1988)	+	5 mo	2yr survival	mfg	ls
McCann (1991)	+	8 yr	growth: sales	hi-tech	cs
Reynolds (1987)	0 +	4 yr	social contribution survival	multi	ls
Hand et al. (1987)	-	nr	sales (var: # of yrs as dealer)	gas service stations	cs
Duchesneau & Gartner (1988)	0	max 7 yr	discontinuance & ronw	oj distr	cs

Despite its brevity, the review of Tables 1.1-1.7 demonstrates how the results of prior investigations of small business success factors are mixed at best, even in the case of the more intensively studied variables.

### **1.2.1 Analysis of the Lack of Progress in Predicting Small Firm Performance**

In sum, the research to date has made little progress in identifying individual variables that can be associated with small firm success. Several problems contributing to this lack of progress can now be diagnosed.

One problem concerning the empirical knowledge accumulated to date is that the majority of independent variables identified in Appendix 1.1 have not been subject to

repeated investigation. Appendix 1.2 identifies a total of 206 predictor variables utilized in the studies under review. Of these 206 independent variables, 140 were investigated on only one occasion. This is partly attributable to the young age of the entrepreneurship discipline; the large number of independent variables identified will require many more studies to investigate their possible range of effects in a systematic and exhaustive fashion.

Additional reasons for the observed diversity of results, however, can be gleaned from a closer examination of Appendix 1.1 and the studies highlighted in Tables 1.1-1.7.

A second explanation for the lack of consistency stems from the diverse array of dependent variables utilized to measure firm performance. The 51 studies listed in Appendix 1.1 employ no fewer than 35 different measures of performance.<sup>3</sup> Tables 1.1-1.7 suggest that whether or not an independent variable is found to be significant may depend on the performance measure adopted. In Table 1.2, for example, study #12 (Chandler and Jansen, 1992) found a positive association between prior managerial experience and profitability, but failed to detect a significant relationship between prior managerial experience and firm growth.

The sensitivity of empirical relationships to differing methods of operationalizing performance can be considered an even greater concern when attempting to compare results across studies. This is because the degree of control over extraneous factors is likely to be greater within one study employing different performance measures than across different studies. For example, Table 1.6 identifies those studies investigating the relationship between firm size and firm performance. Whereas study #13 (Cooper et al., 1988) report a positive relationship when performance is measured by firm survival, study #17 (Davidsson, 1991) did not detect a relationship when measuring performance as growth in sales or growth in number of employees. Such differences can be difficult to interpret for reasons already discussed.

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<sup>3</sup> A more thorough analysis can be found in Chapter 4: Methodology.

Third, sample characteristics may be contributing to disparate results amongst the studies reviewed. Table 1.5, for example, illustrates that prior start-up experience was found have a positive association with performance in three industry-specific studies (high-tech, technical, and orange juice distributors), but was found to be not significant in three studies which sampled a diverse range of industries. Since it is likely that certain variables will behave differently in different industries (technical knowledge, for instance, may be more important in high-tech and knowledge-intensive industries as opposed to the fast food or retail industry), the industry characteristics of the sample may have a marked effect on the final outcome of a study. Firm age is another sample characteristic having the potential to confound outcomes. Considerable variation is evident in the studies reviewed, with firm ages ranging from less than one year to 25 years. This presents difficulties, as some variables should be expected to vary in importance depending on the stage of firm development. Prior start-up experience, for example, would be expected to have a greater impact on performance during the firm's start-up and survival phases and to diminish in importance in the firm's later stages of development, when managerial experience would likely be more valuable. Given the extensive discussion of stage of life cycle in the literature, it is surprising that in some of the studies reviewed the age of the firms in the sample was not even reported.

Weaknesses in study design may also contribute to the production of unreliable results. One example of this is the study design of Doutriaux and Simyar (Table 1.5, Study #19, 1987), where the impact of prior start-up experience was tested using a sample where the average firm age was 10.8 years. While prior start-up experience should be expected to enhance performance in the early stages of the firm, there is little theory available to explain why this would continue to be of benefit upon maturity, when prior managerial experience would likely be more useful. In this instance there is an apparent mismatch between the independent variable and the sampling frame.



A fifth factor inhibiting empirical progress is the paucity of theory underlying the selection of variables. Although rigorous confirmation requires direct examination of the papers reviewed, the existence of the problem can be inferred from the plethora of independent variables chosen for study. This applies both across studies and within certain studies. While the deficiency of theory is primarily attributable to the youth of the discipline, it also indicates that researchers have been negligent in their efforts to draw on existing theory from other disciplines in order to make substantive progress.

A “shotgun” approach to the identification of significant variables, reflecting the absence of theoretical underpinnings, also poses analytical concerns. When large numbers of variables are tested for significance, some may achieve statistical significance merely due to random chance. This phenomenon has been assigned various names in the literature (Campbell, 1975), including the “error rate experiment-wise” (Ryan, 1960), “the problem of multiple comparisons” (Scheffé, 1953) and “data dredging” (Selvin and Stuart, 1966). This statistical artifact has not adequately been addressed in many of the studies reviewed and has the potential to produce misleading results.

To summarize, the lack of empirical progress has been attributed to five main factors:

- 1) the young age of the entrepreneurship discipline
- 2) a lack of standard measures of small firm performance
- 3) diverse sample characteristics (industry and firm age) which may not be comparable across studies
- 4) weaknesses in study design
- 5) a shortage of theory behind the selection of variables

These kinds of problems are not unique to the entrepreneurship literature; they are, rather, characteristic of a young discipline. Researchers should not, however, view these problems as excuses for weak study designs, as progress in the field will continue to be stymied until these obstacles are overcome.

### **1.2.2 Other Reviews of the Small Business Performance Literature**

Only two other comprehensive reviews of the small business performance literature were located during the literature search. Wingham and Kelmar (1992)'s review of 36 articles concerned with small enterprise performance uncovered 154 predictor variables: 71 firm characteristics, 36 firm competencies and 47 growth strategies. While less than the 206 variables found above, this can be attributed to the smaller set of studies sampled, since Wingham and Kelmar's finding represents an average of 4.28 variables per study — a figure comparable to the 4.04 variables per study found in the above review. Two substantial differences are worthy of note, however. First, Wingham and Kelmar's review included position papers in addition to empirical articles. Second, they utilized only the most powerful variable identified in each paper for their discussion of trends amongst the studies. A weakness of this approach is that it failed to reveal the conflicting and divergent results apparent above.

A similar review by Cooper and Gascón (1992) of 61 empirical articles reached much the same conclusions as the current review. In their words, "At this stage in the development of the field, it is clear that there are few unambiguous findings which could give guidance to entrepreneurs and their advisors." (p. 316). Their framework for categorizing independent variables included characteristics of the entrepreneur, founding processes, and industry and environmental characteristics. The problems identified by Cooper and Gascón bear a striking similarity to those highlighted by this study: a) the lack of well-developed theories of causal relationships; b) variations in samples; c) the variety of performance measures; and d) the reliance on crosstabulations and univariate analysis rather than multivariate analytic techniques. Cooper and Gascón's review, being somewhat less detailed than that undertaken above, was slightly more limited in its ability

to detect more subtle problems, such as the apparent mismatch between an independent variable and the sample utilized.<sup>4</sup>

### **1.2.3 Guidelines for Future Research on Small Firm Performance**

At least three implications for future research emerge from the foregoing analysis. First, researchers need to adopt methodologies more suitable to exploratory research. Cooper and Gascón (1992) declared the systematic study of founding factors and their relationship to subsequent performance to be in a stage of infancy; the above analysis supports this claim. The field's stage of development having been quite firmly established, it is now incumbent on researchers to apply research tools, designs and methodologies appropriate for the task.

A second way in which future research can be enhanced is to ensure that the selection of variables is driven by theory to a greater extent than has been the case. This is a tall order in a young discipline where no comprehensive theories have yet been developed. But neither are researchers operating in a void. Grounded theory techniques can be applied productively in such situations. Alternatively, researchers can borrow from theories developed in other disciplines such as cognitive psychology, social psychology, sociology and cultural anthropology. These disciplines, in particular, have made substantial contributions to our understanding of managerial and organizational behaviour in the more established fields of strategic management and organization theory.

A third area for improvement concerns the replicability of research findings. The building of a systematic base of knowledge requires a careful approach to the design and

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<sup>4</sup> A more in-depth treatment of the difficulties associated with predicting new firm performance can be found in Cooper (1995).

execution of research and also the reporting of research. Replicability is fundamental to scientific endeavour and should be prominent in all aspects of empirical work.

It is probably unreasonable to expect a single study to overcome all of the weaknesses and obstacles inherent in the entrepreneurship discipline. At the same time, however, progress in the field will be impeded unless these concerns are taken into account when designing studies. As will be shown in subsequent sections of the dissertation, this study makes a concerted effort to address systematically each of the three recommendations described above. To the extent that it is successful, both our understanding of the complex phenomenon of entrepreneurship and our confidence in the results are enhanced.

### **1.3 PURPOSE**

Westley and Mintzberg (1989) and Sooklal (1991), both working within a leadership framework, were among the first to observe that although vision begins as a private and personal construct, transformation sufficiently powerful to change the environment requires a system of supporters. Hence, vision must gradually evolve into a social construct. Sooklal, utilizing a grounded theory approach in an in-depth study of one organization, observed that these supporters occur both inside and outside the organization, and may be convenience-based (i.e. expecting economic compensation) or value-based (i.e. contributing to a cause without the expectation of reciprocal benefit).<sup>5</sup>

This study represents a test of Sooklal's grounded theory in the context of entrepreneurship. Sooklal's theory included three central constructs: vision, a support system consisting of both value- and convenience-based supporters and inside and outside

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<sup>5</sup> The notion of value-based support has been neglected thus far in the entrepreneurship literature.

supporters, and performance. Based on a review of the literature concerning vision, the vision construct was subsequently refined by dividing it into three separate constructs in order to obtain greater specificity. Of the three vision constructs, one (vision "structure") is a reflection of vision structure, whereas the other two (vision "reach", and vision "focus" [along the internal/external dimension]) represent the content of vision. After reviewing several bodies of literature (small business support, social support, personal networks) support was also decomposed into three constructs: insider/outsider diversity, value-/convenience-based diversity, and support strength. The following research questions were examined:

1. To what extent is insider/outsider supporter diversity influenced by a balanced focus on both internal and external dimensions of the vision?
2. To what extent is support strength influenced by:
  - a) vision complexity
  - b) vision reach
  - c) value-/convenience based supporter diversity
  - d) insider/outsider supporter diversity?
3. To what extent are increases in firm performance influenced by:
  - a) vision reach
  - b) value-/convenience based supporter diversity
  - c) insider/outsider supporter diversity
  - d) support strength?

Additional analysis was carried out to examine the potential for contingent effects of geographic location (i.e. urban versus rural) and gender.

#### **1.4 OVERVIEW OF THE RESEARCH**

The current study represents the first time the theoretical constructs vision and support (and performance) have been combined in a single, testable model. Adding to this difficulty was the paucity of empirical research on vision and the fact that this was also the first time support had been studied in a comprehensive, direct manner. Consequently, in most cases new measures had to be developed from scratch or adapted from other diverse

disciplines. These factors, along with the relatively small sample size deemed feasible, all contributed to increased risk and entailed an increase in both the complexity of the research process and the magnitude of effort required.

Four stages or “phases” of data collection were utilized to implement the research. The first two phases were utilized to develop the data collection instrumentation for the vision construct. The third phase consisted of a pilot study in preparation for the final stage of the research. Finally, Phase Four was used to collect the data for the testing of the research model. Table 1.8 provides an overview of the entire research process. In general, the nature of the methods and analyses tended to evolve from a qualitative emphasis in the early stages to an increasingly quantitative emphasis in the latter phases.

It should be noted that the original intention of the research design was to test the research model with respect to a population of entrepreneurial firms that would include a broad variety of entrepreneurial contexts. Based on the results of Phase Three of the research, however, it was decided to restrict the scope of the research to entrepreneurship in the new venture start-up context.

#### **1.4.1 Research Strengths**

The extensive effort associated with the investigation resulted in the study possessing considerable strength in several areas:

##### Scope of the Research Model

The research model developed for the current study combines the constructs vision and support in a testable form for the first time. The model draws heavily on existing theory and both the external validity (i.e. the application of the model to the entrepreneurial context) and internal validity (i.e. the relationships amongst

Table 1.8  
Overview of the Research Process

Research Stage	Section(s)	Purpose	Method	Outcome/Findings
Theoretical Context	2.1	Provide rationale for key constructs: vision and support, and their impact on performance.	Reviewed literature on the strategy formation process. Incorporated Mary Douglas' (1978) typology of social environments and Sooklal's (1991) grounded theory of visionary leadership.	Generalized model developed indicating that vision and a support system consisting of value- and convenience-based insiders and outsiders contribute to entrepreneurial performance.
Literature Review	2.2 - 2.4	Survey existing knowledge concerning key variables. Identify potential control variables. Survey methodological approaches.	Reviewed literature concerning vision (Sect. 2.2), support (2.3) [including social support (2.3.1), small business support (2.3.2) and personal networks (2.3.3)] and potential control variables (2.4). Critical analysis of theory and methodologies.	Vision construct disassembled into 3 constructs: vision Structure (Complexity) and vision Content (Reach and Focus). Need identified for a 3rd support construct: Support Strength. Geographic location and Gender identified as potential control variables.
Model & Hypothesis Development	3.1 - 3.5	Build testable theory.	Analysis of literature review findings.	Developed nine hypotheses concerning relations between 3 vision constructs, 3 support constructs, and performance construct. Assembled into a structural model.
Selection of Methodological Approach	4.1 - 4.2	Determine suitable techniques for data acquisition and analysis.	Evaluation of characteristics of current study, in combination with evaluation of main alternatives.	Adopted Partial Least Squares (a form of structural equations modeling) for analysis. Data collection techniques are outlined in Data Collection sections.
Operationalization of Variables	4.4 - 4.7	Design measurement model.	Pre-existing measures adapted where possible, but in most cases new measures developed based on weaknesses identified during literature review.	Repertory grid technique (psychology) adopted to operationalize vision. Nineteen individual measures adapted or developed to measure 7 constructs.
Phase One	4.4.2	Develop data collection instrumentation: derive grid elements to operationalize vision.	Pre-tested mail questionnaire sent to random sample of 150 small firms in the province of Newfoundland.	Four well known Newfoundland firms, each representing a generic strategy, adopted as "referent" elements. Total number of grid elements = 8. (Sect. 5.1)
Phase Two	4.4.3	Develop data collection instrumentation: derive grid constructs to operationalize vision.	Semi-structured interviews with convenience sample of 12 small firms in St. John's.	Six internal and six external bipolar constructs adopted. Total number of constructs on standardized grid = 12. (5.2)
Phase Three	4.9	Pilot study.	Semi-structured interviews with random sample of 12 Newfoundland firms nominated for major Entrepreneurship award.	Data collection instrumentation was well received. Sample revealed insufficient instances of eship. Decide to sample start-up firms in Phase 4. (5.3)
Phase Four	4.10	Data collection for test of research model.	Semi-structured interviews with stratified random sample of 50 urban and rural entrepreneurs incorporated in Newfoundland during 1993.	5 of 9 path coefficients statistically significant; all appear managerially significant. Importance of predictors depends on location. (5.4)

constructs) are carefully considered and explicated. Findings from the study indicate the linkages are valid.

### Instrumentation

Two instrumentation devices were designed for the study that may prove useful in future research. The first device was developed to collect repertory grid data for the vision constructs. Experience has shown this to be a reasonably efficient way to collect a sizeable amount of data (96 data points) in a manner that is not intimidating to subjects who may not possess a high level of education. Difficulties with operationalizing vision in the past have served as a barrier to empirical research on vision. The second instrument was a visual aid designed to facilitate the elicitation of key supporters in a consistent manner.

In addition to the instrumentation devices described above, the study also utilized a variety of question formats and response styles (both written and verbal) in order to collect the data using maximally dissimilar methods within the context of a semi-structured interview format. Such features served to reduce the potential for method effects, which are a threat to validity.

### Measures

The study does not employ Likert-type indicators. Instead, individual indicators represent either "objective" data such as quantities, or they represent indexes which are themselves combinations of several numbers. Consequently, they contain more information than the typical item-based measures found on many surveys. In addition, several measures are specifically designed to overcome demonstrated weaknesses with pre-existing measures.



### Traditional Measures of Performance

The use of traditional measures of small firm performance for the dependent variable enhances the comparability of the results with those of other studies.

### Sample Design

Random samples were employed in Phase Three and Phase Four of the research to minimize the potential for sample bias. This entailed a considerable commitment of time, effort and expense. Over 6,000 kilometers of automobile travel were required to administer the interviews. As a result of this effort, however, we can have greater confidence in the results.

### Analytical Technique

The use of a second generation multivariate technique permitted the analysis of inter-related unobservable theoretical constructs measured with multiple indicators. This provided a more comprehensive and powerful evaluation of the research model than would have been available using first generation techniques such as multiple regression.

## **1.5 DISSERTATION ORGANIZATION**

The dissertation comprises six chapters in total. Whereas the early chapters tend to deal with theory development, the later chapters are more concerned with theory testing. Chapter 2 begins by providing the context and rationale for the central assertion of the thesis: that vision and support contribute positively to the performance of entrepreneurs. Following this, the chapter reviews the literature surrounding the key variables, vision and support, and also two other variables (location and gender) worthy of consideration due to their potential for contingent effects. Building on the results of the

literature review, Chapter 3 develops the hypotheses to be tested, ultimately formulating these hypotheses as a research model.

Chapter 4 describes the methodology adopted in the current study, including the individual measures representing the theoretical constructs of the research model and the data collection procedures utilized in each of the four phases of this multi-stage study. From an organizational standpoint, it is useful to note that Phases One and Two are described within the context of the description of individual measures, since the first two phases of the study were utilized to design the instrumentation for the vision constructs. Although this organizational approach creates some inconsistency in sequence, a proper understanding of the measurement model is not possible without a sound comprehension of the process utilized to operationalize vision. The chapter closes with a description of the methodologies employed in Phase Three (a small-scale pilot study) and Phase Four (the major component of the study, constituting the test of the research model hypotheses).

Chapter 5 presents the findings from all four phases of the research. In the case of the final stage, Phase Four, the discussion begins with the evaluation of the measurement model, followed by the evaluation of the structural model, and closes with an assessment of the impact of the control variables. Finally, Chapter 6 summarizes the major findings of the study, describes the study limitations, and discusses the implications of the findings for practitioners and researchers.

## CHAPTER 2

### LITERATURE REVIEW

#### Chapter Outline

#### **2.0 Structure of the Literature Review: Overview**

#### **2.1 Strategy Formation in Entrepreneurial Small Firms**

- 2.1.1** Normative Models of Strategy Formation
- 2.1.2** Alternative Models of Strategy Formation
- 2.1.3** A Framework for Differing Modes of Strategy Formation
- 2.1.4** Towards a Model of Strategy Formation in Entrepreneurial Small Firms
- 2.1.5** Vision and Support Systems Applied to Entrepreneurial Small Firm Strategy Formation: Further Considerations

#### **2.2 Vision (a model element)**

- 2.2.1** Defining Vision
- 2.2.2** Vision Content
- 2.2.3** Vision Structure
- 2.2.4** Vision and Performance
- 2.2.5** Vision as Process
- 2.2.6** Empirical Findings Concerning Vision

#### **2.3 Support systems (a model element)**

- 2.3.1** Social Support
- 2.3.2** Small Business Support
- 2.3.3** Personal Networks

#### **2.4 Control Variables**

- 2.4.1** Geographic Location
- 2.4.2** Gender

#### **2.0 STRUCTURE OF THE LITERATURE REVIEW: OVERVIEW**

One premise of this research project is that entrepreneurship is far from an individual undertaking. This stands in opposition to traditional views of entrepreneurship, which tend to view entrepreneurship as the undertakings of an individual possessed with extraordinary qualities, such as creativity, self-determinism, need for achievement, etc.. Mintzberg (1990) has termed the latter perspective the "great man school" of management (p. 139). While the current research does not deny that these qualities may be more or less present in entrepreneurs (see Gibb, 1986), it does maintain that this emphasis on the individual has masked important social processes which are central to entrepreneurship. In

order to understand why social processes and in particular, vision and support, should be important, it therefore will be necessary to venture outside the traditional entrepreneurship literature.

The literature review begins with an examination of why “significant others” should be important to the entrepreneurship process. Section 2.1 draws upon the discipline of strategic management to explain why this should be the case. Because the notion of strategy is not universally accepted in the small firm literature and hence can be considered controversial, the section begins by presenting an argument for the applicability of the strategy concept to the context of small businesses.

Each of the remaining four sections of the review is structured around one of the model elements utilized for the current research. Section 2.2 surveys the literature on vision within the contexts of strategy, organizational leadership and entrepreneurship. In section 2.3 the literature related to support is addressed. Because the social aspect of entrepreneurship has been neglected by the literature, this section also draws extensively from non-business areas of inquiry, including network theory, which is rooted in sociology, and social support, which stems from social psychology but has since been applied to a variety of contexts, especially those dealing with the helping professions, such as social work. The final section of the review briefly addresses the contextual variables (Bamberger, 1983) in the study, gender and geographic location.

## **2.1 STRATEGY FORMATION IN ENTREPRENEURIAL SMALL FIRMS**

As mentioned earlier, many have maintained that the concept of strategic management should be reserved for large corporations capable of devoting resources to large planning departments. Small businesses, it is argued, are too busy dealing with operational problems and events on a day-to-day basis to be able to devote time to

strategic management. Indeed, some authors have suggested that formalized strategy-making may even be detrimental to small firm performance.

While there is some merit to this argument, stemming from strategic management's historical roots in the normative (planning) model of strategy, it can be criticized for its overly narrow perspective. As will be shown, it is unlikely that one model of strategy applies to all firms, even if we restrict our concerns to large businesses. Such a constricted perspective of the strategy concept has been subjected to strong criticism (McMillan, 1980).

One fundamental and widely recognized dimension of the concept of strategy is the distinction between content and process (Berg and Pitts, 1979; Bourgeois, 1980; Ginsberg, 1988; Hofer, 1975; Huff and Reger, 1987; Jauch, 1983; Miller, 1989; Montgomery, 1988; Pettigrew, 1987). Huff and Reger (1987) have described process research as focusing on the actions leading to and supporting strategy. The distinction between "leading to" and "supporting" strategy has been widely recognized; they are now commonly characterized as strategy formulation (how decisions are generated) and strategy implementation (how decisions are translated into action), respectively (ibid). The term "strategic management" is typically employed to describe the overall strategy process.

The literature examining strategy within the context of the small enterprise can be roughly organized into four categories (Hanlon and Scott, 1995):

- 1) Prescriptive and theoretical literature seeking to identify differences between the planning requirements of large and small firms (e.g. Birley, 1982; Curtis, 1983; Nagel, 1981; Van Hoorn, 1979).
- 2) Empirical studies seeking to establish the extent and usefulness of planning behaviour in small firms (e.g. McKiernan, 1986; Unni, 1981).
- 3) Empirical studies aimed at identifying factors which influence the performance of small firms (e.g. Gibb and Scott, 1985; see also the 51 articles listed in Appendix 1.1). These often have been labelled "success/failure factors" (Hanlon and Scott, 1995).

- 4) Empirical studies attempting to identify and describe the types of product/market and competitive strategies adopted by small firms. (e.g. Bamberger, 1989; McDougall and Robinson, 1990).

Utilizing the above framework, several useful observations can be made concerning the nature and scope of research on small business strategy. First, it is apparent that studies of small business strategy have examined both strategy process and strategy content; the first two categories focus primarily on process-related issues whereas the latter two categories are concerned with content and characteristics. Second, the research on process has tended to emphasize the formulation of strategy; the issue of strategy implementation is sadly under-researched. Thirdly, the process-related research has focused almost exclusively on the planning model (this may help to explain how the implementation process has come to be separated, and consequently ignored), despite the fact that several alternate models of strategy formation exist. These alternative models are more recent and appear to hold greater promise in their ability to explain how strategies actually develop in firms, and especially small firms.

### **2.1.1 Normative Models of Strategy Formation**

Most of the literature on the strategic process concerns the normative or rational planning model which seeks to describe how firms should go about formulating their strategies. Interestingly, however, researchers who have examined how firms actually make strategy are virtually unanimous in their rejection of the applicability of the rational planning model. Mintzberg et al. made the following observation in a seminal article (1976): "Our study (of 25 strategic decision processes) reveals very little use of such an analytic approach, a surprising finding given the importance of the decision processes studied. Of the 83 instances of evaluation choice activity, in only 18 could evaluation be distinguished from choice." (p. 258). Similarly, in a study of 78 strategic decisions, each in a separate organization, Nutt (1984) concluded "nothing remotely resembling the

normative methods described in the literature was carried out" (p. 446). Gibb and Scott (1985) similarly found that the normative model was conspicuously absent in the case of small firms, but did note the presence of a "strategic awareness" amongst some firms.

Such findings force us to regard the traditional view of strategy with scepticism, for it appears that these models are incapable of explaining strategic behaviour in both large and small firms. Overall it can be concluded that while some small businesses do make formal plans, this model is not sufficient to account for the behaviour of most small firms; furthermore, the applicability of rigid planning models to the entrepreneurial context is especially questionable.

### **2.1.2 Alternative Models of Strategy Formation**

Making a subtle yet powerful distinction between strategy formulation and strategy formation, Mintzberg and Waters (1985) have argued that strategies can form gradually and sometimes unintentionally over time. They thus distinguished between "intended" strategies and "realized" strategies. These can be further classified as: (1) deliberate strategies, which are intended strategies that get realized, (2) unrealized strategies, which represent intended strategies that do not get realized, and (3) emergent strategies, which are realized strategies that were never intended.

Mintzberg and Waters went on to identify eight strategies lying along the continuum between deliberate and emergent strategies: planned, entrepreneurial, ideological, umbrella, process, unconnected, consensus and imposed. In their view, for a strategy to be purely deliberate, three conditions must be satisfied: (1) the existence of precise intentions, articulated in concrete detail, (2) the intentions must be shared or completely accepted by all actors within the organization, and (3) the environment must be perfectly predictable, totally benign, or capable of being fully controlled by the

organization. In referring to the perfect planned strategy, the authors noted (p. 259), "... here (and only here) does the classic distinction between 'formulation' and 'implementation' hold up." While it would be unlikely to find situations where the three conditions are fully met, equally rare would be the purely emergent strategy. Thus, Mintzberg and Waters saw most strategies as tending to fall somewhere between these extremes, sharing characteristics of both.

Chaffee (1985) has suggested that the lack of consensus on a definition of strategy stems in part from differing mental models. She identified three distinct models implicit in the strategy literature. The linear model views strategy as methodical, deliberate and sequential, with a heavy emphasis on planning. Thus, organizations set goals and formulate and implement plans to achieve their objectives. Decision-making is viewed as rational, and the environment tends to be considered a nuisance. According to Chaffee, Chandler's (1962) definition of strategy typifies this model. This approach to strategy is recognizable as the "normative" or "prescriptive" approach since the overriding concern tends to be how organizations should make strategy as opposed to how organizations actually make strategy.

Chaffee used Hofer and Schendel's definition to exemplify the second model, which she termed the adaptive model. Hofer and Schendel (1978) defined strategy as "the basic characteristics of the match an organization achieves with its environment" (p. 4), and more elaborately, as "the match between an organization's resources and skills and the environmental opportunities and risks it faces and the purposes it wishes to accomplish" (p. 11). By focusing on the match between the environment and the organization, Hofer and Schendel utilize an adaptive perspective. One important implication of this definition (and model) warrants mention here. As the authors note,

... all organizations can be said to have a strategy. Thus, while the match between an organization's resources and its environment may or may not be explicitly developed and while it may or may not be a good match, the characteristics of this match can be described for all organizations. (1978, p. 4).



According to the adaptive model, small firms as well as large firms can be said to possess strategies, whether or not there exists a formal plan.

At the core of the debate between the linear model and the adaptive model lies the issue of choice or free will. Andrew's (1971) definition of strategy, representing the linear model, has more or less become the dominant influence in the strategy literature (Noel, 1989) and provides for proactive, purposeful choices made by the CEO of the organization. Child (1972) was one of the earliest proponents of the free-will perspective; Hambrick and Mason (1984) have also been influential advocates of choice or voluntarism. At the other extreme is a rather deterministic view of organizational development, represented by the adaptive model. Pfeffer and Salancik (1978) have argued that organizations are dependent on their external environments for the availability of critical resources. Hannan and Freeman (1977) adopted an evolutionary biological perspective, suggesting that organizational development represents a process of natural selection of species, with executives having a minimal impact.

Chaffee's third, or interpretive, model is of a more recent nature, and has not been as fully developed as the other two. Accordingly, Chaffee provided her own definition: "Strategy in the interpretive model might be defined as orienting metaphors or frames of reference that allow the organization and its environment to be understood by organizational stakeholders." (p. 93). The model bases itself on a social contract, assumes that reality is socially constructed (Berger & Luckmann, 1966), and emphasizes symbolic action and communication or language. In a similar vein, Pennings (1985) referred to a "rationalized strategy," where strategy is viewed as a social construction or rationalization used to give meaning to prior activities.

### **2.1.3 A Framework for Differing Modes of Strategy Formation**

Each of the alternative frameworks described in the previous section provide for the possibility of multiple strategies across firms. Taken together, they also provide a variety of perspectives for viewing and interpreting the process of strategy formation. What remains to be explained, however, is how and why different modes or processes of strategy formation might be expected to occur across firms within the context of any one framework. Although the existence of a variety of processes of strategy formation amongst organizations is clearly in evidence in the strategic management literature, there is a noticeable lack of theory to explain this phenomenon. Interestingly, the literature has remained silent on this latter issue, even in the case of empirical studies. Writing about strategic management's entrepreneurial school of thought concerning strategy formation, Mintzberg (1990) observed, "Once again necessary but largely missing is research on context: surveys of where various forms of entrepreneurship seem to function most effectively as well as intensive investigations into how those forms work in practice." (p. 141). In this section an effort will be made to address the theory gap, stepping outside the discipline of strategic management to examine a broader-based theory having the potential to enhance our understanding of why different modes of strategy formation exist amongst firms.

According to an interpretive view, human actors enact their environments (Weick, 1979). Enactment consists of meaning-making; this meaning is created through action and the process of attention. To the extent that organizations enact or create their environment versus passively perceiving the environment, they are engaging in active, intrusive behaviour (Daft and Weick 1984).

What factors account for differences between organizational beliefs about the environment? Daft and Weick suggest that two factors are involved: the characteristics of the environment itself and the previous experience of the individual(s). Mary Douglas

(1978) has developed a two-dimensional framework based on the sociological theories of Weber and Durkheim concerning social control; this framework consists of different social environments which assist in explaining how an individual will choose to interpret a situation. Applied to the context of strategy formation, the framework has the potential to make two important contributions. First, it assists in explaining why and when we might expect different modes of strategy formation in firms. Second, the framework provides a specific context for entrepreneurial behaviour.

The first dimension of the framework, that of group, consists of the claims the corporate or social group makes on its members, the boundaries it draws around them, and the rights it confers on them. This dimension thus measures the degree to which an individual is embedded in a larger group. Grid, the second dimension, represents the degree of rule-based social control exerted on an individual. Consequently, a high-grid context is a highly regulated context; low-grid suggests a powerful emphasis on the unique value of the individual.

When the grid and group dimensions are taken together they suggest a four-category typology of social environments (see Figure 2.1), each of which is associated with a unique cosmology (Douglas 1978; Thompson, Ellis and Wildavsky, 1990). *High group and low grid* represents an egalitarian social environment. All people are classified into either insiders or outsiders, with the latter considered hostile. Emphasis is placed on the group boundary ("us versus them") since the world outside is intrinsically evil and characterized by predatory wolves. Small is considered beautiful and insiders are considered equals. *High group and high grid* results in the belief system of the hierarchist. Here boundaries not only define the outside, but also the internal roles of specialization. Many rules exist and tradition is emphasized. Inequality and authority are justifiable in this environment. The fatalist is a person located in a *low group and high grid* environment. These individuals feel controlled from without, and thus tend to behave

in a passive manner. They are controlled by the nature of their social roles, but do not enjoy the support of group membership.

Figure 2.1  
Typology of Social Environments

<b>High Grid</b>	<b>B.</b> isolated subordination	<b>C.</b> hierarchical bureaucracy
<b>Low Grid</b>	<b>A.</b> entrepreneurial individualism	<b>D.</b> egalitarian
	<b>Low Group</b>	<b>High Group</b>

Source: Caulkins (1988) after Douglas (1978)

The fourth and final quadrant is that of *low group and low grid*; Caulkins has termed this the environment of entrepreneurial individualism. In this environment all boundaries are provisional and subject to negotiation. Although this person is not under the control of another, it is possible for this person to exert control over others. This is a highly competitive environment where individuals are responsible only for themselves. In this quadrant individuals will be biased toward interpreting their experiences as an unfolding series of opportunities (Caulkins 1988).

Preferences can often be explained by their consequences for social relations. According to Thompson, Ellis and Wildavsky (1990), grid/group theory (or "cultural theory") limits the number of possible biases by embedding them in social relations. What decision theorists have labelled "heuristics" these authors term "cultural biases" — the shared meanings, convictions and expectations that shape our way of life and constantly shape our preferences. The theory therefore predicts responses to the important themes of social theory: blame, envy, risk, etc.. Consider the subject of blame, which the authors suggest is the greatest drama of all. According to the theory the individualist will attribute failure to

bad luck or personal failing; s/he will not, however, place any blame on the system, whereas a fatalist would be strongly inclined to blame fate. There is some indirect evidence in the organizational literature to support the plausibility of this. Bowman (1976), for example, found that less-successful food-processing companies tended to complain more about the weather and government price controls than did their more successful counterparts.

As suggested earlier, Douglas' framework has implications for differing modes of strategy formation. Firms located in the high group/high grid quadrant will likely adopt a very systematic and rule-based approach to strategy formation, with specialists assigned to the task. The approach of these firms is best described by the rational planning model. Although this quadrant will tend to be characterized by large firms, smaller and medium-sized firms may also be present if role specialization or rigid lines of authority are important. High group/low grid firms will emphasize the process of strategy formation more so than the actual outcome. For these organizations, it is considered more important that everyone be consulted and a consensus reached than it is for the correct decision to be made. This quadrant would be expected contain a greater proportion of partnerships and team-based high technology ventures. Low group/high grid (fatalistic) firms are less consistent in their choice of strategy. It is difficult to assign one particular process to this group of firms, and it is probable that the process of strategy formation will least discernible in a portion of these. These firms seem to typify Miles and Snow's (1978) "reactor" firm and may range in size from "mom and pops" to large multinational organizations. Despite their outward differences, they will likely share a common attitude toward the usefulness of strategy, viewing it as relatively inconsequential in the long run.

Although firms should be found in each of these environments, it is the low group/low grid quadrant that is of particular interest, for this is where one would expect to find the entrepreneurial small firm. Clearly, large firms may also be present in this quadrant as well (consider the Walt Disney or Polaroid organizations), but they should be

the exception rather than the rule because it is more difficult to maintain the appropriate entrepreneurial social environment in a large organization. This quadrant is least constrained by ruled-based and group social control and it is therefore here that we can expect boldness and imagination to flourish. The nature of strategy formation in this quadrant is the subject of the next two sections.

#### **2.1.4 Towards a Model of Strategy Formation in Entrepreneurial Small Firms**

Mintzberg (1990) describes the entrepreneurial school of thought as viewing strategy formation as a visionary process. According to Bird and Jelinek (1988), vision is an important aspect of organizational leadership in general and entrepreneurship in particular. The importance of vision to the entrepreneurial process has been widely recognized in the literature (Bamberger, 1983; Baum, 1994, 1995; Bird, 1988, 1992; Bird and Jelinek, 1988; Carrière, 1989; D'Amboise and Nkongolo-Bakenda, 1993; Filion, 1990, 1991; Greenberger and Sexton, 1988; Hambrick and Crozier, 1985; Hill and Levenhagen, 1995; Mintzberg, 1990; Sexton and Bowman-Upton, 1991). Furthermore, vision can be considered central to the process of entrepreneurship. Bird described the role of entrepreneurial vision as follows:

New ventures are not coerced into being nor are they the random or passive product of environmental conditions. Ventures get started and develop through initial stages largely based on the vision, goals, and motivations of individuals. (1992, p. 11)

Sooklal (1991) developed a grounded theory of visionary leadership explaining how a personal vision can be enacted into a social reality. The theory makes a distinction between personal vision and leadership dream, with vision considered a private and personal construct based on a single or multiple values, and leadership dream a social construct. Bamberger (1983) described the relationship between the entrepreneurial vision and values as follows:

...the objectives of small and medium-sized firms cannot be isolated from manager's objectives: The firm's objectives are the owner's objectives. The owner's objectives are not only determined directly by his/her values. In

addition, in many cases, they are not explicitly defined: the implicit image that the manager has of the firm's future development overlaps with his/her values. (p. 26)

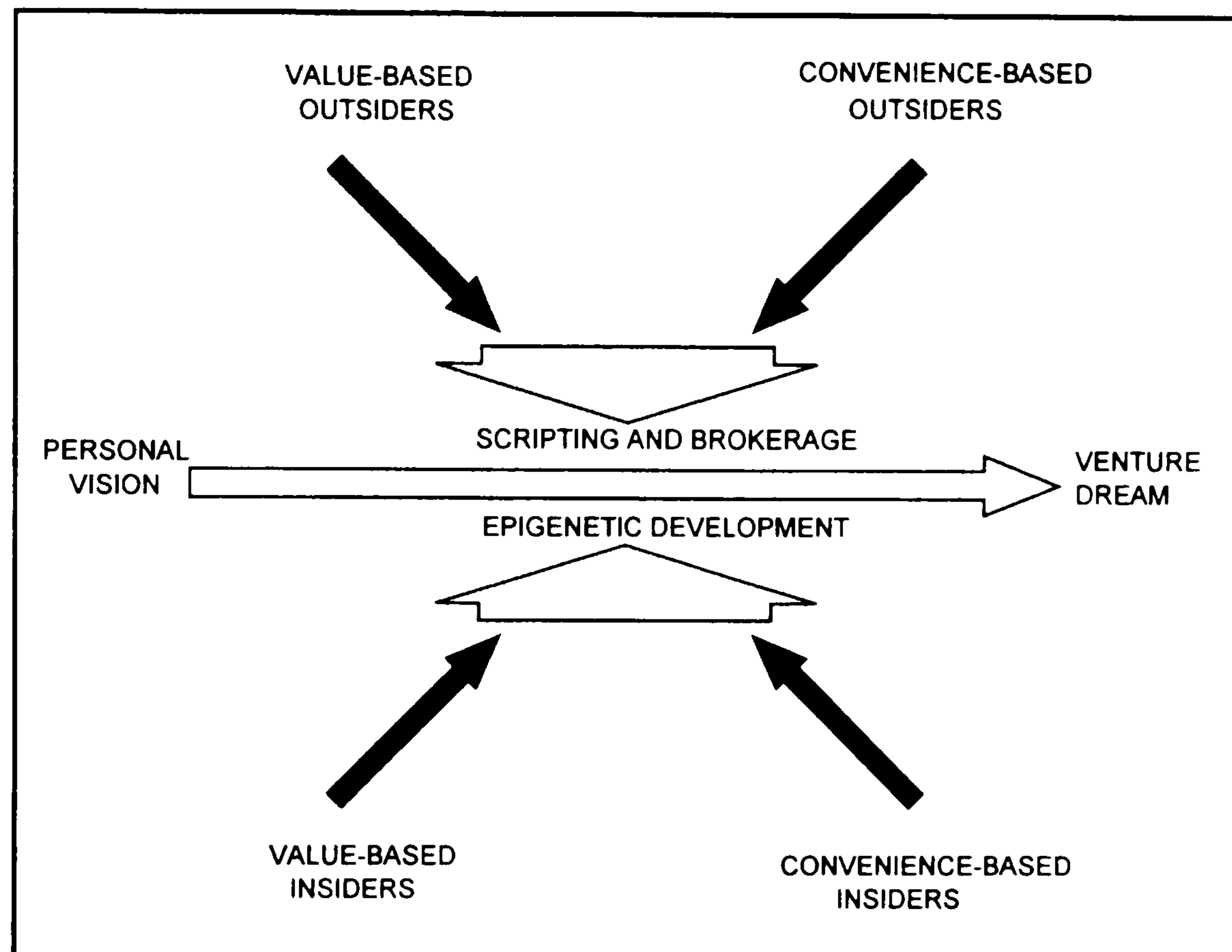
Sooklal declared that a personal vision will gain clarity and social support through the leadership process; as it does so, it gradually evolves into the social construct known as the leadership dream (see Figure 2.2). A passage from Levinson et al. (1978) and reproduced by Sooklal (p. 835) describes the dream as follows:

In its primordial form, the Dream is a vague sense of self-in-adult world. It has the quality of vision, an imagined possibility that generates excitement and vitality. At the start it is poorly articulated and only tenuously connected to reality ... A young man's Dream becomes increasingly rational and reality based as he works to build it into his life. He gains admission to appropriate institutions, he develops the needed skills and qualities of character, makes concrete plans and strives to reach his goal.

In order to construct a dream sufficiently powerful to change the firm, the leader (entrepreneur) requires a support system. This system consists of four components: value-based insiders, value-based outsiders, convenience-based insiders and convenience-based outsiders. A value is defined as a core preference or preference set. Value-based support thus refers to contributions to a "cause" or principle, without the expectation of reciprocal benefit. Convenience-based support comprises support or assistance which is based upon transactional exchange.

One framework which can be applied to the context of the small firm to help identify individuals and groups which constitute these support groups is the stakeholder approach provided by Freeman (1984). A stakeholder is defined as any individual or group who can affect, or is affected by, the achievement of an organization's objectives (p. 25). The concept is applicable to both insiders and outsiders, although Freeman's view of inside stakeholders as internal groups which are troublesome (p. 216) seems unnecessarily restrictive. Freeman suggested that proactive firms may have a high degree of stakeholder management capability.

Figure 2.2  
Venture Enactment Process



After Sooklal

Sooklal proposed that the leader acts as a broker who assembles a leadership dream by providing critical interest support groups with a stake in defining corporate intention, and hence, the reality which is ultimately enacted. A leadership dream must be scripted in order to be implemented. A script is a knowledge schema held in memory that describes expectations about the behaviours, and possibly the sequence of behaviours, appropriate for a particular context (Goia and Poole 1984). Scripts thus enable understanding of a situation and provide a guide to behaviour. They can be acquired through experience directly and indirectly. If scripts are acquired through direct experience, then repetition, reward and reinforcement are necessary in order for people to learn the new behaviours required by the script.

Scripts can also be acquired indirectly; in this case they are transferred or communicated through a variety of media, such as conversations, speeches, and reading materials. An emphasis on repetition is highly consistent with the practitioner literature.



Campbell (1989), for instance, provided the following examples: "He continually reminds everyone of Carrier's goals and the need to perform ... exudes enthusiasm when he talks about what the team has done - consistently reminding everyone that the National's first responsibility is to its customers ... He has found no danger of over-communicating his beliefs ..." Westley and Mintzberg (1989) also provide confirmation of the importance of repetition and the interactive nature of the visionary leadership process.

The definition of the entrepreneur's intentions, through the medium of the venture dream, will be moderated by the need to appeal to different stakeholders with differing expectations. Sooklal suggests that the purpose of the brokerage process between the leader (entrepreneur) and the support system is to define intention and to assist translating it into reality. Brokerage will involve negotiations, consultation, compromise and clarification, during which participants will be given the opportunity to buy into the dream. The process is very much a bi-directional one: "Thus, not only was the leader trying to produce change within his support network; he was also being acted upon by it." (p.849).

Sooklal's theory also incorporated Erikson's (1963) theory of epigenetic change as a means of resolving the endless debate between voluntarism and determinism, since neither of these two extremes supports a mode of leadership that is simultaneously engaging, inspirational and healthy. According to Erikson, for healthy development to occur, an individual's needs must unfold in a predictable sequence: hope, willpower, purpose, competence, fidelity, love, care, and wisdom. By incorporating epigenetic change theory, the timing and pace of organizational change, although moderated by choice and the environment, are regulated in accordance with the needs of the leader.

### **2.1.5 Vision and Support Systems Applied to Entrepreneurial Small Firm Strategy Formation: Further Considerations**

The central features of Sooklal's grounded theory of visionary leadership, as applied to the small firm context, are twofold: the vision of the entrepreneur, which evolves from a personal, private vision to a public, shared vision, and the entrepreneur's support system consisting of value- and convenience-based insiders and outsiders. As will be demonstrated in later sections, there is considerable support in the literature for treating these features as important elements in the entrepreneurial process. Sooklal also incorporated the theory of epigenetic change in his visionary leadership process; nothing similar to this, however, has received mention in prior research on small firms. Therefore, in the interest of parsimony (Whetten, 1989), epigenetic change will be omitted from further consideration as a key variable in small firm strategy formation.

According to Bird (1988a) the impact of the entrepreneur's vision is likely to be greatest at start-up, before the influence of outside stakeholders, business structure, politics, image and culture have been established. In addition, this impact is multi-faceted, is likely to extend for a prolonged period of time, forms the basis of the firm's strategy, and ultimately affects the overall success of the venture.

The founder's intentions determine the form and direction of an organization at its inception. Subsequent organizational success, development (including written plans), growth, and change are based on these intentions, which are either modified, elaborated, embodied, or transformed. Thus, intentions affect a venture's success... (p. 443-444)

Entrepreneurs influence others in order to realize their intentions (Bird, 1988b). Hence, the vision must be communicated to other stakeholders, both inside and outside the organization, to gain their support (Bird, 1988b, Hill and Levenhagen, 1995). In the view of Bird (1988b), entrepreneurs subsequently form instrumental, equitable and exchange-oriented relationships in order to make use of the resources and talents of others. These relationships are what Sooklal termed convenience-based. Sooklal's theory, however, indicates that entrepreneurs draw upon a wider range of relationships in realizing their

vision. Value-based support represents support provided at no charge, and should therefore be considered a profoundly important form of assistance if entrepreneurship is to be viewed as the pursuit of an opportunity without regard for resources currently controlled (Stevenson, Roberts and Grousbeck, 1994).

Mintzberg (1991) has criticized the entrepreneurial school for its inability to elaborate on the strategy formation process, which he likened to a black box. It must be noted, however, that Mintzberg's interpretation of the entrepreneurial school attributes strategy formation to a single leader and emphasizes the solitary character of the vision, which he described as "locked in a single brain" (p. 609). The model outlined in the last section specifically addresses Mintzberg's complaint by incorporating leadership activities which explain the venture enactment process.

One such activity is brokerage, where the entrepreneur convinces others to "buy into" the vision of the firm. The consultation, negotiation, clarification and compromise which ensue serve to modify the original vision and help to define intention. Although the vision is likely to remain more salient for the entrepreneur than for others because of their personal and psychological investment (Bird, 1988a), providing others with a role and a stake in the definition of the venture is a motivating force which can bring people onside to work towards common goals.

Scripting is another activity carried out by the entrepreneur in the process of venture enactment. Alignment is a configuration of parts where all of the parts are contributing to a single purpose and direction (Harrison, 1983). By providing a guide for behaviour, scripts help to achieve alignment amongst stakeholders. Alignment can be difficult for entrepreneurs to achieve, particularly in the case of partners and staff (Bird, 1988a). When alignment is attained, synergy and excitement are created (Bird, *ibid*).

Modelling strategy formation in Sooklal's fashion suggests that strategy processes do not occur in a neat sequential order. For example, Sooklal (1991) proposed that implementation occurred concurrently with the evolution of the dream. Smircich and Stubbart (1985) have argued that enactment involves both thinking and acting. Gibb and Scott (1985) made similar points concerning the incremental and interactive nature of the way owner managers of small firms develop personal commitment to emerging strategies.

The two-way interactive shaping of the vision central to the model has considerable support in the literature. Westley and Mintzberg (1989) note that although the original idea may come from the leader, it is the process of co-creation, the sharing of the vision, that generates the necessary excitement. They likened the need for an active audience to a need for assistance, which is analogous to Sooklal's concept of a support system. Filion (1990) found that the key factor associated with the development of a vision and subsequent visionary achievements was the entrepreneur's internal relations system.

Thus, a major advantage of the model is its capacity to account for the simultaneity of formulation and implementation processes, a position much more consistent with the body of literature on strategy process. Those studies which have examined the strategy process as it actually occurs rather than how it should occur are virtually unanimous in their rejection of the view of formulation and implementation as separate, distinct stages.

While the model does not resolve the choice versus determinism debate, it is perhaps more realistic in its recognition that strategy formation probably shares characteristics of both views. Moreover, although the ability to proactively manage the environment is usually considered a strategic activity of the highest level, this ability is usually only ascribed to large firms. This model, however, suggests that small firms are capable of managing their environments through the enactment process. It thus provides for the possibility of proactive behaviour, and in particular, proactive behaviour without

planning. Indeed, the presence of strong beliefs can serve to bring events into existence (Weick, 1987):

The lesson of self-fulfilling prophecies for students of strategy is that strong beliefs that single out and intensify consistent action can bring events into existence. Whether people are called fanatics, true believers, or the currently popular phrase "idea champions," they all embody what looks like strategy in their persistent behaviour. Their persistence carries the strategy; the persistence is the strategy. True believers impose their view on the world and fulfil their own prophecies. (p. 227).

To date, the literature on venture support systems has tended to emphasize support provided by convenience-based outsiders such as accountants, consultants, venture capital firms and government agencies, with the potential for value-based support and the contribution of insider support being largely neglected. It now appears, however, that support systems need to be examined in their totality; research must seek to accomplish a greater understanding of the composition of these systems and the types of support they provide (which is probably much more varied than the literature suggests). Although network analysis has been employed in prior studies to examine linkages between entrepreneurs and others, it tends to emphasize structural issues at the expense of content-related issues. While it seeks to describe the number of linkages and the type of linkages present in a relations system, it tends to ignore the quality of those linkages, the type of assistance flowing through the linkages, and the amount and quality of assistance received. Put in Sooklal's terms, network analysis has focused on the brokerage activities of the entrepreneur while ignoring scripting activities.

In summary, applying Sooklal's theory of visionary leadership to the context of small, entrepreneurial firms has the potential for making several contributions to our current understanding of the strategy process. Among the most significant of these are the following. First, it reveals the process of entrepreneurship as a social act, forcing the consideration of study designs with units of analysis broader than the single, solitary entrepreneur. Second, the notion of value-based support (which is very consistent with the

notion of visionary leadership) suggests an important construct which until now has been underdeveloped in the entrepreneurship literature. Third, it provides for an iterative, interactive process of strategy formation much more consistent with the real world than the traditional static planning models that have dominated the literature.

## **2.2 VISION (a model element)**

### **2.2.1 Defining Vision**

The American Heritage Dictionary of the English Language (Davies, 1970, p. 774) defines vision in the following ways: "(1) the faculty of sight, (2) intelligent foresight, (3) a mental image produced by the imagination, (4) something perceived through unusual means, as a supernatural sight, and (5) something of extraordinary beauty." Religious prophets were often believed to be the recipients of visions from a divine source; in this commonly applied context, vision is best described by definition number three, which reflects the divine origins of the vision. Recently, however, vision has occupied a position of increasing prominence in the study of organizations. According to Larwood et al. (1995), over a thousand articles and books dealing with vision have appeared in the academic press. In a recent study of 100 of America's fastest-growing firms, vision-setting ability was the requirement for success most frequently cited by CEO's (Hood and Young, 1993).

Most of the organizational literature concerning vision is rooted in the areas of transformational leadership, charismatic leadership and, more recently, strategic management. Transformational leadership (e.g. Tichy and Devanna, 1986) is concerned with bringing about major changes in the attitudes and assumptions of an organization's members and building commitment for the organization's mission, objectives and strategies (Yukl, 1989). Charismatic leadership (e.g. Conger, Kanungo and Associates, 1988) is defined more narrowly, and refers to the perception that the leader is a superhuman or spiritual figure. According to Yukl, the broader scope of transformational and charismatic theories of leadership may help to integrate much of the leadership literature; it remains unclear, however, whether these two theories apply to the normal management of organizations or whether they represent unique forms of leadership found only in exceptional circumstances (e.g. crises). In the case of strategic management, the term "visionary leadership" is often applied to situations where the overall strategic

direction for an organization derives from a vision articulated by the organization's CEO (see, for example, Westley and Mintzberg, 1989).

Of the five dictionary definitions of vision cited earlier, it would appear that the second and third have the most in common with the organizational literature on vision, in that they link organizational vision with a mental image and a future orientation. Table 2.1 presents several definitions taken from the organizational literature. It should be noted that of the numerous works dealing with vision reviewed during this research, surprisingly few provided an explicit definition of the construct. The large proportion of works which ignore the definitional issue may be partially attributable to the fact that vision is largely unobservable. Elinor Morris (1987) has argued that strategic vision is difficult to define because it often is not part of an ongoing business practice, and because strategic visions do not always fit into existing molds.

Despite the rarity of explicit definitions, a review of Table 2.1 reveals some interesting aspects of the vision construct. First, it is immediately apparent that there is not yet a universally agreed upon definition. Second, although there are important differences between the formal definitions, it can also be seen in the fourth column of the table that most of the definitions share certain features, even though the authors may represent differing research domains and utilize different terminology. The majority of definitions include three characteristics, namely: temporal orientation, cognitive orientation and affective orientation. Of these, temporal orientation and affective orientation can be associated with the content of vision, whereas cognitive orientation refers to the vehicle through which vision manifests itself (i.e. the form it takes), and can therefore be associated with the structure or process of vision. The majority of definitions also attempt to address content in a more specific fashion (e.g. products, values, goals, means of attainment) but there is little consensus as to just what the content should be.



Most of the definitions cited depict vision as a mental image or cognitive structure. As such, it is not directly observable, suggesting the need for research tools and methods suitable for capturing idiographic phenomenon. Vision as a mental image is typically depicted as the outcome of the process of visualization (Tichy and Devanna, 1986; Robbins and Duncan, 1988). In a study by Rockey, some entrepreneurs were found to employ visualization in the process of starting a business, with most respondents reporting that they derived a variety of valuable benefits from their visualizations (1986). Visualization was found to be helpful, for example, in clarifying and defining the new venture, providing internal motivation, anticipating client feedback, structuring and staffing the venture, and designing new products. Research in the field of psychology has demonstrated that imagining a future event can make that event appear more likely (Cervone, 1989). Four experiments conducted by Gregory, Cialdini and Carpenter (1982) provide evidence that imagining an event can not only influence subjects' beliefs as to the probability of an event, but also their subsequent behaviour.

Temporal orientation is addressed by all of the vision definitions cited and there is unanimous agreement that organizational vision is oriented toward the future. According to Bird (1988a, 1992), this gap between current conditions and the vision, or future which is not yet manifest, creates "temporal tension." Temporal tension becomes a motivating force for action as the entrepreneur attempts to draw the future into the present; the creation and maintenance of temporal tension are therefore considered important psychic activities in the process of implementing entrepreneurial intentions. In a similar vein, Tichy and Devanna (1986) suggest that in order for difficult transitions and revitalization to occur in individuals (and organizations), the individual must be "pulled" into the future by something (p. 132); In summary, it would seem that temporal tension stemming from a vision situated in the future should be essential to entrepreneurship and change.

Table 2.1  
Definitions of Organizational Vision

Author	Research Domain	Term Used	Definition	Central Features
Bass, B. (1987)	Leadership	Envisioning	Creating an image of a desired future organizational state.	<ul style="list-style-type: none"> <li>- mental image</li> <li>- achievable</li> <li>- desirable</li> <li>- future orientation</li> <li>- focus on organizational state</li> </ul>
Baum, J.R. (1994)	Entrepreneurship	Vision	A projected image of the products, services, and organization that a business leader wants to achieve.	<ul style="list-style-type: none"> <li>- mental image</li> <li>- desirable</li> <li>- future orientation</li> <li>- focus on products and organization</li> </ul>
Bennis & Nanus (1985)	Leadership	Vision	A mental image of a possible and desirable future state of the organization.	<ul style="list-style-type: none"> <li>- mental image</li> <li>- achievable</li> <li>- desirable</li> <li>- future orientation</li> <li>- focus on organizational state</li> </ul>
Carrière (1989)	Strategy/Small Business	Strategic vision	The mental construction process by which the individual decision-maker articulates a desired as well as presumably a possible future for his organization.	<ul style="list-style-type: none"> <li>- cognitive process</li> <li>- produced by single individual</li> <li>- achievable</li> <li>- desirable</li> <li>- future orientation</li> </ul>
Filion, L.J. (1990a)	Entrepreneurship	Vision	A projection: an image projected into the future of the place the entrepreneur wants his products to occupy eventually on the market, and also an image of the type of enterprise needed to get there.	<ul style="list-style-type: none"> <li>- mental image</li> <li>- future orientation</li> <li>- desirable</li> <li>- focus on product/market relationship</li> <li>- focus on means of attainment</li> </ul>
Robbins & Duncan (1988)	Strategy	Organizational vision	The shared aspired future state for the organization which identifies the organization's values, sets priorities for goals and objectives, and sets the guidelines or roadmap by which these goals and objectives will be pursued.	<ul style="list-style-type: none"> <li>- shared or social phenomenon</li> <li>- desirable</li> <li>- future orientation</li> <li>- focus on organizational state</li> <li>- focus on values and goals</li> <li>- includes means of attainment</li> </ul>
Sexton and Bowman-Upton (1991)	Entrepreneurship	Vision	The image that entrepreneurs have in their mind about what they intend to accomplish.	<ul style="list-style-type: none"> <li>- mental image</li> <li>- future orientation</li> <li>- focus on intention</li> </ul>
Sooklal (1991)	Leadership	Personal vision	The imagined possibility of a future state which is poorly articulated and tenuously connected to reality, but which generates excitement and vitality within its possessor	<ul style="list-style-type: none"> <li>- imagined possibility</li> <li>- future orientation</li> <li>- poorly articulated</li> <li>- generates excitement</li> </ul>

The third thread of commonality apparent in the definitions taken from the literature relates to the affective orientation of vision. Most, but not all, authors indicate that the future state or content depicted in the vision is a desirable one. Logically, the entrepreneur should have available a variety of alternative futures from which to choose, but to conclude that individuals will naturally select the most appealing alternative is probably oversimplistic. Vision appears inextricably linked to an entrepreneur's intentions. Intention is "a state of mind directing a person's attention, experience and behaviour toward a specific object or method of behaving" (Bird, 1992, p.11). Following this reasoning, it is no longer a normative issue as to whether vision content should exhibit desirability; instead, for vision to exist, it must be desired. Desirability is hence regarded as an essential definitional feature of vision. Other writers (e.g. Bass, 1985; Bennis and Nanus, 1985; Morris, 1987; Tichy and Devanna, 1986; Westley and Minzberg, 1988) have discussed the energizing or motivating capacity of vision in more traditional organizational contexts. This perspective is valuable because it emphasizes the potential for vision to motivate others. Overall, Robbins and Duncan's choice of language in describing vision as an "aspired" future state appears quite fitting.

The foregoing section on definitions of vision has revealed considerable variation amongst the approaches taken. Nevertheless, three features of vision tend to be the object of agreement in the literature, despite the research perspective adopted. These features are:

- 1) vision is a mental image
- 2) vision is oriented toward the future
- 3) the future state depicted in the vision is a desirable one

While recognizing that the definitional issues surrounding vision are far from being resolved, the definition of vision adopted for this study will be based on the three characteristics cited above. Hence, entrepreneurial vision will be defined as a mental image of an aspired future state for which a business idea potentially provides the means of attainment.

### **2.2.2 Vision Content**

In the preceding section, the fact that there was considerable disagreement in the literature concerning the content of vision was highlighted. The current section will provide a brief overview of this diversity of opinion, identify some problems in the approaches taken to date, and present the results of the few studies which have attempted to examine the issue of vision content empirically.

One perspective available for examining the issue of vision content in summary fashion is to consider the number of focii the content addresses (i.e. an issue of scope). Sashkin (1986, 1988), for example, suggests that the organizational vision of a visionary leader should include three themes: dealing with change, ideal goals and people, both employees and customers. Tichy and Devanna (1986), whose perspective is that of transformational leadership, emphasize that visions should be holistic and possess two fundamental elements — purpose and emotional appeal. If vision does indeed represent an aspired future state (as argued in the previous section on definitions), it is not surprising to find vision associated with purpose or ideal goals, and emotional appeal. On the other hand, the prescriptions of both of these authors seem to suffer from conceptual inconsistency because their lack of distinction between vision content and vision function results in ambiguity and confusion.

A review of the table of definitions of vision (Table 2.1) also reveals an important area of disagreement concerning vision content. While all of the definitions depicted the content of vision as dealing with an ideal future state, there was considerably less agreement as to whether the content should include the means of attainment. Robbins and Duncan (1988), for example, maintain that in addition to setting the goals and priorities of the organization, vision should set the guidelines and serve as a roadmap, indicating how these objectives will be achieved.

Robbins and Duncan are prescribing the content of vision from the perspective of strategic management. Of the various approaches to vision, the strategic management approach is perhaps the most detailed and explicit, and in the view of this author, the least connected to reality. Strategy theorists tend to provide a normative view of vision (as well as strategy itself) — i.e. vision “as it should be” rather than how it actually is. This school of thought is represented by such authors as Lipton, 1996; Collins and Porras, 1991; Collins and Lazier, 1995; Baum, 1995; and Nanus, 1992. They usually characterize vision as consisting of organisational values, purpose and mission (see, for example, Collins and Lazier, 1995); for them vision can be best understood as a summary form of several existing components of strategy.

Two criticisms of the strategic management approach appear warranted here. First, there is no empirical evidence to support this (normative) notion of vision. As mentioned earlier, the normative view does not necessarily describe how vision occurs in the real world. The second criticism is that this notion of vision does not seem to contribute anything new to our understanding because it is merely a re-expression of existing strategy concepts (i.e. values, purpose, mission); although the term “vision” is currently in vogue, it seems highly unlikely that the concept will be retained by management theorists unless it makes a unique contribution to our understanding of how organizations function.

Still another area of disagreement over the content of vision is evident from the earlier review of definitions. Several authors (e.g. Bass, 1987; Bennis and Nanus, 1985; and Carrière, 1989) hold that in addition to being desirable the vision must be achievable, but this view is by no means unanimous. The reasoning underlying the requirement is obvious; these authors feel that a vision must be achievable in order for it to be motivating. In contrast, Hill and Levenhagen (1995) argue that an entrepreneur could have a valid vision and not be able to implement it due to the lack of an adequate means of articulating it in terms sufficiently evocative. On reflection, it is by no means obvious that achievability is a necessary condition. It is possible, for instance, that a vision could be motivating if it were

merely believed or perceived to be possible. This issue has not been addressed adequately in the literature, and remains empirically open at the present time.

Most of the discussion about content thus far has dealt with authors who were concerned about vision in large organisations (Carrière, 1989 was a notable exception). It may be, however, that vision in small businesses and new ventures should differ from vision in large organisations, perhaps because it is required to fulfill a different function. Greenberger and Sexton (1988) argue that the visions of prospective entrepreneurs will indeed differ from those in large organisations. They suggest that entrepreneurs' visions will be less developed than those described in the strategic management literature, and constitute a new way of viewing the environment.

One major source of agreement not evident in the comparison of definitions described earlier is that the content of the vision should be based on personal or organisational values. Most authors discuss the role of values explicitly (e.g. Sooklal, 1991; Stata, 1988; Robbins and Duncan, 1988; Bennis and Nanus, 1985; Morris, 1987; Tichy and Devanna, 1986; Sashkin, 1988; Collins and Lazier, 1995); these writers generally indicate that values provide the energizing and inspirational qualities needed to fulfill the motivational function of vision. Despite being an area of significant consensus, however, it should be noted that not all authors have identified values as a key component of vision. Westley and Mintzberg (1989), for example, suggest that although a vision can focus on ideals, other equally plausible alternatives include products, markets, services and organizations. In the current study where the context is that of entrepreneurial vision, the position adopted is that values may be present in or form the basis for vision to a greater or lesser degree. To the extent that a vision is value-based, that vision should possess the potential for greater inspiration and durability.

Moderate consensus in the literature is also evident regarding the time horizon of vision. This subject is not addressed by all authors, but among those articles where it is

discussed, there appears to be relative agreement. According to Kotter (1990) visions are generally situated 3-20 years in the future. Bennis and Nanus (1985, p. 103) state "The vision should be projected in time and space beyond the boundaries of ordinary planning activities... but it should not be so far distant as to be beyond the ability of incumbents in the organization to realize." and go on to suggest that 10 years might constitute an appropriate time horizon. Sashkin (1986) advocates a 10-20 year time span. Stata (1988) argues that the distant time horizon is a function of the long term nature of the issues underlying vision, including value systems and the development of people and organisations. Each of these authors, however, is discussing vision in the context of existing organisations. In the case of new ventures the situation is much different because the entrepreneur is starting with a clean slate and consequently facing a great deal more uncertainty. In these instances it might be considerably more difficult to imagine the future 20 or 30 years distant. It was therefore decided to adopt a 10-year horizon in the current study. This time horizon is still in excess of normal planning activities but falls at the lower end of the range suggested in the literature in order to reflect the additional uncertainty faced by new small firm start-ups.

One aspect of vision content that appears to have been overlooked by much of the literature is that of "reach." Reach can be described as the discrepancy between the current state of affairs or status quo and the idealized future depicted in the vision. According to Conger and Kanungo (1988), visions possessing greater reach should provide greater challenge and a stronger motivating force to followers. Visions characterized by a greater discrepancy between the status quo and the idealized goal are also more likely to be attributed as extraordinary vision rather than just an ordinary goal (ibid). This position is partially supported by the attitude change literature, which suggests that a maximally discrepant position within the latitude of acceptance places the greatest pressure on people to change their attitudes (Hovland and Pritzker, 1957; Petty and Cacioppo, 1981).

In summary, the object of this section has been to examine themes in the literature concerning the content of vision. It was observed that most of literature tends to be

prescriptive rather than descriptive, and that the majority of the literature is directed at large, rather than small, firms. These weaknesses raise the concern that much of the literature may not represent the reality of most small firm start-ups. It was seen that there tended to be little agreement as to the scope or number of focii addressed by vision content; moreover, this issue remains inadequately conceptualized. Additional issues characterized by weak or low agreement were whether vision content should contain the guidelines or means of attainment for achieving the vision, and whether or not the vision must be achievable. Areas of moderate agreement included the notion that vision should be value-based and the specification of the vision time horizon. In the latter instance, it was argued that 10 years would constitute an appropriate time horizon for small firm start-ups. Finally, an important but neglected aspect of vision content is that of "reach," which represents the discrepancy between the status quo and the idealized future state. Visions characterized by greater reach should provide stronger motivation to supporters.

### **2.2.3 Vision Structure**

As a cognitive structure, vision can be examined from the point of view of its structural characteristics or attributes. This section will examine the structural attributes of vision which have appeared in the literature. Three attributes are identified; they are clarity, complexity and holism.

Perhaps the most commonly discussed attribute of vision structure is that of clarity. Most authors agree that clear visions will be more effective (see, for example, Bryson, 1988; Collins and Lazier, 1995; Larwood et al., 1995; Baum, 1995; Bennis and Nanus, 1985; Sashkin, 1986; Bird and Jelinek, 1988; Rockey, 1986; Morris, 1987). Clarity of vision should be important for two reasons. First, by providing a more distinct sense of direction, a clear vision should better enable the leader or entrepreneur to understand what needs to be done in order to attain the vision. In other words, a clear sense of direction should facilitate the



understanding of the actions and behaviours required to achieve the vision (i.e. the scripting process). Second, a clear sense of the vision should enable the leader or entrepreneur to express the vision to others (i.e. the brokerage process) in a compelling fashion (Sashkin, 1986) and be more easily understood by stakeholders (Collins and Lazier, 1995). The successful communication of vision is regarded as essential to garnering support from internal and external stakeholders. Clarity of vision can thus be viewed as an important factor in the vision implementation process (Robbins and Duncan, 1988).

Greenberger and Sexton suggest that the visions of entrepreneurs may be less developed than the visions described in the strategic management literature, but add that the vision must still be clear enough to motivate others. In their words, "... entrepreneurs are likely to have some abstract image in mind about what they intend to accomplish, and they must be able to create a similar image in the minds of others." (p.4). This sentiment is echoed by Bird and Jelinek (1988, p. 24):

Clarity of vision is also important to venture success. ...The entrepreneur's words and deeds are witnessed by important stakeholders such as employees, customers and investors. When vision is clear and consistent, these stakeholders come to share the vision and make commitments to that future.

The second structural attribute of vision identified in the literature is that of complexity. Robbins and Duncan define complexity as "the number of values, objectives and means identified to attain those objectives that are specified in a corporate vision" (1988, p. 224). In their view, the degree of complexity can serve to differentiate visions.

Westley and Mintzberg (1988) suggest that strategic visions are complex images (p. 163); if this is indeed the case, we should expect that vision should be associated with a complex structure. Tichy and Devanna (1986) argue that visions in large organisations are complex collages of many possible visions, whereas the vision of founder/entrepreneur of a small firm will likely be more simple because it represents one person's dream. One would

therefore expect to find a relationship between vision complexity and the scale of the organization.

Although Robbins and Duncan (1988) do not provide a clear indication of an expected relationship between complexity and effectiveness, they intimate that too much complexity can become overwhelming when it comes time for implementation of the vision. Hill and Levenhagen also warn that increased complexity can have negative consequences, although for different reasons:

... the parsimonious nature of mental models that makes them useful as heuristics also limits their accuracy and precision. The more detailed a model, the more precise it can be in application. Additional detail, however, may decrease the value of the model in articulating ambiguous problems. Moreover, precise models may also reduce organizational flexibility and adaptability.  
(1995, p. 1059)

This latter position can not be easily dismissed, and points to the possibility that the relationship between vision complexity and vision effectiveness may be that of an inverted U shape, rather than a linear one. The potential for a complex, non-linear relationship suggests a need for caution in most statistical investigations of this phenomenon.

A third and final aspect of vision structure, and one which has been inadequately addressed in the literature, concerns the holistic nature of vision. Although the holistic nature of vision appears to be implicit or taken for granted in many definitions of vision (i.e. as a "desired future organisation state"), only a few authors have discussed the issue explicitly. Both Bird (1988a) and Morris (1987) argue that visions tend to be holistic because they stem from intuitive thought processes. This intuitive mode of thought has sometimes been referred to as "thinking from the right side of the brain," in contrast to the "left-brained" mode of thinking which is associated with rational thought. Tichy and Devanna (1986) also provide support for the holistic nature of vision, noting that it is often at odds with the static planning models utilized by many large organisations. Overall, it is somewhat surprising that the holistic nature of vision has not received more attention in the literature,

as the issue appears to have important implications for the operationalization of the vision construct.

This section has identified three structural attributes of vision: clarity, complexity and holistic nature. These attributes provide a means of comparing and contrasting different organisational visions. Clarity was generally associated with vision effectiveness. The literature tended to be unclear regarding the relationship between complexity and vision effectiveness, but did provide some directions for future research. Finally, it was concluded that the holistic nature of vision was a neglected, but important, phenomenon.

#### **2.2.4 Vision and Performance**

Management theorists have attributed several benefits to organisational vision. Authors writing from a leadership perspective (e.g. Tichy and Devanna, 1986) tend to emphasize the motivational benefits of vision. Strategic management theorists, on the other hand, usually include a broader spectrum of benefits. Robbins and Duncan (1988), for example, identify four functions of vision: a motivational function, a roadmap function, a control function and a change function. Similarly, Morris (1987) lists the following benefits: a future direction, an overall framework for the organisation's mission and goals, and an energizing force for employee communication, participation and commitment.

In view of the benefits accruing from vision, it is not surprising that several researchers (Hambrick and Crozier, 1985; Sexton and Bowman-Upton, 1991; Baum, 1994, 1995; Bird and Jelinek, 1988; Bennis and Nanus, 1985) have suggested the existence of a positive relationship between vision and organisational performance. It should be noted, however, that most would agree that possession of a vision is insufficient to ensure effective performance; the overall achievement of organisational goals will also be dependent on the effectiveness with which the vision is communicated to others (Baum, 1995). A slightly

different position is taken by Bryson (1988), who suggests that while vision may be helpful for success, it may not be absolutely necessary for improved organizational performance. Unfortunately, no reasoning accompanies this assertion.

### **2.2.5 Vision as Process**

Many authors have furnished frameworks aimed at simplifying and summarizing the vision process. Table 2.2 presents an overview of the major frameworks appearing in the literature. It is apparent that there is little consensus as to how the process is understood. The wide discrepancy of views is again partially attributable to the research perspectives of the authors, with the frameworks of the strategic management theorists (Robbins and Duncan, 1988; Westley, 1992; Morris, 1987) generally including more activities and detail than those of leadership theorists.

Despite the broad spectrum of approaches, it can be seen that most authors make a distinction between vision formation and vision implementation, and that both of these phases are generally regarded as important in the overall vision process. Within the formation stage, there is considerable disagreement as to how vision actually is developed, although most prescriptive approaches suggest a conscious, purposeful search process, with an emphasis on intuitive, right-brain thought processes. The strategic management perspective, in contrast, takes a more formal, analytical approach, where vision is developed from a series of careful analyses of strengths and weaknesses, vision audit, opportunities, scenarios, etc. (see, for example, Nanus, 1992).

Table 2.2  
Frameworks Used to Depict the Vision Process

Author	Major Activities or Phases*
Bennis and Nanus (1985)	<ol style="list-style-type: none"> <li>1. Paying attention</li> <li>2. Synthesizing vision</li> <li>3. Focusing attention</li> </ol>
Hill and Levenhagen (1995)	<ol style="list-style-type: none"> <li>1. Sense-making</li> <li>2. Sense-giving</li> </ol>
Morris (1987)	<ol style="list-style-type: none"> <li>1. Scanning</li> <li>2. Managing the context</li> <li>3. Communicating</li> <li>4. Empowering</li> <li>5. Reinforcing</li> </ol>
Robbins and Duncan (1988)	<ol style="list-style-type: none"> <li>1. Sensemaking               <ol style="list-style-type: none"> <li>a) Triggering</li> <li>b) Interpreting</li> <li>c) Acknowledging vision as a problem</li> </ol> </li> <li>2. Vision creation               <ol style="list-style-type: none"> <li>a) Initial vision formulation</li> <li>b) Communication of vision</li> <li>c) Develop negotiated vision</li> </ol> </li> </ol>
Sashkin (1988)	<ol style="list-style-type: none"> <li>1. Expressing the vision</li> <li>2. Explaining the vision to others</li> <li>3. Extending the vision</li> <li>4. Expanding the vision</li> </ol>
Sooklal (1991)	<ol style="list-style-type: none"> <li>1. Scripting</li> <li>2. Brokerage</li> </ol>
Tichy and Devanna (1986)	<ol style="list-style-type: none"> <li>1. Diagnosing the problem</li> <li>2. Creating a motivating vision</li> <li>3. Mobilizing commitment</li> </ol>
Westley (1992)	<ol style="list-style-type: none"> <li>1. Catalytic vision</li> <li>2. Legitimized vision</li> <li>3. Articulated vision</li> <li>4. Enacted vision</li> <li>5. Embedded vision</li> <li>6. Routinized vision</li> </ol>

\* Although the activities or phases are numbered, it should be noted that the activities are not necessarily listed in sequential order. Depending on the author, the activities may be iterative rather than sequential.

Within the phase of vision implementation, there is a general consensus that the vision must be communicated to others in a clear and compelling fashion. The leader must be skilled at conveying the vision through both oral and written communication (Sashkin, 1988) and often through more subtle means as well. Case studies and research reveal that effective visionary leaders create symbols, mottos and rituals in the course of their day-to-day work (Morris, 1987). Both Bennis and Nanus (1985) and Hill and Levenhagen (1995) emphasize the role of metaphor in communicating the vision to others.

The fundamental point of contention over implementation concerns whether, and to what degree, others will participate in the ongoing shaping of vision. In the view of the charismatic leadership perspective (e.g. Sashkin, 1988), which emphasizes the individual leader, the vision remains the property of the leader for the life of the vision. As Bass puts it, "In organizational settings, they paint for their subordinate an attractive vision of what the outcomes of their efforts could be." (1985, p. 40).

Others, however, argue that vision is essentially a social process. Robbins and Duncan use the term "negotiated vision" (1988, p. 225) to convey the active participation of others in the vision-shaping process. Sooklal (1991) makes a distinction between the original vision, which is private and personal, and the leadership dream, which is the public, social construct. It is apparent that for the social view of the vision process, the line between vision formulation and vision implementation is extremely blurred. Here, implementation involves communicating the vision to others who actively participate in the re-shaping of the vision. This then is a dynamic process not easily captured by static frameworks depicting distinct steps.

It is unfortunate that the frameworks developed to date have not been followed up with rigorous research designed to investigate their applicability and explanatory power. As a result, there is little information available by which these frameworks can be evaluated. Most are prescriptive, again raising the question as to whether the frameworks are adequate representations of reality; Westley's framework, in contrast, was developed from a single case in-depth investigation at a Montreal hospital.

In summary, at least two broad phases of the vision process have been identified in the literature; they include the formation of the vision or cognitive image, and the implementation or transmission of the vision to others. Although there is some disagreement as to whether the vision is entirely shaped by the individual leader or whether followers or supporters also play an active role in shaping the vision, all writers generally emphasize the

importance of communicating the vision in a clear and compelling fashion. This suggests that an important variable or construct for research should be the degree to which others share in, or have, the same "vision" as the entrepreneur or leader. If others do indeed possess the same image or vision, it can be concluded that the vision has been clearly communicated; this in turn should provide one indication that the vision has been successfully implemented. The degree to which others possess the same vision as the original entrepreneur can be termed vision "congruence." Such a construct would provide a useful measure of the extent to which the vision is shared amongst others.

### **2.2.6 Empirical Findings Concerning Vision**

Given the prominence of the vision construct in the popular and academic press, surprisingly little empirical work has been conducted to date (Larwood, et al., 1995). In a recent study of 300 senior executives in the U.S. more than 80 percent claimed to have a clear vision of how they wanted their firm to evolve (Campbell, 1989). Yet Baum (1995), for example, reported that he was able to find only one empirical study of entrepreneurial vision. In this section the few empirical works dealing with vision will be reviewed. It should be noted that since there have been few attempts to investigate the phenomenon of vision, these studies are of interest not only for their findings, but also for their methodological approaches.

Let us begin with several studies addressing the subject of visioning, which Rockey (1986) equates with visualization. Rockey found that over 50 of 400 respondents to a survey sent to American business people reported that they had used visualization in the process of starting a business. Visualization before inception was found to provide several benefits, serving as an aid to focus and clarify the new venture, work through the negative thoughts of others, plan facilities, structure and staff the organization, and enable the entrepreneur to proceed with greater confidence. The discipline of psychology has provided experimental

evidence that imagining a future event can make that event appear more likely (Cervone, 1989). Experiments conducted by Gregory, Cialdini and Carpenter (1982) provide evidence that imagining an event can not only influence subjects' beliefs as to the probability of an event, but also their subsequent behaviour.

Based on the results of a study of 30 rapid growth firms, Hambrick and Crozier (1985) concluded that the chief executives of very successful firms were able to envision and articulate what the firm would be like as a larger organization. In these authors' view, only through the ability to envision the larger firm is there any hope of readying the organization for that state. From the results of a phenomenological study involving six months of fieldwork in a single cooperative organization, Brown (1986) concluded that founders should share their vision with all organization members, particularly during the start-up phase when success and failure tend to be ongoing issues.

Larwood, Kriger and Falbe (1993) administered a mail-out questionnaire to deans of American business schools. Respondents were asked to provide a one-sentence vision statement and then to rate the statement using a 26-item rating instrument. Cluster analysis of the 128 responses yielded three distinct groups, based on the deans' self-evaluations of their vision statements. Reactive communicators described their visions as less changing, less flexible and less risky. Reactive loners considered their visions to be less detailed, less formalized and less understood, communicated, and accepted. Finally, proactive visionaries believed their visions to be more action-oriented, inspirational long-term and strategic. The authors also concluded that both personal background and the situation exert influence over a dean's vision, although neither could be said to overwhelmingly determine vision.

A later study by Larwood et al. (1995) of 331 business executives again utilized a similar methodological approach. Using cluster analysis of the ratings on the 26-item self-evaluation instrument to operationally define differences in vision content, the authors found that differences in vision content are related to length of vision horizon. One criticism of



their approach, however, is that while the investigators used a separate and specific question to determine "length of vision horizon", one of the questions on the 26-item instrument also dealt with vision horizon (the term used in the rating instrument was "Long-term"). Since differences in the group mean for this latter item were found to be statistically significant ( $p < .01$ ) across all three clusters, it therefore appears that the presence of a time-horizon item in the instrument used to define clusters of vision content potentially is confounding the positive relationship between "content" and "length of vision horizon."

The study also found partial support for the hypothesis that differences in vision content are associated with perceived change in a firm and an industry. Once again, these results may be questioned due to the presence in the 26-item self-rating instrument of several items related to change (e.g. "Long-term," "Planned," "Changing") which were found to be significant in differentiating between the clusters defining content. Support received for the hypothesis that differences in vision content are associated with executives' perceptions of their control and need for control may similarly be confounded by the "Product of leadership" item in the self-rating instrument. No support was found for the hypothesis that differences in vision content are related to tenure in a present position and firm, and, interestingly, there was no relationship found between size of firm and vision content. The authors did conclude, however, that executives were able to articulate and evaluate their visions.

Baum (1995) conducted a study of 363 entrepreneur CEO's of architectural woodworking firms (average size 25 employees) in the United States in order to determine whether vision quality and vision communication are related to firm performance (as measured by venture growth). Vision quality was measured by evaluating the entrepreneurs' written vision statements according to 10 criteria. Vision communication was measured by two items: whether or not the vision was written, and whether or not employees were aware of the company vision. Both items were measured by self-report; similar evaluations were available from associates of approximately half of the entrepreneurs. Utilizing structural

equation modeling with lisrel analysis, Baum found that vision quality has a strong direct positive effect on venture performance, with that effect being strongly moderated by vision communication. Entrepreneurs scored on average 33 out of 100 possible points for vision quality, with Baum noting that the majority of entrepreneurs submitted “poor” vision statements. This disappointment seems to be strongly influenced by the author’s own research framework, with many of the criteria drawn from the normative and strategic perspective of Collins and Lazier (1995). As has been argued in section 2.3, such lofty notions of business vision should be highly suspect in the real world of small firms.

Some of the most interesting research on entrepreneurial vision comes from Quebec, Canada. Unlike much of the western world where the media and populace often cry out for stronger political leadership, Quebec provincial premiers such as Rene Levesque and Lucienne Bouchard are still given credit for possessing strong visions which have served to inspire the province and ultimately shape the country. D’Amboise and Nkongolo-Bakenda (1993) used the content analysis of interviews with 60 Quebec entrepreneurs to operationalize the vision construct. Interview content was coded for three vision attributes:

- 1) Expression: to what extent the vision was clear and precise
- 2) Diffusion: to what extent others knew of the vision
- 3) Concretization: to what extent the vision had already been operationalized

The scores on these attributes were then added together to give a global score which the authors termed vision “manifestation.” Results, however, did not indicate a linear relationship between vision manifestation and performance. Instead, the authors found a relationship more like that of an inverted “U” shape — a possibility alluded to earlier in section 2.2.3.

Carrière utilized in-depth interviews with 30 firm owners in the sawmill sector of Quebec to examine the relationship between vision and decision-making. An analysis of the aggregate visions of the entrepreneurs revealed three main areas of focus within the industry. At the level of the individual decision-maker, each visionary framework contained

4.1 strategic dimensions. Of the 10 strategic dimensions identified in total across the sample, two dimensions concerned profitability, four dealt with internal growth, two were related to external growth and two described the contraction or cessation of operations. A cluster analysis revealed that these dimensions could be used to differentiate between specific strategic niches, thus highlighting the importance of vision to the voluntarist component of individual action. Carrière also found a statistically significant relationship between the past performance of the firm and the strategic vision of the future.

Filion (1990a, 1991) conducted an important study involving in-depth interviews with 51 entrepreneurs in five countries. He identified three categories of vision — emerging, central and secondary. Emerging visions are formed around ideas for products or services, and the selection of an emerging vision provides the basis around which the central vision is built. Central visions may result from one or more emerging visions. Secondary visions supported the central vision and tended to describe management activities needed to implement and realize the central vision.

One of Filion's most interesting findings, and one with important implications for the current study, concerned the distinction between two components making up the central vision. According to Filion, the external component of central vision focuses on the place the entrepreneur wants his products to occupy in the marketplace and includes not only products but also embraces the market or clientele, whereas the internal component focuses on the kind of organization he needs to create in order to achieve this. For some entrepreneurs, the internal component tended to be more important and for others the external component was emphasized; in almost all cases, however, both components were present. Moreover, if one or both components was not clearly formulated, the enterprise tended to be less successful.

In cases where the entrepreneur lacked experience or expertise, secondary visions were defined to a greater extent by the entrepreneur's subordinates and relations system, or family. On the other hand, in cases where the vision was more clearly articulated, the more

it played a key role in deciding the criteria for establishing a relations system. The entrepreneurs interviewed by Filion felt that their internal relations system was more important to the success of the firm than the their external system. The Filion study is important because it offers support for Sooklal's notion of the vision process. In Filion's words, "The building of a relations system is a key element here... The data from this research show that it is not the relations system per se that explains an entrepreneur's success, but rather the relations system built as support for realising a vision." (1991, p. 37). Finally, in a related study (1990b), Filion found that intrapreneurs operate using the same process as entrepreneurs, but work with "micro-visions" (p. 108) rather than visions.

## **2.3 SUPPORT SYSTEMS (a model element)**

### **2.3.1 Social Support**

Social support has been defined as interpersonal transactions that include one or more of the following: affect (expressions of liking, loving, admiration, respect), affirmation (expressions of agreement or acknowledgement of the appropriateness or rightness of some act, statement, or point of view), and aid (transactions in which direct aid or assistance is given, including things, money, information, advice, time, or entitlement) (Kahn and Antonucci, 1980). It is a non-business yet cross-disciplinary area of inquiry, having its roots in clinical medicine (Sarason, Sarason and Pierce, 1990) and subsequently attracting interest from health care professionals in the fields of epidemiology, community psychology and community medicine. Although its focus has been on the association between social support and physical and psychological health (Antonucci and Jackson, 1990), it is also worthwhile examining its potential contribution to the study of support for entrepreneurial visions because of its emphasis on interpersonal transactions involving affirmation and aid. Research on social support did not begin until 1976 (Sarason, Sarason and Pierce, 1990) and therefore has not accumulated a large base of knowledge to draw from, but already there are several issues investigated which bear review; these include methodological considerations, the notion of reciprocity, and the behaviours and consequences associated with the seeking or provision of support.

One of the key questions addressed by research on social support has been the identification of providers of personal support. Here the findings are fairly clear and unambiguous; studies have consistently shown that people go first to friends, relatives, neighbours and lay helpers for information and help, with formal social support services ranking relatively low on the list (Garbarino, 1983). This finding tends to parallel the literature concerning the low level of utilization of formal small business support agencies by entrepreneurs (see, for example, Gibb, 1990). Why this should be the case is not yet

obvious, but research on self-verification processes suggests that people strive to enter and maintain relationships with people who see them as they see themselves (Swann and Brown, 1990).

This last observation may help to shed some light on the propensity of entrepreneurs to rely heavily on their natural support systems, as opposed to the formal system of professional and government support. What is perhaps still unclear, however, is why entrepreneurs appear to utilize natural support systems to a greater extent (relatively speaking) than managers of large firms. Here it is useful to examine Garbarino's (1983) analysis of the social environments of individuals. Garbarino drew upon Bronfenbrenner's (1979) framework of individual environmental systems to explain how social support networks arise and develop. Although Bronfenbrenner posited four types of environments, only two are of interest here. The first category is that of microsystems, which can be understood as the places people inhabit, the people there with them and the things they do together. By adulthood an individual participates in many microsystems. Mesosystems are the relationships between contexts, or microsystems. For adults, these might include relationships among home, peer group, church, work and government. The same number of microsystems can account for different numbers of mesosystems (Garbarino, 1983). Hence, one individual could participate in four microsystems (e.g. home, neighbourhood, church and work) but no mesosystems, whereas another person participating in the same microsystems could be associated with six mesosystems, depending on whether the microsystem pairs were related behaviourally and psychologically.

If one considers the situation of the career manager versus the entrepreneur, even if they both inhabit the same number of microsystems (and this may be a questionable assumption due to professional and organizational pressures on the manager, such as membership in professional and trade organizations, community involvement, training opportunities and conventions, etc.), one would expect the manager to be associated with a larger number of mesosystems due to the social pressures and richer opportunities for

overlap and relationships between microsystems. This would seem to be particularly true for the entrepreneur at start-up, when the "work" context still lacks structure and is weakly defined. Moreover, a significant proportion of the activities (e.g. research, analysis) tend to be solitary in nature during the start-up stage, and a peer group is unlikely to evolve until the venture actually proceeds. Consequently, the manager's "natural" support network is likely to contain a higher proportion of professional and formal sources of support than that of the first-time start-up entrepreneur.

Early in this section it was established that individuals are more likely to obtain support from natural support networks. There is at least preliminary evidence to suggest that, within the natural support network, the type of support received may vary, depending on the source. Research by Willmott (1987) found that men were more likely than women to give advice or practical help, with the advice often being related to professional expertise. Social class also seemed to be an important determinant of the type of support provided, with middle-class men more likely to provide advice than working-class men, the latter showing a greater propensity to provide practical help. Unfortunately, the sample size was small and tests of statistical significance were not undertaken.

Although gender and social class may be important influences on the type of support provided, it appears that the type of relationship itself (e.g. relative versus friend) may not be a good indicator of the degree of support actually provided. From a random survey of 419 residents of two Dutch municipalities, Van Tilburg (1990) concluded that the content of the relationship (i.e. in terms of positive, emotional and instrumental content) was a significantly better indicator of amount of support than was the type of relationship. It should be noted that in this study the amount or intensity of support was operationalized using the single question: "How supportive is your relationship with him/her?" In addition to being overly subjective, this measure can be criticized for being rather ambiguous; it is not at all clear whether the question refers to support provided to the respondent, or by the respondent, or both. In the current study, the extent of support provided will be

operationalized by a more objective measure, consisting of the number of different types of support actually received.

Most research concerning social support has relegated the recipient of support to a passive role (Conn and Peterson, 1989). This important assumption implicitly attributes the amount of support received to the presence and strength of the personal support network available to the individual. Results of two studies of 66 undergraduate students at a U.S. university (ibid), however, provide preliminary evidence that this assumption should be questioned; Conn and Peterson's findings indicated that subjects who reported that they sought support from others also perceived that social support was available, and that people reporting a tendency to seek support also expressed a positive outlook about themselves (high esteem and self-efficacy) and about the consequences of seeking support.

Taken together, Conn and Peterson's findings suggest that the active seeking of support may be an individual difference, with some people more psychologically predisposed to actively seek support than others. This appears to be a highly significant finding, even though the supporting data is scanty, because it implies that the methodology of network analysis, where the unit of analysis is the structure of the individual's social network, may not be an accurate indicator of support actually received. Moreover, there is no discernible reason why the same would not be true in the case of entrepreneurs. It would therefore seem prudent for researchers to make a clear distinction between the potential availability of support (i.e. the individual's personal network) and support actually received.

The concept of reciprocity has received much attention in anthropology (Pryor and Graburn, 1980) and, according to Antonucci and Jackson (1990), is important to understanding how social support operates. Theories of exchange relationships have generally maintained that relationships should be reciprocal, partly due to the high ethical value placed on reciprocity, and partly because it has been associated with social stability



(Pryor and Graburn, 1980). Although most theories of exchange consider reciprocity as forming the basis of a healthy relationship, there has been recognition that reciprocity might not be immediately evident in a transaction, either because intimate and long-term relationships may permit a longer time frame within which equivalency is assumed or expected (e.g. Wentowski, 1981), or because part of the balance of the exchange may be intangibles such as status or territorial rights (Leach, 1951).

Despite the forgoing, there is some early evidence that tends to disconfirm the notion of reciprocity. It appears, for instance, that reciprocity may vary depending on culture. In a large scale study involving three data sets in two countries, Antonucci and Jackson (1990) found that whites showed a marked lack of reciprocal relationships as compared with blacks, and further differences in the French data set suggested possible cultural differences in how support is construed.

More striking evidence comes from a study by Pryor and Graburn (1980) utilizing ethnographic data on 1,250 instances of exchange collected during over 300 visits to every household in the Inuit community of Sakluk, located in the Canadian north near Hudson Bay. The overwhelming conclusion drawn from this analysis was that exchange among the Inuit was not balanced, and that the imbalances were related systematically to certain variables, including gender, marital status and income. Importantly, the exchanges did not seem to be balanced by a reverse flow of the "invisibles" or intangibles posited by Leach; the authors found that none of the variables indicating prestige, family status, political power, etc. were related to exchange imbalances, even after conducting tests for correlations between these variables and direct measures of prestige and status.

Overall, the research on reciprocity as it concerns support does not seem to provide a clear indication of whether relationships should be regarded as reciprocal, particularly in the context of support for entrepreneurial vision. This latter situation should be regarded as fundamentally different from personal social support due to the

presence and influence of a potentially powerful and compelling vision. Assuming the vision has communicated effectively, the vision itself, the values underlying it, and the potential for active personal involvement in the shaping of the vision all constitute powerful motivating factors not present in the more narrow context of social support. Unfortunately, there is virtually no guidance available from the literature concerning support relationships associated with entrepreneurial visions. In the current study, this does not pose a significant problem because the issue of reciprocity in social support has primarily been associated with the issue of health in relationships; neither the health of the relationship nor the personal health of the entrepreneur are subjects of study in the current research.

Recalling that much of the literature on social support has relegated the recipient to a passive role, it is not surprising therefore to find that many of the methodological techniques used in social support research have been taken from social network analysis. Van der Poel (1993) identifies four methods of distinguishing personal networks: the interaction approach, the role relation approach, the affective approach, and the exchange approach. These approaches, and their associated weaknesses are summarized in Table 2.3 below.

From the table it is apparent that both the interaction approach and the role relation approach are ill-equipped to identify networks associated with support because they largely ignore the content of relationships. The affective approach is suited to capture support, but this method involves certain trade-offs. Its failure to recognize support from less intimate sources seems to be an artifact of one particular sub-technique, where the respondent is asked to identify close relationships; this shortcoming is not necessarily associated with the other primary method of operationalization within the affective approach, which involves asking people to identify the relationships considered especially important.

Table 2.3  
Approaches to Delineating Personal Networks

Approach	Primary Characteristics	Weaknesses
1. Interaction	- records contacts within a specified time period	- fails to take into account the content of the relationship - is (therefore) too general to serve as a criterion for support
2. Role Relation	- emphasizes the culturally circumscribed role relationship between two people	- ignores the large variation between individuals in the actual content of these relationships - overlooks relationships which are not defined normatively but are nevertheless supportive
3. Affective	- emphasizes the subjective value of a relationship - asks people to name the persons who are especially important to them or with whom they have a close personal relationship	- evaluations of importance are subjective; researcher does not know the criteria being used to judge importance - ignores the possibility that less intimate relationships can also be supportive
4. Exchange	- focuses on the people who are sources of rewarding interactions	- ignores potentially supportive relationships in which no recent supportive interactions have occurred - ignores the "main effect" of relationships on personal health, which refers to the knowledge alone that there are a number of persons one can turn to when help is needed

Table compiled from information in Van der Poel (1993)

According to Van der Poel, having the individual him/herself determine the importance of a relationship is the main advantage of the affective approach, but at the same time a significant disadvantage. Clearly, if importance were to be determined by the researcher, very extensive data would be required, probably involving detailed case histories; even if such data were available, however, the researcher still runs a significant risk of imposing his/her own values in attempting to assign importance to a particular source. On the other hand, the disadvantage of having the individual assign importance is that the researcher may not be aware of the criteria being utilized. This could result in a situation where people use normative expectations to judge importance when the researcher actually may be interested in the emotionally supportive content of the

relationship (ibid). If this problem were addressed, the affective approach would seem to hold considerable potential for identifying support networks.

The exchange approach is generally considered the most appropriate approach for identifying networks of support. (Van der Poel, 1993; Wilmott, 1987). In the words of Van der Poel, "...the conclusion must be that if one is interested in delineating a clearly and objectively defined part of the personal network, in this case the personal support network, the exchange approach is the most promising one... This conclusion is generally supported in the literature..." (p.53). Nevertheless, this approach has been under-utilized in past research because it tends to be complex and time-consuming (ibid).

The main criticism of this approach is that it omits potentially supportive relationships, focusing instead on those relationships which actually provided support. Two observations can be made here. First, the purpose of the research should dictate whether or not this is a problem; where the interest lies in actual support rather than potentially supportive relationships, the omission of potential support can be considered an advantage of the method (a similar point was made earlier in this section concerning the need to distinguish between the potential availability of support and support actually received). Second, the omission of potentially supportive relationships is viewed as problematic in the literature dealing with social support because the network of potential support is believed to contribute to an individual's personal health; interestingly, research on social support indicates that the perception of the availability of social support is more closely related to personal health than is received support (Sarason, Sarason and Pierce, 1990). While acknowledging that this is indeed an important consideration in the context of social support, this latter problem does not appear to be relevant to the current research where the health of the entrepreneur is not a subject of investigation.

An important disadvantage of the exchange approach not identified by Van der Poel is that this method includes all transactions involving support and assumes that each

is of equal worth to the individual. By combining the affective and exchange approaches to the operationalization of the support network (i.e. applying criteria of both exchange and importance), the current research attempts to capitalize on the main benefits of both methods, while minimizing the drawbacks of each. The specification of the importance criterion should serve to ensure that appropriate weighting is placed on only those transactions which are non-trivial and valued by the entrepreneur. The simultaneous specification of the exchange criterion serves to ensure that the individual applies the same criterion as the researcher.

Other research findings possess practical implications for research on support. First, it may not be necessary to examine more than the person's closest relationships (Sarason, Sarason and Pierce, 1990); House and Kahn (1985) recommend that gathering data on more than 5-10 individuals in the subject's network yields rapidly diminishing returns. Second, studies which have compared reports of support by both the receivers of support (received support) and the givers of support (enacted support) have found only a moderate level of agreement (50-60 percent), with givers reporting that they gave more support than the other person reported as received (Sarason, Sarason and Pierce, 1990). This highly important finding presents the researcher with a dilemma as to which measure to use; typically, however, information on support is gathered from the self-report of the recipient (*ibid*). Although not discussed by the authors, it would be expected that reporting discrepancies between givers and receivers of support would be more severe in situations where all transactions are included (this appears to be the case in most social support research; in the case where the criterion of importance is also imposed, one would expect more congruence among reports, since these transactions should be more salient to the individuals involved).

This section has reviewed the literature on social support with a view to identifying themes and research findings which have potential relevance to research on support for entrepreneurial visions. It is concluded that some of the research on social support is

indeed applicable, having implications for both theory development and research methodology. The major implications can be summarized as follows:

- an expectation that people will rely first and foremost on their natural systems of support
- an expectation that the natural support systems of entrepreneurs will contain a (relatively) low proportion of professional and formal sources of support
- an expectation that type of support may vary by gender and social class, whereas amount of support may depend on the content of the relationship
- a recognition that reciprocity should not be assumed in supportive relationships
- a recognition that static personal network structures may be ineffective measures of support received because they emphasize the potential availability of support while ignoring the possibility of active seeking of support
- a recognition that affective and exchange approaches are both suitable methods for the operationalization of support networks, and that a combination of the two may be desirable
- a caution that significant differences may be found between the reports of givers and receivers of support

### **2.3.2 Small Business Support**

- i. Formal or Purposive Support
- ii. The Scope of Natural Support
- iii. Information and Advice
- iv. Non-financial Assistance by Venture Capitalists
- v. The Board of Directors
- vi. Summary

This section reviews theory and research concerned with support for small businesses. The literature reviewed encompasses a fairly broad spectrum of topics, but can be roughly categorized as follows:

- i) works examining the role of formal government-sponsored and private support agencies established to provide assistance to small firms
- ii) descriptive and empirical works identifying the scope or range of support and assistance utilized by entrepreneurs
- iii) research seeking to identify and evaluate the importance of information sources and advice utilized by start-up entrepreneurs
- iv) studies aimed at identifying and assessing the non-financial assistance provided to funded firms by venture capitalists
- v) research examining the composition and role of the board of directors in small firms

Small business literature that specifically emphasizes networks or vision-based support has been dealt with in separate sections of the literature review, and therefore is deliberately excluded from this section.

#### **Formal or Purposive Support**

The term 'support' in the context of small business is often associated, both in the literature and in everyday usage, with the support services provided by government-sponsored and private agencies. The totality of support services available to the entrepreneur is sometimes labeled an "enterprise support system," and generally refers to formal agencies of support, including government, the private sector, voluntary

organizations and public agencies (Cannon, 1991). This approach to support has been summarized by Sarder (1995):

The term 'support services,' in the context of SME development, usually refers to a number of assistance measures specially set up for the initiation, growth and development of this sector. This might range from the most visible direct financial support (assistance) such as loans, grants, etc. to invisible help such as counselling. (p 19)

Gibb (1990) refers to this type of support as 'purposive,' defining it as follows:

...a service (usually public or publically subsidised) specifically set up to offer a range of services to small business. These services might cover software (information/ advice, counselling/consultancy, training/education) and hardware (provision of special finance, premises and workshops and help in kind). (p. 4)

Recognizing that although the notion of purposive support might be sufficient for the policy maker concerned with intervention, Gibb argued that this definition is unnecessarily restrictive and of limited practical use. As a more useful alternative, he offered the term 'natural' support network, which refers to "the total network of contacts, individuals and organisations with whom the business deals, in effect the 'task environment.'" (p. 4-5). Although Gibb's latter view of support seems appropriate in the context of small firms, this conceptualization of support is still too narrow to encompass entrepreneurial support because it excludes the potential for support from internal stakeholders of the firm, such as employees, and (depending on how the boundary of the firm is defined) directors and shareholders of the business. Thus, it seems useful to make a distinction between the natural support networks of firms and the natural support networks of entrepreneurs.

Various authors have developed classifications of purposive support services; these classifications provide an indication of the range of types of support typically offered by public sector agencies. After reviewing the classifications found in the literature, Sarder (1995) concluded that a functional classification is utilized most often, with a primary



distinction made between financial versus non-financial services. Table 2.4 provides a breakdown of the services within these categories.

Table 2.4  
Purposive Support Services\*

<u>Financial Services</u>	<u>Non-financial Services</u>
<ul style="list-style-type: none"> <li>- loans</li> <li>- credit</li> <li>- grants</li> <li>- loan guarantees</li> </ul>	<ul style="list-style-type: none"> <li>- management training</li> <li>- entrepreneurship education</li> <li>- technical assistance</li> <li>- marketing help</li> <li>- information</li> <li>- extension and counselling</li> <li>- infrastructural facilities e.g. access to power, gas, land</li> </ul>

\* adapted from information in Sarder (1995)

Despite the diversity of services available from the public sector, it is unlikely that purposive support by itself is sufficient to ensure the viability of an enterprise. From the results of an in-depth investigation of small firm owner-managers and public and private support agencies in Dhaka, Bangladesh, Sarder (1995) concluded that overall the effect of assistance (as measured by growth in sales, employment and value added) is low, and that most firms do not receive the services they need or want. Financial assistance did, however, seem to have a considerable effect on the survival, start-up process, production and sales turnover of small firms. Good and Graves (1993) reported similar findings for Manitoba firms; only 1 firm in 10 sought advice from government sources, and of those that had, only a low proportion indicated that they had found the advice helpful.

Gibb (1995) argues that most small business owners will not deliberately seek formal sources of support unless they are introduced to them through their existing informal networks in which they have developed confidence and trust. The personal network of the owner-manager can be considered as a series of five layers, comprised of: 1) close friends, relatives, family; 2) close and trusted business acquaintances; 3) professional advisors with whom s/he must deal; 4) commercial contacts (e.g. customers, suppliers); 5) the purposive support network. Small business managers will prefer to

obtain advice and assistance from individuals located in the 'inner' layers (i.e. those layers which are nearest to him/her, such as close friends, family, trusted business acquaintances) because they are people with whom the owner can identify, they can be easily accessed, are known to be relevant, can be used as and when required, will be perceived as empathetic, will tend to respond immediately, will cost little, and are considered trustworthy (ibid.). Only when the closer network is incapable of satisfying the owner's needs is the owner likely to move to the next layer for help.

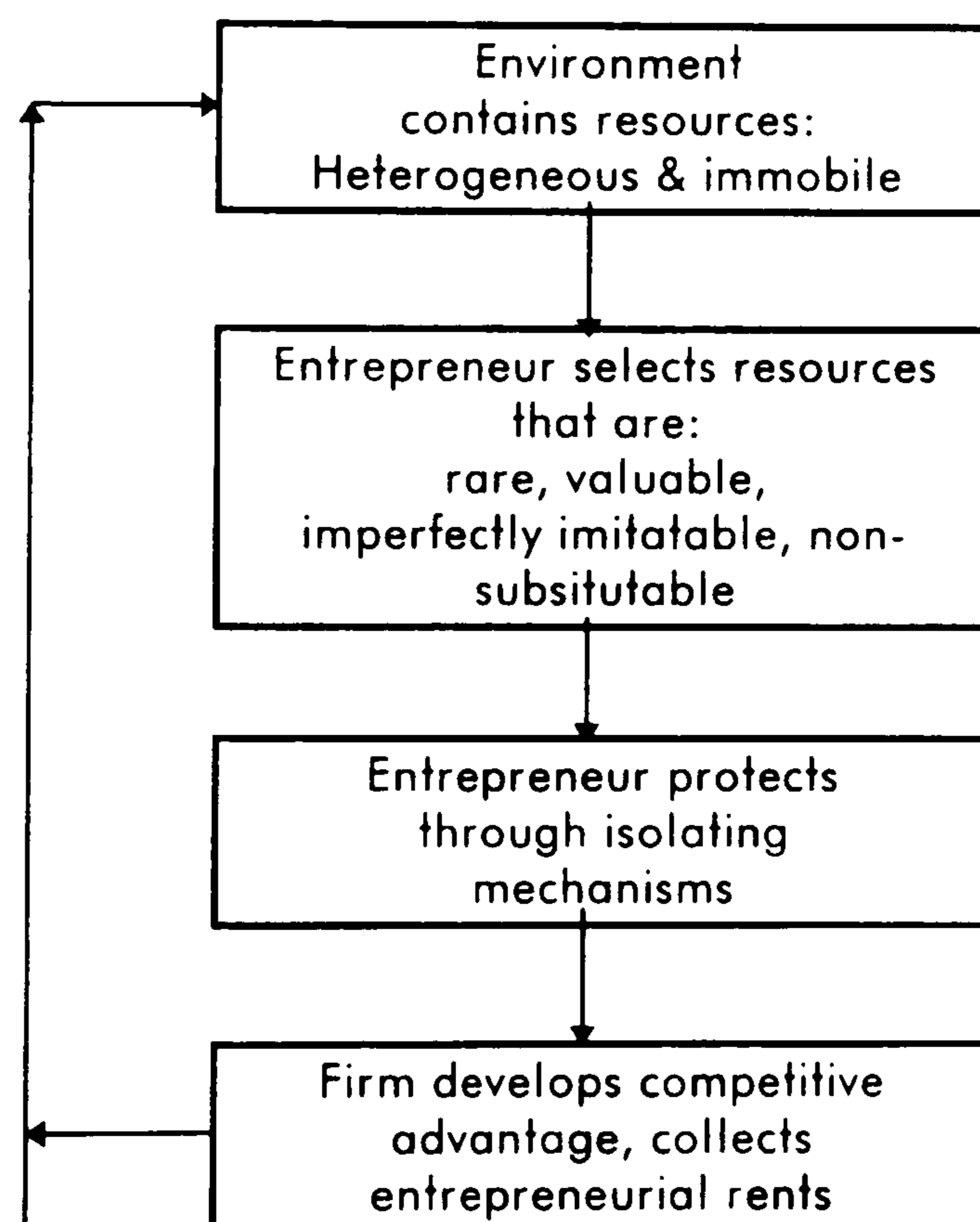
There have also been arguments suggesting that intervention by purposive support agencies may even be harmful to the long-term health of the enterprise. Drawing on the population ecology perspective, Flynn (1993) has provided forceful arguments that public sponsorship of firms buffers the organization from environmental pressures, thereby minimizing the opportunities for requisite learning and the purposeful variation necessary to adapt to the relevant environment. Unless sponsorship is accompanied by a complementary focus on helping the firm to create self-organizing systems, new firms may become over-dependent on sponsorship, and ultimately more vulnerable (ibid.). Research by Hanlon and Barnes (1992) indicated that small firms in Atlantic Canada which had received government support were less successful than firms which had not, although the authors suggested several alternate explanations for these findings.

### **The Scope of Natural Support**

The consideration of the total or natural support network of the entrepreneur is an important but neglected topic in the small business literature. Acquiring resources is a basic entrepreneurial task (Bhide and Stevenson, 1992; Starr and MacMillan, 1990) yet few authors have addressed the issue of support from a global perspective. Of the few works which do consider entrepreneurial support in its totality, two basic perspectives can be identified. The first view, and the one which tends to be dominant in the literature (see, for

example, Cooper, Gimeno-Gascon and Woo, 1994; Falemo, 1989; Starr and MacMillan, 1990), focuses on the entrepreneur's role as an assembler and organizer of resources in pursuit of an opportunity (Stevenson, 1989), and is most consistent with the resource-based view of entrepreneurship (Dollinger, 1995). The resource-based theory recognizes six types of resources: financial, physical, human, technological, reputational and organizational (ibid.). Within this framework, entrepreneurial vision would be valued as an organizational resource. A simplified resource-based model of entrepreneurship is depicted in Figure 2.3 below.

Figure 2.3\*  
A Resource-Based Model of the Entrepreneurship Process



\* adapted from Dollinger (1995, p. 39)

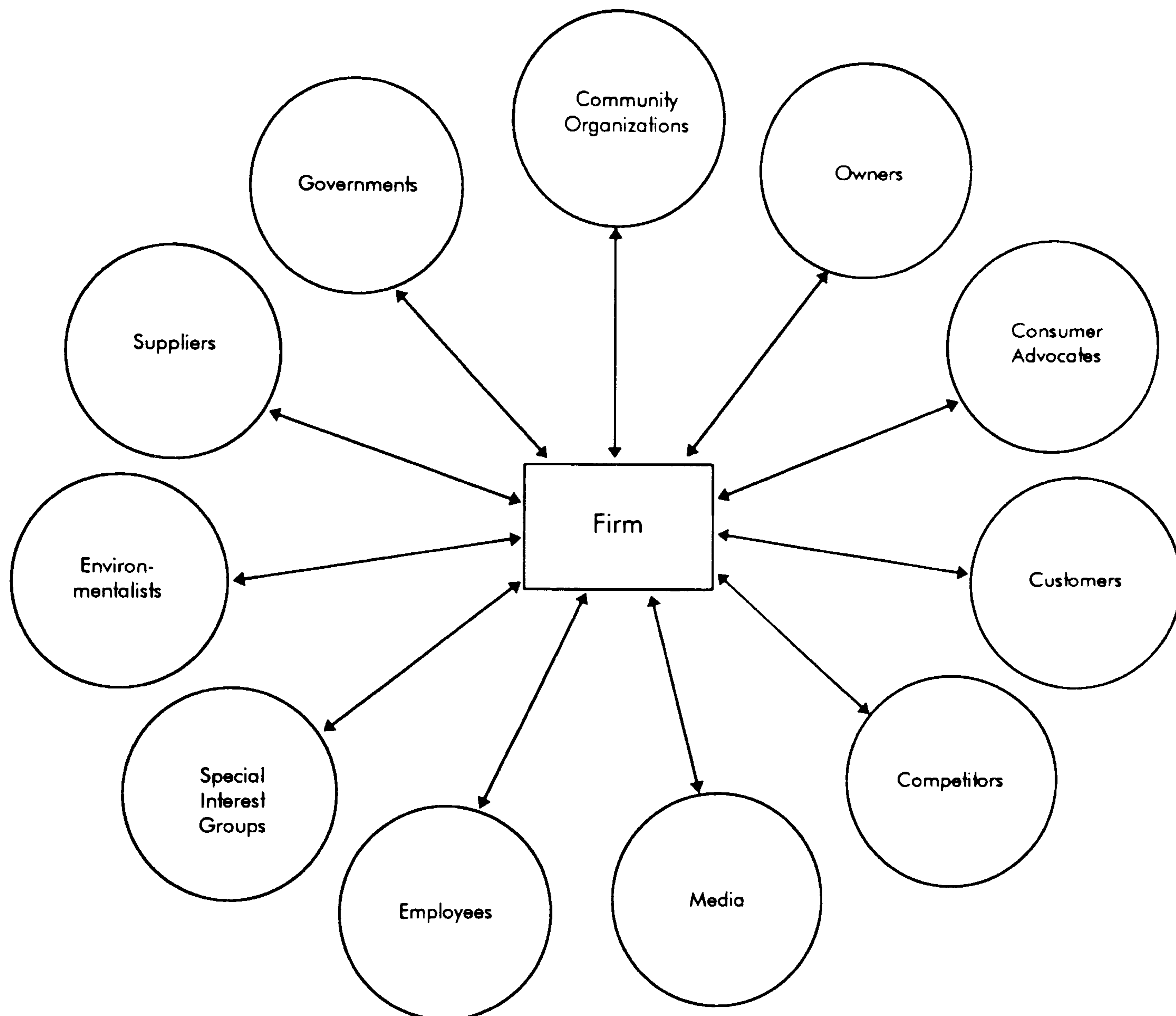
Firms with stronger resource bases, including intangibles such as preparation and knowledge, are in a better position to survive the consequences of environmental jolts and bad decisions (Cooper, Gimeno-Gascon and Woo, 1994). In the case of new firms, initial resources influence the range of alternatives available to the entrepreneur, subsequent firm strategies which bear upon the capabilities of the firm, and may act as a buffer against the liabilities and smallness (ibid.). Therefore, the degree to which the entrepreneur is

successful in building an effective resource base should influence firm performance in a positive direction.

The second major perspective applied to the analysis of natural support systems has been the stakeholder approach (see, for example, Bhidé and Stevenson, 1992; Aitkins and Lowe, 1994). The term “stakeholder” first appeared in the management literature in 1963 and was originally defined as “those groups without whose support the organization would cease to exist” (Freeman, 1984, p. 31). The concept has since been applied to both the discipline of strategic management and research on corporate social responsibility. Because the former emphasizes the interface between the firm and the environment, entrepreneurship research has drawn on the stakeholder framework as it applies to strategic management.

The concept of stakeholder has evolved since its early origins, and is now defined more broadly as “any group or individual who can affect or is affected by the achievement of an organization’s purpose” (ibid., p. 53). A typical stakeholder view of the firm is shown in Figure 2.4. Figure 2.4 is likely more appropriate for a large firm, however. It should be noted that specific stakeholders and stakeholder groups will vary for each firm, although some may be considered generic (e.g. customers, suppliers). The figure also represents a simplified case; each category is likely to contain sub-categories of stakeholders. Employees, for example, are not all alike and may have different stakes in the business, depending on position, the presence of different unions, compensation and degree of ownership, and whether or not the employee is a family relation to the entrepreneur.

Figure 2.4  
A Stakeholder View of the Firm\*



\* from Freeman (1984, p. 25)

Both the resource-based view and the stakeholder perspective provide useful approaches to the study of small business support systems. The primary distinction appears to be the starting point of analysis, with the resource approach emphasizing the resources acquired by the firm and the stakeholder framework beginning with the identification of significant individuals and groups. Put another way, the resource view seems best-suited for analyzing the content of transactions, whereas the stakeholder approach focuses on relationships. Because of these different emphases, a focus on one perspective may lead to the omission of certain sources of support or the identification of

irrelevant sources. For instance, the resource view frequently neglects customer relationships as potential sources of support, and may not consider moral support and encouragement provided to the entrepreneur as a resource relevant to the firm. The stakeholder framework, on the other hand, would normally include stakeholders with whom the firm has an adversarial relationship and consequently may be superfluous in terms of entrepreneurial support.

Among authors, Vesper (1994) has been perhaps the most conscientious and explicit in organizing and identifying support for entrepreneurs. Although his treatment lacks a theoretical base, he systematically considers the importance and potential contribution of help from insiders (partners, suppliers) and outsiders (suppliers, professionals [lawyers, accountants, bankers, insurance brokers, advertising specialists, industrial and graphic designers, consultants], directors, shareholders, trade associations, government, universities and incubators), as well as recognizing the potential for support from the entrepreneur's social network. Vesper also provides a normative framework for the analysis of support requirements, organized primarily along functional lines.

Entrepreneurs appear adept at securing resources at minimum cost (Starr and MacMillan, 1990). This may not only be necessary due to the resource constraints of the entrepreneur, but also strategically sound. Often the exact resources needed may be unknown due to uncertainty (*ibid.*); obtaining resources at lower cost can help to ensure that surplus cash is available to accommodate unexpected resource needs. Obviously, minimizing the investment also serves to minimize the risk faced by the entrepreneur.

According to the resource-based view as exemplified by Starr and MacMillan (1990), many entrepreneurs utilize social transactions, rather than economic exchange, to secure critical assets at zero or low cost. These social transactions are based on social assets exploited by the entrepreneur, including friendship, liking, gratitude, trust and obligation. The stakeholder approach (Bhide and Stevenson, 1992) suggests that designing

the enterprise to minimize stakeholder exposure may make it easier to solicit stakeholder support, and that selecting stakeholders who are most capable of and willing to bear risk may further facilitate the process of resource acquisition.

Nine descriptive and empirical studies concerning natural support are summarized in Table 2.5. The summary table provides a clear indication that the focus of most studies has been on outsider assistance, with two-thirds of the studies focusing exclusively on assistance provided by people external to the firm. The vast majority of these can be best classified as possessing a resource-based perspective, although in most cases the perspective has not been explicitly identified and must instead be inferred; the study by Milne and Thompson (1987), while dealing with external assistance, is best classified as exploratory rather than possessing a particular theoretical perspective. Three of the studies considered both internal and external support; of these, one adopted a stakeholder approach (Aitkens and Lowe, 1994), one was atheoretical (Case, 1989), and one utilized a resource-based perspective (Cooper, Gimeno-Gascon and Woo, 1994).

Although the Cooper, Gimeno-Gascon, Woo resource-based study did consider both insider and outsider support, it should be noted that this study contained only one measure of insider support, which was operationalized as the number of partners. Perhaps even more striking in Table 2.5 is the absence of any studies whatsoever focusing exclusively on internal support. While the resource approach traditionally has not ignored internal resources (e.g. the knowledge and experience of the entrepreneur), it can be seen that (for some unapparent reason) support from insiders has tended to be neglected in the research literature. As noted by Reuber, Dyke and Fischer (1990), the expertise pool of a venture is not completely dependent on the experience of the founder and can include alternate sources of experientially acquired knowledge, such as teams, networks and consultants. Overall, it can be concluded that more studies of internal support networks and natural support networks in their totality are sorely needed.

Table 2.5  
Research Findings Concerning Natural Support

Study	Sample Description	Research Method	Related Findings
Aitkens & Lowe (1994)	<ul style="list-style-type: none"> <li>- n = not reported (146?)</li> <li>- small firms with &lt; 100 employees</li> <li>- mfg., service industries</li> <li>- U.K.</li> </ul>	survey	<ul style="list-style-type: none"> <li>- measured stakeholder involvement in the target setting/planning process for 8 categories of stakeholder: family, other mgrs., employees, professional advisors, investors, creditors/bankers, customers, suppliers</li> <li>- mean # of stakeholders involved = 4.4</li> <li>- level of involvement was measured by a summated rating scale</li> <li>- most frequently involved were other mgrs., followed by family, employees, professional advisors, customers, creditors, investors, suppliers</li> <li>- a statistically significant relationship was found between technological turbulence and stakeholder involvement</li> <li>- associations between level of stakeholder involvement and the following variables were not statistically significant: age of firm, industry, perception of external turbulence, size of firm, mgt. quality</li> </ul>
Case (1989)	<ul style="list-style-type: none"> <li>- n = 665</li> <li>- firms which had appeared on Inc. 500 list since 1982</li> <li>- median revenues \$7.7 million</li> <li>- multiple industries</li> <li>- U.S.</li> </ul>	survey	<ul style="list-style-type: none"> <li>- no significance tests conducted</li> <li>- sources of help for developing the founder's idea include potential customers (52%), spouse (51%), partners (50%), colleagues in same industry (44%), professional advisors (26%), potential suppliers (29%), potential backers (19%)</li> </ul>
Cooper, Gimeno-Gascon & Woo (1994)	<ul style="list-style-type: none"> <li>- n = 2994</li> <li>- avg. age = 11 mo.</li> <li>- multiple industries</li> <li>- U.S.</li> </ul>	survey (several)	<ul style="list-style-type: none"> <li>- number of partners is a significant contributor to high growth</li> <li>- use of professional advisors did not contribute significantly to either marginal survival or growth (p &lt; .10 for marginal survival)</li> </ul>
Cromie (1991)	<ul style="list-style-type: none"> <li>- n = 68</li> <li>- most firms 4-5 yrs old</li> <li>- mfg, service</li> <li>- Belfast area, U.K.</li> </ul>	interview	<ul style="list-style-type: none"> <li>- no significance tests conducted</li> <li>- most frequently cited sources of assistance for problems are: support agencies (81%), accountant (29%), business contact (24%), family or friend (19%), technical agency (13%), bank (12%), none (6%)</li> </ul>
Falemo (1989)	<ul style="list-style-type: none"> <li>- n = 31</li> <li>- mostly SMEs</li> <li>- mfg.</li> <li>- Norbotten county, Sweden</li> </ul>	interview	<ul style="list-style-type: none"> <li>- no significance tests conducted</li> <li>- 26 mgrs. identified 1 or more external persons as having channelled resources for either marketing or product development</li> <li>- the majority considered the resources channelled by externals to have been of great importance</li> <li>- 84% of externals belonged to a commercial organization</li> <li>- most externals were located in the same community as the firm; externals outside the county often channelled resources of great importance</li> <li>- most resources transferred by externals were intangibles; often a transfer of competence</li> <li>- over 75% of channelled resources were purchased (i.e. convenience-based)</li> <li>- the distinguishing characteristic of externals was skill; the external is a network actor more than an entrepreneur</li> </ul>



Study	Sample Description	Research Method	Related Findings
Good and Graves (1993)	<ul style="list-style-type: none"> <li>- n=160</li> <li>- new firms: since Jan. 1986</li> <li>- multiple industries</li> <li>- Manitoba</li> </ul>	survey	<ul style="list-style-type: none"> <li>- owners of failed versus operating firms contacted a similar number of different sources (no significance test)</li> <li>- government advice was perceived as less helpful (no significance test)</li> <li>- failed firms showed a greater tendency to use lawyers and professionals (lawyers and management consultants) whereas surviving firms tended to utilize suppliers, potential customers, banks. (no significance test)</li> </ul>
Jarillo (1989)	<ul style="list-style-type: none"> <li>- n=1902</li> <li>- publicly traded</li> <li>- median firm sales \$70 million</li> <li>- 233 industries</li> <li>- U.S.</li> </ul>	Compustat database	<ul style="list-style-type: none"> <li>- fast-growing firms make more use (65%) of external resources (as measured by sales/assets) than average (<math>p &lt; .05</math>); results are stronger for small firms</li> </ul>
Milne & Thompson (1987)	<ul style="list-style-type: none"> <li>- n=73</li> <li>- new, promising businesses</li> <li>- multiple industries</li> <li>- Scotland, N.E. England, E. Midlands</li> </ul>	interview	<ul style="list-style-type: none"> <li>- no tests of significance conducted</li> <li>- many owner-mgrs. actively sought to create a "support team" of advisors who were in an informal relationship with themselves rather than in a formal relationship with the business</li> <li>- a much smaller group of founders was highly individualistic</li> </ul>
Smallbone, North and Leigh (1993)	<ul style="list-style-type: none"> <li>- n=306</li> <li>- firm age <math>\geq 10</math> yrs.</li> <li>- 8 mfg. sectors</li> <li>- 3 areas in England</li> </ul>	interview	<ul style="list-style-type: none"> <li>- no tests of significance conducted</li> <li>- 45% of firms made no use of external assistance in 10 years</li> <li>- paid consultants were most commonly used (25%), followed by public agencies (21%), banks &amp; accountants (17%), informal sources (9%), trade assoc/chambers of commerce (8%), other (6%)</li> <li>- few firms regularly used assistance from any source; avg. level of reported contacts for firms using support = 2 per firm</li> <li>- informal sources tended to be used as a mentor or confidante for key decisions, or source of specialist advice (at low or no cost)</li> <li>- mgrs. were often able to point to tangible benefits from support from informal sources</li> </ul>

A second important observation that can be made from reviewing the summary of research is that the majority of studies did not conduct statistical tests of significance. Although the affirmation of statistical significance does not ensure good research, nevertheless it is generally considered an important indicator of the plausibility of the initial hypothesis. The absence of such tests may have two equally plausible (and perhaps equally applicable) explanations. First, it is clear that several of the studies are exploratory in nature; this indeed may be very appropriate given the obvious shortage of research concerning entrepreneurial support. Secondly, it appears that the study of entrepreneurial support in a holistic sense is a difficult and labour-intensive undertaking. Most of the empirical studies listed adopted a narrow perspective of support, and in some cases appear only tangentially relevant. (It should be noted that literature addressing several relevant sub-topics is explored in other sections.

There is now indirect evidence that support is positively related to new venture performance. Cooper, Gimeno-Gascon and Woo (1994) found that measures of initial human and financial capital were useful predictors of both survival and growth, although (as mentioned above) most of the measures of human capital were based on qualities of the entrepreneur. Findings by Jarillo (1989) indicate that high growth firms rely more on external resources, and that this phenomenon is even stronger in the case of small firms.

According to Falemo (1989), the role of persons external to the firm is to channel resources to the firm. His study of 31 Swedish SME's indicated that in the case of marketing and product development for manufacturing firms, intangible resources tend to be the dominant resources channelled (62% for marketing, 64% for product development), and that the transfer of competence is the main benefit sought by entrepreneurs. Interestingly, over 75 percent of channelled resources were purchased (i.e. convenience-based) but it should be noted that the sample was drawn from existing, as opposed to new, firms.

Not all studies have found external support to be important to small firms. Research by Smallbone, North and Leigh (1993) on mature English firms revealed that 45 percent of firms had made no use of external assistance in 10 years, and those that did tended to do so very infrequently. Nevertheless, support received from informal sources tended to be used for key decisions and was frequently reported as having tangible benefits; this did not seem to be the case for the other forms of support. One is tempted to attribute the low rate of reliance on outside assistance found in this study to the fact that the sample consisted of mature firms; it could be, for instance, that the importance of outside support is less important to firms which have matured or which are operating in a stable environment. Contrary findings are reported by Aitkens and Lowe (1994), however, Their study of 146 U.K. firms found that the relationship between level of stakeholder involvement in the planning process and firm age was not significant, and that the mean number of stakeholders involved was 4.4 per firm. Here it must be noted that, because of the stakeholder perspective, insiders were also included, thus making the results difficult to compare; this latter observation seems especially pertinent since the most frequently involved stakeholders were reported to be insiders and family.

Similar variation is evident from Table 2.5 concerning the importance of different sources of help. Overall, it is difficult to determine whether such differences are attributable to contingencies, such as industry and firm stage of development, or differences in methodology. Although there is some initial evidence suggesting the general importance of support, beyond this it is difficult to draw firm conclusions based on the few studies appearing in this section.

### **Information and Advice**

Information is a key resource for a new venture (Cooper, Folta and Woo, (1995) and consequently has been the focus of several research studies. Seven studies were selected for review in this section; these are summarized in Table 2.6. It should be noted that although

Table 2.6  
Summary of Research Addressing Knowledge-Based Support

Study	Sample Description	Research Method	Related Findings
Chrisman (1989)	<ul style="list-style-type: none"> <li>- n=123</li> <li>- pre-venture SBDC consulting clients</li> <li>- multiple industries</li> <li>- one U.S. state</li> </ul>	survey	<ul style="list-style-type: none"> <li>- Small Business Development Centre consulting clients perceive strategic assistance to be more valuable than administrative or operating assistance (several tests of significance)</li> </ul>
Chrisman & Carsrud (1991)	<ul style="list-style-type: none"> <li>- n=139</li> <li>- pre-venture SBDC consulting clients</li> <li>- multiple industries</li> <li>- one U.S. state</li> </ul>	survey	<ul style="list-style-type: none"> <li>- SBDC services are equally accessible to minorities &amp; non-minorities</li> <li>- minorities &amp; non-minorities possess identical assistance needs</li> </ul>
Cooper, Folta & Woo (1995)	<ul style="list-style-type: none"> <li>- n=1176</li> <li>- avg. firm age = 11 mo.</li> <li>- avg. firm size &lt; 3 employees</li> <li>- all firms started by founder</li> <li>- multiple industries</li> <li>- U.S.</li> </ul>	survey	<ul style="list-style-type: none"> <li>- considered 6 sources of information: accountants, friends/relatives, other business owners, bankers, lawyers, books/manuals</li> <li>- search intensity based on a summated scale of importance</li> <li>- entrepreneurs with no prior entrepreneurial experience engaged in greater information search with personal sources (family, friends, other business owners) (<math>p=.0001</math>), but not with professional sources</li> <li>- entrepreneurs operating in domains greatly different from their previous ventures were less likely to seek information (<math>p=.014</math>)</li> <li>- inexperienced entrepreneurs engaged in more information search than experienced eprs. when entering fields they knew; no difference when entering a field they did not know well</li> <li>- entrepreneurs who were more confident sought less information</li> <li>- control variables (amount of initial capital, outside investors and full-time partners) were positively related to search, particularly use of professional sources</li> </ul>
Fann & Smeltzer (1989)	<ul style="list-style-type: none"> <li>- n=48</li> <li>- median firm size 20 employees, \$2.5 million sales</li> <li>- multiple industries</li> <li>- 1 U.S. metropolitan area</li> </ul>	interview	<ul style="list-style-type: none"> <li>- considered 8 external information sources: customers, suppliers &amp; vendors, competitors, trade publications, other small businesses, newspapers, trade assoc's, trade shows</li> <li>- customers, suppliers/vendors, competitors and trade publications were the most important sources for both operational decision-making and L/T planning</li> </ul>

Study	Sample Description	Research Method	Related Findings
Kent (1994)	<ul style="list-style-type: none"> <li>- n = 82</li> <li>- managers of retail pharmacy outlets</li> <li>- businesses operating ≥ 4 yrs.</li> <li>- Brisbane, Australia</li> </ul>	survey	<ul style="list-style-type: none"> <li>- advisory services from non-accountants contributed positively to profit and sales growth (p &lt; .05); advice from accountants was weakly related to profits (p = .09)</li> <li>- 52% of sample did not use mgt. advisory services from any source</li> </ul>
Smeltzer, Van Hook & Hutt (1991)	<ul style="list-style-type: none"> <li>- n = 111</li> <li>- 99% with ≤ 17 employees</li> <li>- multiple industries</li> <li>- U.S. (area unspecified)</li> </ul>	telephone survey	<ul style="list-style-type: none"> <li>- considered 12 sources of information: accountant, lawyer, friend/relative, insurance agent, potential customer, banker, supplier, SBA, university, other business executive, private mgt. consultant</li> <li>- quantity of information is dependent on weak ties, but quality of information is not</li> <li>- no relationship between length of preoperational phase and use of weak ties</li> <li>- no relationship between frequency of use and accessibility, informality or richness of sources</li> <li>- positive relationship between # of advisors and length of preoperational phase: shorter preop phase = avg. 2.7 advisors; longer preop phase = avg. 3.5 advisors</li> <li>- most frequent sources: accountants, lawyers, friend/relative, insurance agent, customer, banker, supplier (ordered by decreasing importance)</li> <li>- no relationship between type of advisor used and industry, prior ownership experience, or gender</li> <li>- no relationship between type of source and relative value of information</li> </ul>
Specht (1987)	<ul style="list-style-type: none"> <li>- n = 109</li> <li>- small financial institutions</li> <li>- &lt; 250 employees; mean = 54</li> <li>- age ≥ 2 yrs.; mean = 63 yrs.</li> <li>- U.S.</li> </ul>	survey	<ul style="list-style-type: none"> <li>- personal sources were used more by strategic planning groups with perceived environmental change and complexity, uncertainty for planning and intolerance for ambiguity</li> </ul>

the Chrisman (1989) and Chrisman and Carsrud (1991) studies deal with clients of a government-sponsored consulting service, they have been included in this section because the issue of government sponsorship was not under consideration in the research.

All of the studies reviewed are concerned exclusively with external sources of support, and most tend to view the process of obtaining information as one of purposive search. Two central themes or questions emerge from the literature, the first seeking to identify the variables associated with quantity of support, and the second concerning itself with the variables influencing type of support.

Quantity of support has been operationalized in a variety of fashions, depending on the researcher and the study purpose. The main indicators which have been utilized in support research are number of sources contacted (e.g. Cooper, Folta and Woo, 1995), importance (ibid.), and frequency of contact (e.g. Smallbone, North and Leigh, 1993 from the previous section). In the studies reviewed in the current section which considered the potential for support from multiple sources, type of support was identified using closed-ended questions containing predetermined categories. Since the research perspective in the current section is considerably narrower than that of the previous section, it is not surprising to find that most studies were empirical in nature.

Several variables have been identified as having an impact on the amount of information support sought by the entrepreneur. Cooper, Folta and Woo (1995) found that entrepreneurs operating in domains vastly different from their previous ventures tend to search for information less intensively. This finding was consistent with the authors' original hypothesis that relevant experience should lead to increased information search, with experienced entrepreneurs possessing more elaborate cognitive schema which would, in turn, lead to a more elaborate search process. Results of a study by Smeltzer, Van Hook and Hutt (1991) suggest that the use of weak ties is positively related to information quantity but not quality. Although interesting, the issue of weak ties is considered extensively in the network

literature dealt with in a separate section, and will not be considered further here. No relationship was found between frequency of use and accessibility, informality or richness of sources.

The amount of information sought by the entrepreneur may also be contingent on certain factors. Cooper, Folta and Woo (1995), for example, argue that need for preparation and need for legitimacy, as well as the initial resource constraints of the entrepreneur, may influence the amount of information search undertaken. Large ventures, because of their greater complexity and larger amount of capital required, should lead to greater information usage. Moreover, the need to provide legitimacy may be heightened when the entrepreneur must justify the venture to others. On the other hand, resource constraints imposed on the entrepreneur are likely to reduce the amount of convenience-based support solicited, since the entrepreneur would incur the costs of this assistance. Results of their research tend to confirm these arguments, with positive associations found between search (particularly professional sources) and three control variables consisting of amount of initial capital, outside investors and the presence of full-time partners.

Relevant experience may also influence the type of support utilized by entrepreneurs. Results of the Cooper, Folta and Woo study (1995) indicated that entrepreneurs with no prior entrepreneurial experience engage in greater information search with personal sources (family, friends, other business owners) ( $p=.0001$ ) than did experienced entrepreneurs, but no differences were found between the two groups concerning the use of professional sources. Although the overall result of greater information search is consistent with the bounded rationality model, the variation in type of support was not addressed either in the initial research hypotheses or the discussion of the findings. Research by Specht (1987) may shed some light on these findings, however. Because personal sources involve personal contacts and provide richer media which lessen the potential for misinterpretation, personal sources might be preferred when planners are uncomfortable or uncertain about their decisions, or when they perceive an unanalyzable environment (ibid.). Inexperienced

entrepreneurs might be expected to experience considerable uncertainty and ineffectiveness due to their lack of experience in planning and analysing the environment.

Other research on type of support stands in opposition to the findings by Cooper, Folta and Woo. In a U.S. study of 111 small firms Smeltzer, Van Hook & Hutt (1991) found no relationship between type of source used and prior ownership experience, industry or gender, and no relationship between type of source and the relative value of information. The statistical power of these tests may have been limited by small cell sizes, however, since the authors considered 12 different sources of support.

### **Non-financial Assistance by Venture Capitalists**

Venture capital is not a consideration in the current study yet there exists within the literature on venture capital a small body of research with important implications for the study of entrepreneurial support. This research comprises those studies which have examined the various forms of non-financial assistance or "value-added" (Rosenstein et al., 1993; Ehrlich et al., 1994; Sapienza, Manigart and Vermier, 1995) provided by venture capitalists to the entrepreneurs and firms they fund. Taken as a whole, this area of inquiry has, perhaps more so than any other within the literature, explored and revealed the multi-faceted scope and richness of support that may flow through one support channel.

Mentoring has long been considered beneficial to fledgling entrepreneurs and is now actively promoted by several government programs. In an early study of value-added activities of venture capitalists, Hay and Walker (1986) found that only 24 percent of the entrepreneurs sampled had not previously been in some type of mentoring relationship (either as a mentor or mentored entrepreneur), and that most mentored entrepreneurs perceived the relationship as useful. It was, however, a seminal article by Gorman and Sahlman (1989) that served to direct attention to the possibility of multiple forms of support



from the venture capitalist source. Their research was directed at exploring the relationship between venture capitalists and their portfolio firms, and revealed that in addition to providing capital, venture capitalists help to build the investor group, review and help to formulate business strategy, and assist with the recruitment of the management team.

Subsequent research has explored the scope of value-added activities in considerably greater depth; the potential types of support identified by various authors are summarized in Table 2.7.

**Table 2.7**  
Summary of Venture Capitalist Value-Added Forms of Support

<b>Landstrom (1990)</b>	<b>Ehrlich et al. (1994)</b>	<b>Fried &amp; Hisrich (1995)</b>
Financial expertise	Search for management team	Arranging financing
Financial security	Interview/select mgt. team	Arranging corporate partnerships or acquisitions
Acting as a sounding board	Negotiate employment term	Selecting top management
Professionalizing of the firm	Interface with investor group	Serve as sounding board
Wider range of contacts	Develop professional support group	Finding candidates for employment
Facilitate contacts with interested third parties	Obtain alternative debt financing	Finding service providers
Expertise in negotiating & contract-making	Obtain alternative equity financing	Providing customers
Obtaining capital from outside sources	Formulate business strategy	Locating strategic information
Cooperation with other portfolio firms	Develop actual product/service	Image & credibility
Formulating a business idea & strategic planning	Select vendors/equipment	Moral support
Administration	Formulate marketing plan	General business knowledge
Marketing expertise	Test/evaluate mkt. plan	Providing discipline
Production expertise	Solicit customers/distributors	
Technological expertise	Monitor financial performance	
	Monitor operating performance	
	Serve as sounding board	
	Motivate personnel	
	Replace management personnel	
	Manage crises & problems	

*(Items in this column listed in decreasing order of importance)*

The use of different activity measures makes comparisons across studies difficult, but both Landstrom and Ehrlich et al. found serving as a sounding board to be an important activity of venture capitalists. Perhaps the most important observation to be made, however, is that these studies suggest that many varied forms of assistance may be provided by only one type of channel. Unfortunately, none of the above studies attempted to determine how many forms of assistance were provided by one venture capital firm.

The relationship between the venture capitalist and entrepreneur is also likely to differ from typical supporter-entrepreneur relationships because the venture capitalist tends to operate from a position of power (Fried and Hisrich, 1995). It therefore seems likely that many of the activities outlined in Table 2.7 may not apply to other natural supporters. Venture capitalists, for example, may require more monitoring, controls and formalized reporting from entrepreneurs than informal supporters. Differences between venture capital involvement and private investor involvement have been confirmed by Ehrlich et al. (1994).

Despite differences between venture capitalists and other types of supporters, there is also research indicating that a number of venture capitalist value-added benefits can be obtained from other types of support. Ehrlich et al. (1994) found that both venture capitalists and private investors are involved in similar sets of activities, although entrepreneurs receiving private investor support desired greater investor involvement in serving as a sounding board, managing crises and developing professional support groups. Research findings by Rosenstein et al. (1993) indicated that CEO's do not rate the value of advice by venture capitalists any higher than advice from other board members.

Finally, contextual factors have been found to be associated with value added. From the results of a four-country study of 221 venture capital firms, Sapienza, Manigart and Vermier (1995) concluded that value added tended to be greater when the venture's needs were greater and when the venture capital firm had gained related experience, particularly within the venture's industry. It was also found that the rank ordering of the value of assistance was consistent across countries, with strategic roles perceived as being more important than supportive roles, and networking roles perceived as least important.

## The Board of Directors

A final research thrust related to entrepreneurial support is the study of small business boards of directors. In the case of large firms, the role, composition and impact of boards of directors have been subject to considerable scrutiny, particularly within the discipline of strategic management. Many of these investigations have tended to emphasize the board as either a control mechanism or a boundary-spanning mechanism. Huse (1990) argues that although the strategic problems of small firms may be less complex than those of large firms, the board of directors may be even more important to small firms because small companies often have less internal competency to deal with these questions and also often lack internal sources for service or expertise.

Daily and Dalton (1993) identify three potential areas in which board composition is likely to affect small firm performance: service, resource acquisition and control. Service from outside directors often consists of counsel and advice not necessarily available from insiders, but may also include an enhanced reputation due to the prior achievements and status of the directors. Outside directors also bring with them their own established networks of support which may be useful for acquiring resources and cooperation from external organizations. Finally, outside directors may be particularly useful in imposing monitoring and control on the firm, as the effectiveness of insiders is often compromised due to their subordinate position and their ties to the entrepreneur (ibid.). Results of Daily and Dalton's study of 186 small, publicly-traded corporations (1993) suggest that the service and resource acquisition functions of an independent board are more important than the control function.

In spite of the powerful benefits attached to outside directors in the normative literature, some research suggests that outside directors may not make any difference to the performance of the firm. Mace (1948) concluded that the typical small firm board was little more than a fictional legal organ "which included merely subservient and docile appointees

of the owner-manager;" (p. 87) in most cases the board consisted of the minimum number of members. Even more surprisingly, results of a study of INC. 500 firms by Ford (1988) indicated that boards with greater numbers of outside directors had significantly less influence and importance. Subsequent interviews by the authors revealed that lack of knowledge about the firm and its environment and a lack of availability were potential explanations for why outsiders seemed to be of less value than insiders.

Interestingly, of all the studies reviewed (in all preceding sections including the current one) only one author noted the definitional issue associated with the distinction between insiders and outsiders. Ford (1988) observed that various authors have defined inside directors differently. Pfeffer (1972) defined inside directors as present, former or retired managers of the firm. Vance (1964) added shareholders, and Danco and Jonovic (1981) included any family member, paid advisor, and friend of management. Ford settled on the following definition (p. 49): "present, former, or retired officers or managers of the firm, and their spouses and children."

### **Summary**

The preceding sections have reviewed the small business research literature dealing with support for entrepreneurs and their firms. The first central issue arising from this review is that of terminology. Examination of the literature on formal support revealed that the term 'support' tends to be used in reference to the formal support mechanisms offered by the public and private sectors. Although the term appears sporadically in the literature summarized in subsequent sections, it does so only in a diminutive sense. It is argued that the current usage of the term 'support' is misleading and inappropriate, and that the term should be reserved for support in its entirety; this latter usage has sometimes been referred to as natural support.

Few authors appear to have addressed the concept of a natural support system. There have been a considerable number of studies which have examined one source (e.g. venture capitalists or directors) or one type (e.g. information and advice) of support. These narrow perspectives have enabled strong research designs and the investigation of contingent relationships, but our understanding of entrepreneurial support tends to be fragmented as a result. More research needs to be done to explore the support system of the entrepreneur from a holistic approach.

A resource-based approach has dominated the research on small business support undertaken to date. While this perspective is well-suited to the examination of support and possesses a number of advantages, it has also had the unfortunate consequence of directing attention outside the firm almost exclusively. Only two academic studies were found which addressed both internal and external sources of support in a broad context; no studies focused exclusively on internal support.

Of the five areas of investigation reviewed, research on the value-added activities of venture capitalists has contributed the most to our understanding of the potential variety of support that may be received by the entrepreneur through one channel. Support may include, for example, information and advice, legitimacy, the expansion of personal networks, obtaining capital, acting as a sounding board, moral support and operating assistance. It appears that acting as a sounding board is valued highly by entrepreneurs, and that operating assistance tends to be of less importance; this latter finding may be due to the supporter's lack of relevant industry experience.

Overall there is evidence that entrepreneurs do receive support from a variety of sources and that this support is often highly valued. Beyond this, it is difficult to draw firm conclusions due to the frequent presence of conflicting and often counter-intuitive results. Even the value of support from outsiders has been questioned in several studies. Part of the reason for this divergence may be attributable to normative assumptions and restrictive

methodological approaches; in many studies the amount and type of support was identified using closed-ended questions. This approach runs the risk of identifying trivial forms of support and omitting valuable forms of support. For instance, very few studies considered moral support and encouragement as a potential form of assistance and those that did identify it did not seem to consider it of much consequence. At this early stage in our knowledge of entrepreneurial support, it is not clear whether the absence of emotional support is a methodological artifact or whether moral support truly is either not received or not valued by entrepreneurs. It is argued that exploratory work is required to investigate the total support system of the entrepreneur, taking as its starting point the assistance most valued by the entrepreneur.

### **2.3.3 Personal Networks**

#### **Introduction**

Research on entrepreneurship has employed the notion of the social network in a variety of contexts, including as a “sensitizing concept” (Caulkins, 1988), a metaphor (Johannisson, 1986, 1995), as a surrogate measure of resources (e.g. Aldrich, Rosen and Woodward, 1987) and as a methodological framework providing surrogate measures of behavioural characteristics (e.g. Ostgaard and Birley, 1992). Despite some notable efforts to the contrary by Burt (1990, 1992) and others (e.g. Aldrich and Whetten, 1981; Provan and Milward, 1995), some authors still consider the ambiguity of the network concept to be too great for social network analysis to achieve the status of a theory (e.g. Curran et al., 1993; Mønsted, 1995; Salancik, 1995; Szarka, 1990). Mitchell (1974) provides a useful summary of this latter debate and ultimately adopts a pragmatic stance — a view consistent with the perspective of the current research.

Having roots in anthropology, social psychology and sociology (Tichy, 1981), social network analysis is defined by Caulkins as “...the study of the connections — communications, interactions, exchanges of resources — between social units, such as individuals, organizations, or corporations” (1988, p. 6). Its relevance to the current research arises from its emphasis on the linkages between social units, thus focusing attention on the social nature of the phenomenon under investigation. Marsden described its thrust as follows:

... the approach seeks to describe social structure in terms of networks and to interpret the behaviour of actors in light of their varying positions within social structure. Emphasis is on constraints placed by social structure on individual action and the differential opportunities — known variously as social resources, social capital, or social support — to which actors have access. (p. 436)

With its potential to examine access to social resources and social capital, it is unsurprising to find that network analysis has been increasingly employed in studies of social support

(see, for example, Antonucci and Knipscheer, 1990; Hall and Wellman, 1982) and, more recently, entrepreneurship. This section will review the literature in which network analytic perspectives have been applied to the study of entrepreneurship. First, however, some terminology and concepts central to network analysis will be examined.

### **Types of Networks**

A network is defined as “the totality of all persons connected by a certain type of relationship and is constructed by finding the ties between all persons in a population under study” (Aldrich and Zimmer, 1986), p. 12). Caulkins’ definition of network analysis cited above indicated that the analysis could focus on connections between individuals or organizations. This distinction suggests that different levels of analysis may be employed, depending on the type of network being studied. Dubini and Aldrich (1991) refer to networks centered on a focal individual as “personal” networks (also called ego networks), and networks focusing on collectives as “extended” networks. Studies pertaining to small firm extended networks such as strategic partnerships and alliances (e.g. Larson, 1991, 1992; Mazzonis, 1989; Munro, 1993; Rothwell and Beesley, 1988) are beyond the scope of the current investigation and have been excluded from review.

Networks can also be distinguished according to the content of the linkages. In a seminal work, Mitchell (1973) argued that three types of social networks can be identified. The communication network consists of those linkages providing information content. The exchange network is concerned with linkages defined by transactions “which bind (the actors) to one another in a series of expectations and obligations” (p. 25). Although Szarka (1990) has suggested that the exchange network be viewed as the companies and organizations with which the firm has commercial transactions, Mitchell’s definition appears more analogous to Sooklal’s (1991) notion of convenience-based support, which provides for transactions with individuals such as employees in addition to organizations, and which is defined more by expectation than payment. Finally, linkages characterized by



normative content refer to relationships defined by kinship, friendship or acquaintanceship. Normative networks are sometimes referred to as social networks (Szarka, 1990).

Network analysis can also focus its analytical lens on quasi-groups (i.e. intermediates on the continuum between corporate groups and individuals; for example, cliques, and coalitions or factions) and subsets of networks, which Barnes (1969) termed "partial" networks and Mayer (1966) referred to as "sets". Of particular interest is the partial network known as the action-set (ibid), which refers to the linkages or relationships formed by an individual within a specific and purposive, but temporary, context.<sup>1</sup> Mayer used data concerning the electoral situation in the Dewas District in India to illustrate the concept of the action-set, describing it in the following fashion:

One feature of this action-set is that a wide variety of bases for linkage are involved. Included as criteria are kinship, political party, religious sect, and so on. But the crucial point is that, whatever may be these 'outward' bases for the links which together make up the path from the candidate to the voter, the 'inward' content is always the same — namely political support of the candidate. Thus, action-sets of this kind are formed of links derived from many social fields; but because they are purposive creations by an ego, this purpose gives all the links a common feature...

...the action-set is a bounded entity. It is not a group, however. For the basis of membership is specific to each linkage, and there are no rights or obligations relating all those involved; even the common act of voting does not bring members into relation with each other. Moreover, the action-set could not exist without the ego around whom it is formed. ... members are aware they form part of a population recruited for a particular common purpose, and they know that there are other linkages similar to theirs — though they may not be able to identify all the other people involved.

Finally, the action-set is not a 'permanent' entity like the group. ... This action-set thus exists only at ego's election. Any action-set constructed for a future election might contain a majority of the same people. But many of the linkages would have to be re-made since ... they are based on specific transactions. (pp. 304-306)

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<sup>1</sup> It should be noted that Aldrich and Whetten (1981) are largely responsible for introducing the notion of action-set to the entrepreneurship literature. In their original conception (which was adapted for the study of organizations from a population ecology perspective) the authors defined action-set as a group of organizations forming a temporary alliance. Rather than "re-adapt" the Aldrich and Whetten adaptation, it was considered more appropriate to revert back to the original concept as introduced by Mayer (1966), particularly since Mayer's original conception is better-suited to entrepreneurship theory. In a theoretical article targeted at entrepreneurship researchers Aldrich and Zimmer (1986) subsequently defined action-set as "a group of people who have formed a temporary alliance for a limited purpose" (p. 12), which one again parallels Mayer's description.

Thus, action-sets are purposive, not random or accidental, and are characterized by shared intentionality. It is readily apparent that the creation and activation of an effective action-set constitute core behaviours associated with both entrepreneurship and visionary leadership. Within the context of the action-set, membership derives from that person's potential to provide support and assistance towards attaining the goal of the central ego or entrepreneur. The action-set therefore includes the entrepreneur's supporters, but may contain more members than the support group, since it appears that activated linkages would be included in the action-set whether or not they had materialized into active, productive support. This latter point is an important one which will be revisited later in the discussion.

Other frameworks for categorizing networks have been suggested (e.g. Fombrun, 1982; Heckathorn, 1979; Milardo, 1992; Monge and Eisenberg, 1987) but have been relatively unsuccessful in gaining currency or acceptance in the entrepreneurship literature. Consequently, they will not be addressed further. Instead, we now consider the various properties of network linkages.

### **Properties of Network Linkages**

There are three major properties of network linkages: strength or intensity, symmetry and multiplexity.

#### *Strength or Intensity*

In one of the most influential works to have been published in the area of network theory, Granovetter (1973) defines the strength of a tie as "a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (p. 348). Although the author acknowledged that this definition is largely intuitive, it has also posed problems for empirical research

due to the multidimensionality of the concept. It does not come as a surprise, then, that Monge and Eisenberg (1987) would observe that the concept has been operationalized in many different ways, such as the amount of interaction that occurs between two people, the amount of information that is exchanged, and the frequency and/or duration of contact; even the importance or value of the linkage has been included as a weighting factor in determining the strength of a tie (*ibid*). In general, a frequency-related measure appears most commonly adopted, yet Marsden (1990) reports that both frequency and duration are problematic measures because duration overstates the strength of kinship connections and frequency exaggerates the importance of ties to co-workers and neighbours. Other measures of strength, less applicable to the study of small firms, are also described by the author (*ibid*).

### *Symmetricality*

Symmetricality refers to the degree to which both people enter into the same kind of relationship with each other (Monge and Eisenberg, 1987). Usually symmetricality is operationalized as a dichotomous variable, such that the linkage is either symmetrical or not. An employer-employee relationship would be considered asymmetrical, whereas the relationship between two co-workers would be considered symmetrical. Related to symmetricality is the notion of reciprocity. The reciprocity of a linkage concerns the degree to which two members of a dyadic link agree on aspects of the relationship (Richards, 1985). If, for example, person A says he trusts person B, and person B says she also trusts person A, then the relationship is said to be reciprocated.

### *Multiplexity*

Multiplexity refers to the number of ways in which one pair of participants are related (Tichy, 1981). For example, if two participants were members of the same family and also worked for the same organization, their relationship would be said to be multiplex. In essence, multiplex relationships deal with overlapping networks (Monge and

Eisenberg, 1987). A multiplex relationship would appear in more than one network, depending on how the networks were defined.

### **Properties of Networks**

Many properties of networks have been proposed. In this section only the most prominent will be examined, since the aim here is not to review network theory in its totality, but merely to provide sufficient context within which to interpret the hypotheses and evaluate the methodologies of network-related research concerning entrepreneurship. More extensive coverage of network properties is provided by Tichy (1981), Knoke and Kuklinski (1982) and Mønsted (1995).

#### *Boundary*

The first issue confronting network research is that of boundary specification. Traditionally, research on single organizations has tended to equate the boundary with the roster of organization members. In other research, however, snowball sampling is often employed, raising the issue of where does the researcher stop? Knoke and Kuklinski (1982) note that there is no firm criterion for making this decision, suggesting the decision should ultimately be set by the social-theoretic considerations of the study. In research focusing on personal networks of entrepreneurs, the network boundary is usually limited to respondents in the "first-order zone," which Boissevain defined as "all the persons to which a given person (ego) can trace a social relationship, and has personally met, and the interconnection between these persons" (p. 125).

#### *Size*

The most basic network metric is size. At an individual level, size refers to the total number of people to whom a person is linked. At a network level, size indicates the total

number of linkages in the network (Monge and Eisenberg, 1987). Size has been utilized in entrepreneurship research, mainly by relying upon the self-report of the entrepreneur.

### *Density*

Density is a reflection of the extent to which members of a network are tied to each other and is expressed as the ratio between the number of links present and the total number possible if every member of the network were connected to everyone else. Density in entrepreneurship research is often measured by asking the entrepreneur to predict how well the other members of the network know each other (Birley, Myers and Cromie, 1989, after Aldrich, Rosen and Woodward, 1986).

### *Reachability*

Reachability refers to the average number of linkages separating any two network participants (Tichy, 1981; Monge and Eisenberg, 1987). It may be also viewed as the average proximity or distance between network members (Mønsted, 1995).

### *Centrality*

Although it is one of the most frequently used network metrics, centrality is also characterized by multiple definitions (Monge and Eisenberg, 1987). According to Aldrich and Zimmer (1986), two factors are involved: (1) the total distance from a focal person to all other persons, and (2) the total number of persons a focal persons can reach. Centrality is related to the central communication roles that people play within networks and is tied to power and influence (Mønsted, 1995). Persons playing central roles may be in a position to provide brokerage services linking third parties to one another Aldrich and Zimmer, 1986).

### *Diversity*

Diversity has recently emerged as a network characteristic in entrepreneurship research (e.g. Birley, Myers and Cromie, 1989; Aldrich and Dubini, 1991) and appears to

parallel the concept of network range (Marsden, 1990). Diversity refers to the variety of people comprising a network. Birley, Myers and Cromie (1989) utilized gender, age and the kind of relationship (e.g. friendship, business, family) as indicators of diversity. In contrast, Aldrich and Dubini (1991) conceptualize network diversity in terms of tie strength.

### **The Role of Networks in the Entrepreneurial Process**

Entrepreneurship is a process of identifying opportunities and mobilizing resources to pursue opportunities. The identification of opportunities requires information and the mobilization of resources requires access to resources. Obtaining access to resources often involves asking others for money, labour and effort for a venture with an uncertain future (Dubini and Aldrich, 1991). Thus, "networking" or the activation of one's personal network, can be viewed as a core activity of entrepreneurship consistent with a resource dependence view of the firm. Successful networking will result in access to information and other resources in sufficient quantity and of sufficient quality to provide good opportunities and enable the building of effective firms. According to the network view, then, the success of the entrepreneur should, to a significant degree, be determined by his/her ability to build an effective network.

Network analysis in entrepreneurship research focuses on entrepreneurs as "embedded in a social context, channelled and facilitated, or constrained and inhibited, by their positions in social networks" (Dubini and Aldrich, 1991, p. 312). Although many researchers would agree that entrepreneurs can (or can be trained to) design and alter their networks in a strategic fashion (i.e. that effective entrepreneurial networks are the product of behaviour rather than social position), network analysis ultimately focuses on the structure and characteristics of the entrepreneur's personal network, rather than his/her behaviour. It therefore assumes that the characteristics of the entrepreneur's social network provide an accurate indication of the entrepreneur's access to resources.

With its apparent focus on access to opportunities and resources, network analysis would seem to address central aspects of the entrepreneurial process. It therefore appears to hold much promise for researchers seeking to explain successful entrepreneurship. As the review of the literature will show, however, the results of empirical research have been quite disappointing. The next section presents the results of this body of research. In view of the surprisingly disappointing results to date, studies will generally be reviewed in sufficient depth to evaluate the theoretical and methodological approaches.

### **Empirical Works Concerning Small Firm & Entrepreneurial Networks**

Early research on entrepreneurial networks provided important descriptive information concerning small firm network structures and the importance of networking activity in general. Based on the results of a survey of a small sample of potential and practicing entrepreneurs, Aldrich, Rosen and Woodward (1986) concluded that entrepreneurs spend significant amounts of time developing contacts (5.6 hours/week), maintaining contacts (5.5 hours/week) and talking to other people about their business (avg. = 25 people). Networking appears to be even more intensive during the start-up process, with entrepreneurs reporting they spent 42 percent of their time during start-up making contacts. Other network characteristics identified included a complex and loosely-connected structure (nearly one-half of network members were strangers to each other), diversity (the variety of relationships represented within the network), multiplexity (often more than one type of relationship between the entrepreneur and one network member) and long-time relationships. Concerning this latter point, the authors concluded that entrepreneurs rely on networks that predate their businesses (avg. business age = 3.3 years versus avg. relationship age = 11.3 years), but this finding may be a methodological artifact since the presence of any long-time relationship is likely to distort the finding. Consider, for example, a network comprised of four members: three whom the

entrepreneur has just met (i.e. relationship age = 0) and one whom the entrepreneur has known for 20 years. In this instance, the average relationship age is 5 years and we would conclude that the network predates the business, yet this conclusion seems unwarranted since only one of the four members was known prior to the founding process.

In a later study, Birley, Cromie and Meyers (1991) found that the networks of proprietors in Northern Ireland are less extensive than those of American and Swedish entrepreneurs (avg. 7.2 direct contacts in N. Ireland versus 9.5 in America), but also concluded that Irish entrepreneurs do maintain and utilize their network linkages extensively. Moreover, they tend to do most networking themselves rather than delegate this responsibility to other employees. These results provide support for the contention that networking is an important activity, especially in light of the scarcity of managerial slack typical of small firms. The sampling frame in this instance consisted of lists of firms provided by support agencies.

Knowledge is also accumulating concerning the attributes of networks, such as density, gender composition and dynamism. It appears that network density is reasonably stable across countries. Both the study above and that of Aldrich, Reese and Dubini (1989) indicated no significant differences in network density across countries. This latter study contrasted American versus Italian firms, but also examined the importance of gender effects. While gender was found to be unrelated to both network activity and network density, gender did have an important effect on network composition, with men having few women in their close business network and women having a high percentage of men. Network dynamism has seldom been the subject of direct investigation, but several research studies have observed that the personal networks of entrepreneurs appear to evolve over time (Birley, Meyers and Cromie, 1989; Butler and Hansen, 1991; Ostgaard and Birley, 1992).



Not all researchers are convinced of the general importance of networks in the small firm context, however. In an early study Pettitt and Thompstone (1989) surveyed 118 small manufacturing firms in Ireland's Shannon region to determine the extent and nature of network usage for the most recent three year period. Their findings indicated a low overall level of network usage, even in the case of contacts with friends and local non-trading business relationships. More recently, Curran, Jarvis, Blackburn and Black (1993) conducted an in-depth, qualitative analysis of critical incidents with 45 U.K. owner-managers. Their findings suggested that owner-managers have relatively small and non-extensive networks and tend not to rely on external contacts (such as accountants and bank managers) or even family, kin or social groupings for business purposes. According to the authors, this is to be expected due to the strong individuality and independence of the entrepreneur. In a strongly worded conclusion the authors argue that network concepts, despite their popularity, do not help to explain entrepreneurship:

In other words, small business owners do have contacts with their environment, it would be impossible to run the business otherwise, but these are much more limited and much less than the notions such as 'networks' and 'networking' would imply. The overall results point away from previously rather uncritically accepted views of small business owner networking and especially their emphasis on the proactive character of such activities. (p. 24)

It is worthy of note that the sample employed in this study comprised existing firms (as opposed to start-ups) and the critical incident utilized was restricted to "losing an important customer." Despite the authors' (warranted) conviction in the findings arising from the strength and meticulous nature of the research design, it is not clear that the observed lack of networking would apply to other contexts.

A second category of small firm network research can be identified within the small firm and entrepreneurship literature. This category exhibits considerable diversity in terms of category scope, but the individual studies comprising the category can be best described as having a narrow focus. Included are studies dealing with the use of external consultants and participation in seminars and trade fairs (Donckels and Lambrecht, 1997), the impact of cooperative versus competitive goals (Tjosvold and Weicker, 1993), the impact of

differing environmental contexts such as an industrial district versus a science park (Johannisson and Nowicki, 1992; Johannisson et al., 1994), the use of networks in ethnic minority firms (Ram, 1994) and the use of business networks by service firms (Bryson, Wood and Keeble, 1993). Since these studies have little bearing on the current research, they will not be considered further.

Implicit in nearly all (for an important exception, see Johannisson, 1995) network research is the assumption that a strong network contributes to the performance of the firm (Aldrich, Rosen and Woodward, 1987). Yet surprisingly few studies have examined the impact of networks on performance, either indirectly or directly. The next (and final) group of studies reviewed do address this important issue. Seven studies are presented in the following section, the first two of which deal with the issue from an indirect perspective, and the latter five including direct tests for significant relationships between network variables and firm performance.

Based on the results of interviews with 29 wineries, Butler and Hansen (1991) concluded that while social networks were useful for providing information related to the opportunity strategic interorganizational networks were useful for providing comparative advantage, business networks did not seem to play an important role during the start-up phase. Interestingly, entrepreneurs who had a long-time, deep-seated desire to start a winery had both large and small networks, but their networks tended to include a much greater proportion of individuals related to wine and the wine industry.

Ramachandran and Ramnarayan (1993) reported that entrepreneurs with high pioneering/innovative scores resorted to networking more than those with low scores. These results should be interpreted with caution, however, due to some methodological limitations. The study was based on a content analysis of 67 cases published in two Indian journals; in this situation it would have been useful to check for bias amongst different case authors, since it is possible, for example, that a senior reporter would be assigned to cover

larger, more successful firms and that the senior reporter might be more aware of and interested in networking aspects (whereas a junior, less experienced author might be inclined to emphasize the personal characteristics and "romantic" notion of the rugged individualist). The test for significance was also inappropriate in this instance, involving a t-test performed on a dichotomous dependent variable, and an inexplicable quantity reported for degrees of freedom. Interestingly, the authors observed that latent networks were tapped to a greater extent by entrepreneurs with high pioneering/innovative scores.

Aldrich, Rosen and Woodward's (1987) nine-month longitudinal study of 165 active and prospective entrepreneurs who were members or had attended meetings of an entrepreneurial development association in North Carolina produced several interesting results. They hypothesized the importance of three network variables: amount of resources (measured by network size), diversity of resources (measured by the proportion of strangers among the five "closest" members, or "strength of ties") and resource accessibility (defined as the degree to which entrepreneurs can obtain resources [p. 159] and measured by time and frequency of contact, and density among the five closest members). Three measures were found to be slightly predictive of business foundings: number of contacts per week with core network members ( $p=.03$ ), time developing contacts ( $p=.07$ ) and density. Of greater interest, however, were the results concerning the impact of networks on firm performance. In the case of young businesses (i.e.  $\leq 3$  yrs.) two accessibility measures, hours maintaining contact ( $p=.04$ ) and density ( $p=.004$ ) were significant, Diversity was also significant ( $p=.04$ ) but in the direction opposite to what was hypothesized. The authors suggested that this surprising finding could be due to a potential measurement problem or, alternatively, that diversity may indeed be unimportant. For older businesses, only network size was significant ( $p=.000$ ). It should be mentioned that the network measures utilized in this study have served as the basis for much subsequent research, particularly among researchers concerned with the comparability of their findings.

Hansen's study (1991) of 44 entrepreneurs who had started their businesses within the past five years is notable not only for its results, but also its divergent methodology. The three independent variables in the study consisted of action-set of "pre-organization" size (obtained by asking each entrepreneur to identify who had contributed to the creation of the venture), "degree" (calculated as the average number of linkages between network members, excluding the entrepreneur) and frequency (interaction between the entrepreneur and the members, and also interaction between members amongst themselves). Firm performance was measured by payroll size at the end of year one. Structured interviews were employed to gather the data. Using multiple regression, all three independent variables were significant predictors (size  $p=.001$ , degree  $p=.002$ , frequency  $p=.06$ ; overall model  $p=.001$ ), although frequency only marginally so. What is perhaps more significant is the fact that Hansen's study based the network measures on the actual size of the action-set as reported by the entrepreneur, rather than constraining the number of members to five (it should be noted that this method provides for both larger and smaller action-sets and does not restrict the analysis to the "closest" members). Moreover, the focus is on actors who contributed to the start-up, rather than those who were approached (pre-organization size ranged from two to nineteen members). The study's methodology is not without its problems, however. Asking the entrepreneur to identify the members of an action-set that was active five years prior is in line with the practices of similar studies and since the launch of a firm is such a highly significant and salient event the members should be recallable within an acceptable margin of error. Asking entrepreneurs to recall/judge how frequently network members had interacted with each other, however, appears highly questionable, even if the question were to apply to the current time period. The entrepreneur's ability to accurately recall the firm's payroll amount at the end of year one also seems doubtful.

Ostgaard and Birley (1992) tested an extensive list of network-related hypotheses on a sample of 159 owner-managed firms in two English counties. Their multiple regression results are summarized in Table 2.8 (Significant variables are indicated by an

asterisk). The first three network variables are significant in most cases, but it may be that reverse causation is at work in some of the size-related relationships. For example, larger firms may diversify their product lines, which could increase the number of suppliers (and commercial contacts) the firm needs to deal with. Similarly, larger firms may need to delegate more authority to management staff, resulting in a higher proportion of contacts knowing other employees inside the firm. To their credit, the problem of reverse causation was recognized by the authors and duly acknowledged. It appears that nine independent variables reflecting linkage content were also tested, but these were not significant. Overall there was not strong support for a relationship between network variables and firm performance. The authors, did, however, find important evidence that entrepreneurs differ in their networking strategies according to the competitive strategy pursued by the firm (ibid, 1994).

Table 2.8  
Ostgaard and Birley Findings

Network Variable	Dependent Variable * denotes a significant relationship			
	Size (Sales)	Size (Profit)	Size (Employees)	Growth in Employees
# of commercial network members	*	*	*	*
Hours contact with new investors	*		*	*
% of contacts knowing other people in the firm	*		*	*
Density (5 closest contacts)		*		
Size (total network)				
Hours contact with customers				
Hours contact with suppliers			*	*
Hours creating/maintaining contacts				
Hours spent traveling				
Frequency (5 closest members)				
# memberships in trade orgs.				
# memberships in social orgs.				
# memberships in professional orgs.				

Two major studies have also failed to reveal any significant relationships between network variables and performance. Birley's early study (1985) of 160 firms in St. Joseph County, Indiana revealed that informal sources were utilized to a much greater extent

than formal sources, but no significant differences between growth and no-growth firms emerged for any of the variables measured. Reese and Aldrich (1995) employed a two-year panel design including questionnaires and telephone interviews to study the network characteristics of 380 entrepreneurs in North Carolina. Three aspects of networks were measured: (1) time spent developing contacts, (2) time spent maintaining contacts, and (3) network size (measured by having respondents estimate the number of people they talk to in a month to discuss aspects of starting a new business or operating their current businesses. Of the three network variables, none were found to be related to either firm survival or firm performance (measured in terms of revenue increases, profits and relative to the competition).

### **Making Sense of the Findings**

It has been argued by Johannisson (1990b) that the personal network of the entrepreneur is the strategically most significant resource of the firm. It was also suggested earlier that, with its focus on access to opportunities and resources, network analysis appeared to provide a potentially powerful tool for examining central aspects of entrepreneurship. Based on the findings to date, however, one is forced to conclude that network analysis has failed to live up to its promise. With perhaps the exception of the Hansen (1991) study, there is at best marginal evidence supporting the presence of a relationship between network characteristics and firm performance; at worst, the results appear to disconfirm the importance of the entrepreneur's personal network. Overall, one must conclude the results are remarkably disappointing.

There are at least three alternative explanations for the lack of empirical confirmation supporting a relationship between network characteristics and firm performance. First, it is possible that there is indeed no relationship between the two variables — a possibility already identified by Johannisson (1995). Second, several authors

have argued that the paradoxical nature of entrepreneurial networks (for example, the tension between personal trust and economic gain, and the tension between individualism and social cooperation) renders the use of quantitative techniques as unsuitable for the study of networks; instead, this group proposes the use of more qualitative methods of inquiry (e.g. Curran et al., 1993; Johannisson, 1995; Mønsted, 1995). Third, the observed lack of empirical support may be attributable to weaknesses associated with the research itself. It is argued here that it is premature to accept either of the first two explanations so long as the third explanation remains plausible. The purpose of this section, then, is to examine the weaknesses in the research to date. As the analysis will show, a variety of weaknesses are present, and these tend to be of sufficient magnitude and importance such that their potential to account for the observed lack of empirical support in the literature cannot be ruled out.

Research weaknesses present within the entrepreneurial network literature can be organized within three categories: methodological weaknesses and inconsistencies, inconsistencies in the interface between theory and methodology (an issue of construct validity), and theoretical inconsistencies. Several methodological weaknesses have already been mentioned in the review of empirical studies; these include the use of average relationship age as an indicator of network age, failure to check for bias in situations where there is a strong likelihood of bias, the use of inappropriate statistical procedures, and the use of self-reports of entrepreneurs to provide information they are unlikely to possess or able to recall accurately. Network density, for example, is typically based on the five closest network members and measured by asking the entrepreneur to identify which members know each other. Here it is not at all clear that the entrepreneur would necessarily know whether all members know each other, particularly in the case of professional relationships such as lawyers and bankers; unfortunately, no testing of the validity of this assumption appears to have been undertaken. Another potential problem highlighted during the review of key network concepts concerned the usage of frequency as an indicator of tie strength; although this measure was criticized for exaggerating the

importance of ties to neighbors and co-workers (admittedly, the latter problem of co-workers is likely not a key concern in the context of existing studies, whereas the former appears to be an issue), this bias has neither been mentioned nor addressed in the entrepreneurship literature, while the measure itself continues to be widely adopted.

While methodological weaknesses can be expected to reduce our confidence in the reliability of the findings reported, of even greater concern are apparent inconsistencies in the interface between theory and methodology. One such inconsistency surrounds the central concept of network diversity, which appears to be problematic in two respects. This construct has been operationalized as the strength of ties (as measured by the proportion of strangers among the five closest network members; see Aldrich, Rosen and Woodward, 1987). The first criticism of this approach is that using a subset consisting of “closest” members seems contradictory with the notion of diversity, which we would expect to be manifest, not so much in close relationships, but rather those with new and distant network members; therefore, tie strength is likely to reflect the opposite of diversity. The second criticism of past practice concerning diversity is that a measure based on strength of ties will in fact measure tie strength, which is not at all the same as diversity. Dubini and Aldrich (1991, p. 308) have argued that the relationship between diversity and firm performance is as follows: “Of course, most personal networks will include a mix of weak and strong ties, and it is the relative balance of weak to strong that is crucial.” Clearly, tie strength as a measure does not capture the “balance” central to diversity in any respect whatsoever. At best, this measure could be expected to demonstrate an inverted U-shaped relationship with firm performance when utilized as a proxy for diversity — a situation likely to indicate a nonsignificant linear relationship.

A second problem associated with the interface between theory and methodology concerns the theoretical issues raised by sampling decisions. Several of the articles reviewed sampled existing businesses rather than start-ups. This in itself is not necessarily problematic, but it does raise the issue of what theory is being tested. It is apparent, for



instance, that the network variables being tested are fairly similar and consistent across studies, despite the sample context; this indicates that the theory being tested is also the same in both contexts (i.e. mature firms versus start-ups). An important question, therefore, is whether the same networking processes and variables apply equally to both settings. Are the networking principles prescribed for effective entrepreneurship identical to those prescribed for effective management? A comparison of research designs employed suggests that researchers believe the answer is yes, but the basic issue itself does not appear to have been given much consideration in the literature. Accordingly, there appears to be a need for more careful and deliberate theorizing concerning the application of networks to entrepreneurship versus management.

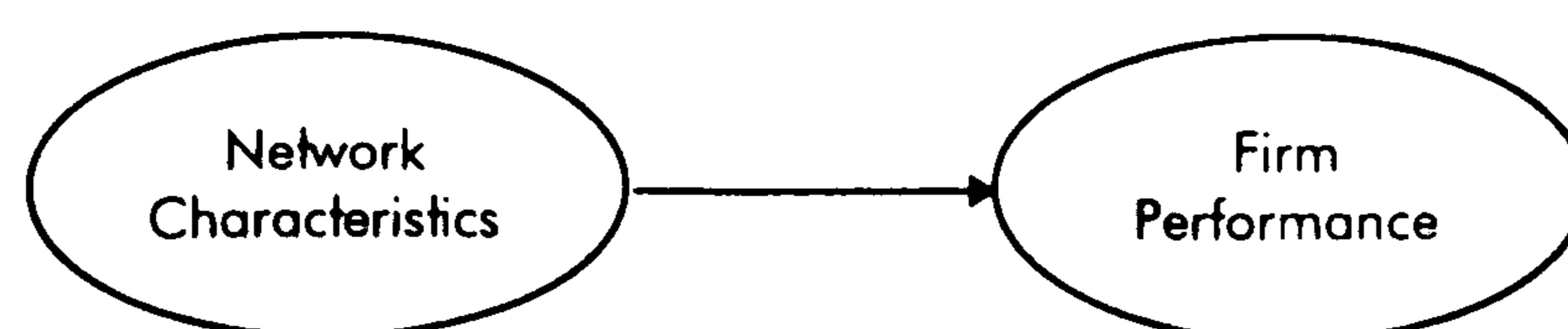
A final issue dealing with the theory/methodology interface concerns the selection and operationalization of variables. Most of the network variables currently being tested were developed in the context of a total network. Most researchers have also agreed that in the context of entrepreneurship the action-set (i.e. a subset of the total network) is the relevant unit of analysis. Yet many of these "global" network measures, such as density, diversity and tie strength are often measured using only five members of the action-set. An important question, therefore, is to what extent these "global" network measures can be expected to apply to a subset of a subset of a network. This question does not seem to have been addressed in the literature and empirical testing of this important issue appears to be sorely needed.

The third and final category of questionable practices found in the research to date consists of inconsistencies in theory. Two such problems will be addressed here. The first has to do with the impact of frequency on performance. Frequency of contact appears to be one of the most widely studied variables in network research. Indeed, Curran et al. (1993) have criticized network research for focusing too much on the frequency of contact between parties, while paying little attention to the character and significance of the relationships. Mønsted (1995) also warns that choosing frequency as a measure of the

network limits the scope of the network concept. But one might also ask why frequency of contact should be important to the performance of the firm in the first place. Traditionally, frequency is considered a measure of network activity or network 'activation' (Reese and Aldrich, 1995), which in turn is assumed to reflect resource accessibility. According to Aldrich, Rosen and Woodward (1987), "Using amount of time and frequency of contacts as a measurement of accessibility is based on the argument that the more time and energy entrepreneurs spend on trying to obtain resources, the more likely they are to be successful." (p. 159). While there may be some truth to this in certain situations, this proposition is also somewhat contradictory to network propositions related to tie strength and diversity. Weak ties and diversity, as noted earlier, are valued in networks, and are expected to contribute to the performance of the firm. Yet weak ties are typically defined by low frequency of contact, which stands in direct opposition to the hypothesis concerning frequency and performance. This fundamental contradiction suggests an inconsistency in theory that needs to be reconciled. Other examples can also readily be found suggesting that frequency may not be an important factor. Consider, for example, convenience-based support. Here, very high quality advice may be received from a top lawyer or other professional, but this advice is likely also expensive. In this situation, a valuable resource will be directly linked to low, rather than high, frequency. Moreover, this example highlights the need to consider resources in terms of both quantity and quality.

A final weakness of extant theory stems from an untested key assumption implicit in network research models. Most network studies hypothesize a direct relationship between network characteristics and firm performance. This model can be diagrammed as follows:

Figure 2.5  
Basic Network Model



Adopting a resource dependence framework, these authors assume that the network represents the potential support available — an assumption that appears reasonable, in fact. Also implicit in this model, however, is the key assumption that there is also a direct positive linear relationship between network characteristics (or resource potential) and the amount and quality of resources actually received. This assumption can be incorporated into the research model as depicted in Figure 2.6.

Figure 2.6  
Complete Network Model

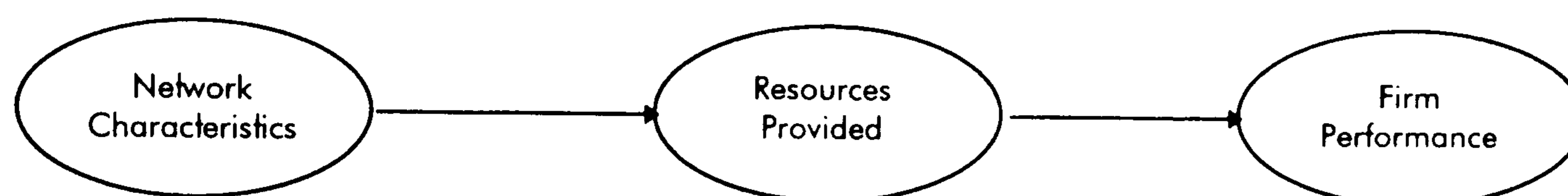


Figure 2.6 makes it clear that firm performance is expected to be more directly related to the provision of resources than it is to network characteristics, which reflect resource potential rather than resource actualization. It also highlights the fact that if the assumption of a direct linear relationship between network characteristics and resources provided is not met, the chances of detecting a relationship between network characteristics and firm performance are strongly diminished. Although the assumption of resource actualization is readily testable, either by using resource provision as a dependent variable instead of firm performance, or by modeling and testing the more complex relationship depicted in Figure 2.6, such testing has not appeared in the empirical literature. Moreover, evidence from research concerning social support indicates that not all active ties are supportive (Hall and Wellman, 1982). Overall, this issue represents an important gap in network research, and one that clearly needs to be addressed before significant progress can be achieved.

In summary, the promise of network theory has met with remarkably disappointing empirical results. It has been argued that inconsistencies in theory, methodology and the interface between them have contributed to the paucity of positive findings, and that

significant refinements are possible. Network theory has tended to emphasize network structure over relationship and transaction content. In doing so, it focuses on the availability of support rather than the provision of support. Also missing from this structuralist approach to social behaviour is the motivation for support. In other words, why do members, especially those with weak linkages to the entrepreneur, participate in the first place? For the entrepreneur with unlimited capital this would likely not pose a problem because all the required resources could be purchased. In most cases, however, this is an unrealistic solution. In these situations the strategic creation and activation of action-set linkages may indeed result in a sizable and impressive action-set (as measured by network analytic techniques) yet still fall short in terms of delivering significant support. If network "theory" is sufficient to explain success and failure in entrepreneurship, the strategic creation and activation of linkages should be sufficient; put another way, the action-set as independent variable should explain entrepreneurial success/failure. If, on the other hand, vision is an important factor in explaining entrepreneurial success (by providing motivation for contribution by members of the action-set), then the characteristics of the support system or "support-set" should be a more relevant and effective independent variable than the characteristics of the action-set.

## **2.4 CONTROL VARIABLES**

### **2.4.1 Geographic Location**

The importance of the relationship between the environment and the organization has received considerable attention in the literature concerning the sociology of organizations (Aldrich and Pfeffer, 1976). Environments can be conceptualized and analyzed at different levels (Bourgeois, 1980; Castrogiovanni, 1991). Dill (1958) made a distinction between general and task environments, with the latter composed of customers (distributors, users), suppliers (of materials, labor, equipment, capital and workspace), competitors (for both markets and resources), and regulatory groups (government agencies, unions and interfirm associations). Castrogiovanni (1991) subsequently delineated five relevant levels of environmental analysis. At the lowest, or most specific, level is the resource pool, comprised of stocks of particular resources. Above this lies the subenvironment level, which consists of the actors and organizations in control of the resource pools which are relevant to an organization subunit. This level, therefore, appears useful for analyzing large firms, but its relevance to small firms appears doubtful because of the prevalence of simple structures within the small firm sector. The third level consists of the task environment. The aggregation environment or fourth level is composed of external groups and organizations which influence a set of organizations as a whole, and may be viewed as the totality of all task environments of a set of firms. Finally, the macro environment represents the general cultural context of a specified geographic area and comprises those forces which have important influences on organizational characteristics and outputs. According to Castrogiovanni's framework, each level encompasses the levels below it; moving up the hierarchy, therefore, suggests progressively broader frameworks of analysis.

Because of the predominance of resource-based approaches to entrepreneurship, research concerning new firms at the micro level has often concentrated on the lowest, or

resource pool, level of analysis. Studies of existing firms at the micro level often emphasize firm strategy and may be characterized as giving emphasis to the task environment of the firm. The macro level of the environment, however, has received considerable attention in research dealing with small firm formation at the macro level; this latter area of inquiry seeks to explain observed differential rates of new firm creation across geographic sectors.

Mason (1991) suggests that the elements of local geographic environment important to new firm formation can be generally classified within three categories: structural characteristics, entrepreneurial culture and economic factors. Structural characteristics include industry structure, plant-size structure and the occupational structure of a region. Local culture is considered important because it provides a social context where entrepreneurial behaviour may be either encouraged or discouraged. Several factors may contribute to an entrepreneurial culture, including the collective psychological attitude of the local population (e.g. optimism versus pessimism), the dominant life-mode (self-employment, career, and wage-earner) and the entrepreneurial propensities of local institutions. Economic factors contributing to spatial variations in new firm formation involve the availability of information, the availability of factors of production and regional market demand.

Mason observed that the factors of location traditionally imputed importance by geographers (finance, property, labour and markets) are of minor importance in explaining the geography of new firm formation. In contrast, research on entrepreneurship has recognized the importance of situational and social variables (ibid.; Reynolds, 1992). Socio-cultural explanations for spatial variations in new firm formation emphasize the supply of entrepreneurs, whereas the economic approach gives weight to the presence of a favourable economic environment. It is now generally conceded that both views are necessary for an understanding of spatial variations (Mason, 1991; Barkham, 1992; Reynolds; 1992).

Macro-level factors concerning spatial variations in new firm formation, then, have been subject to extensive research, as exemplified by studies by Reynolds, Miller and Maki (1991), Barkham (1992) and Davidsson, Lindmark and Olofsson (1992) and the excellent reviews of the literature by Mason (1991) and Reynolds (1992). On the other hand, surprisingly little investigation of the impact of macro-level factors on the venture creation process or organizational characteristics has been carried out. Gnyawali and Fogel contend that the literature on environmental conditions has "... neither paid adequate attention to the needs of the entrepreneur — the main beneficiary of the environment — nor described the environmental conditions in terms of the process of new venture creation" (1994, p. 43).

One of the more important macro-level factors affecting the entrepreneurial process may be the rural versus urban context. As Johannisson has argued, "... economic activity, whether considered on the individual, organizational or societal level, cannot be understood without also looking into the interface between business and the community" (1990a, p. 17). In a study of spatial variations in firm birth rates, Davidsson, Lindmark and Olofsson (1992) conducted a factor analysis of 20 independent variables and found that five independent factors were sufficient to explain 77.5 percent of the variance. These factors were termed "postindustrialism," "peripheral/rural," "urban," "large scale manufacturing," and "small scale manufacturing." The peripheral/rural factor displayed high loadings on low reachability/accessibility, high unemployment, strong governmental support for regional and business development, and a high share of employment in public and private services. In contrast, the urban factor had high loadings for population density, income level, and support to culture. It can be seen that most of the variables associated with rurality and urbanism were structural or economic; it should, however, be recognized that this is also a reflection of the initial set of variables adopted by the authors.

Anderson (1995) has emphasized that rurality is both a physical and social construction, encompassing a rich mixture of sociality, culture and identity. This view of rurality as a "reservoir of values" (p. 193b) is much more akin to the notion of life mode identified earlier in this section (see Hjalaager, 1989 for a more complete discussion of life modes). Thus, the distinction between rural and urban, while rooted in physical proximity, is complex and multi-dimensional in its manifestation.

Although there have been a number of studies focusing on entrepreneurship in a rural context, there have been surprisingly few investigations seeking to determine the impact of rurality or urbanism in generalizable terms (Buss and Popovich, 1991). Findings by Banks (1991) suggest that there is little difference between rural firms' location decision variables and those of urban firms. This seems unsurprising, however, since it has been reasonably established that those starting new firms tend to do so in a familiar location (Reynolds, 1992). From the results of interviews with 1,428 entrepreneurs in five U.S. states, Buss and Popovich concluded that, contrary to popular myth, rural businesses contribute substantially to job creation, are as diversified as urban businesses, and have higher survival rates than urban businesses. In addition, rural areas are as competitive as urban areas in developing new businesses, and rural entrepreneurs have access to bank financing, raise considerable capital to start, return more than poverty wages, serve more than local markets, and use technical assistance in getting started.

Hitchens and O'Farrell (1987) compared 18 matched pairs of mature small firms in Northern Ireland and South East England, finding that the Irish firms performed less well than their English counterparts, but for reasons which also contradicted the conventional wisdom. Popular explanations for the lower performance of Irish (and indeed, rural) firms have traditionally included such reasons as small market size, high material costs and higher finished product prices due to added transportation costs, use of old technology and the complexity of government support initiatives. It was concluded by the authors that although the English firms did serve wider geographic markets, the difference in market



scope could not be explained by transport costs. In fact, many Irish firms faced less intensive competition than the English firms and Irish firms possessed more modern equipment. Differences which did seem to account for some of the performance gap experienced by Irish firms included lower quality skills, work attitude, and attitude towards design.

Anderson's (1995) in-depth investigation of entrepreneurs in the west Highlands of Scotland revealed that local rural entrepreneurs were more concerned with deriving local social status from their businesses (rather than profits), whereas cosmopolitan entrepreneurs (those who had moved from urban areas to the countryside) were more concerned with recreating the experience of rurality. This finding tends to parallel that of Bennet's 12 year ethnological study of Canadian family-operated agricultural enterprises. Bennet concluded that management in small agricultural enterprises is not governed solely by economic factors and must instead be considered as a complex social undertaking. Both Anderson and Bennet observed status to be an important factor sought by rural entrepreneurs; in Anderson's case this status was generated by the business itself, whereas Bennet found status tended to be associated with management style.

Rural and urban firms may differ in their network structures. Pettitt and Thompstone (1989) and Johannisson (1987) suggest that rural areas characterized by geographic isolation and small business tradition will be associated with a high degree of linkages and stronger ties. In Newfoundland, this tendency may be further accentuated due to the close-knit structures of outport communities. Pettitt and Thompstone argue that the benefits of strong community identity may also hinder the development of weak ties thought to be useful for information gathering and strategic awareness. Interestingly, their study of 118 small manufacturing enterprises in Ireland's Shannon region revealed few differences in networking strategies between urban and rural entrepreneurs, although rural entrepreneurs did demonstrate a higher level of family participation.

Rural and urban entrepreneurs may also prefer different sources of support. Meyer-Krahmer (1989), studying innovative behaviour in West Germany, found rural firms to be less outward-oriented, as measured by informal contact with technical/business experts and close contact with suppliers and customers. Rural firms demonstrated a preference for internal problem-solving, irrespective of the expertise deficiencies. Anderson's (1995) study suggested that experienced rural entrepreneurs tended to distrust the motives and procedures of bureaucratic organizations. Taken together, these findings suggest that the support systems of rural entrepreneurs may contain a higher proportion of insiders, and that fewer government and institutional sources of assistance may be found amongst the external supporters of rural entrepreneurs.

Overall, the impact of the macro environment on the small firm initiation and development processes appears to be under-researched. It has been argued that there may be important differences between rural and urban entrepreneurs, due in part to the geographic isolation of the former, but mainly attributable to different social and cultural contexts. These differences might be expected to be manifest in the motivations (and hence, vision) of the entrepreneur and the composition of the entrepreneur's support system. Because both theory and empirical evidence are insufficient to specify the nature of this impact, it was decided to exclude geographic location from the research model. Given the foregoing discussion, however, it would appear risky to ignore completely the potential confounding influence of this variable. Consequently, geographic location will be treated as a control variable and its potential influence analyzed separately (Emory, 1976).

#### **2.4.2 Gender**

The rapid rise in the number of female entrepreneurs has escaped the notice of neither academics nor governments. According to Sexton and Bowman-Upton (1990), government estimates indicated that women owned 28 percent of all businesses in the

United States in 1988. In Canada the number of self-employed women grew by 172.8 percent between 1975 and 1990 (ACOA, 1992). The importance of this phenomenon has been reflected in the initiation of government programs specifically targeted at women entrepreneurs and by a growing body of academic research within the small business literature. Both of these activities make the assumption that the entrepreneurial process for females differs from that of male entrepreneurs due to differences in gender. A gender difference has been defined as "... (a difference) attributable to the action of socially determined forces that differentiate the sexes" (Rosa and Hamilton, 1994, p. 13). Moreover, women owners tend to report discrimination, regardless of sector (Belcourt, 1991).

Some studies have provided evidence that female entrepreneurs differ from male entrepreneurs in terms of their psychological characteristics and motivations for starting a business. Using a convenience sample of entrepreneurs and managers in the southeastern United States, Carland and Carland (1991) found that female entrepreneurs and managers were more strongly intuitive than males, while males were more strongly oriented toward a thinking mode of cognition. Unfortunately, the results as presented do not lend themselves to interpretation by an outsider and consequently one is forced to accept the conclusions of the authors at face value.

The initial motivations of entrepreneurs have been subject to similar investigation. Gatewood, Shaver and Gartner (1995) concluded that females who successfully start businesses have higher internal stable attributions (e.g. "I have always wanted to be my own boss") whereas men who successfully started ventures tend to have external stable attributions (e.g. "I had identified a market need"); this finding was based on a survey of 85 pre-venture clients of one Small Business Development Centre. Cromie interviewed 69 entrepreneurs and concluded that although men and women want many similar things from business ownership, money is more important to men, who also tend to resent more strongly the direct supervision they experienced at work. Nearly all men were seeking

advancement, and any blocks to their progress constituted major sources of disenchantment. Women, on the other hand, are more discouraged by a lack of promotion prospects, and the majority experience a tension between their desire to pursue a career and their desire to spend more time with their children. Solomon and Fernald (1988) developed terminal and instrumental value profiles of male and female entrepreneurs; these profiles suggested differences in personal values between the two groups, although no tests of significance were undertaken.

In what is arguably the most comprehensive and carefully designed study to date on gender differences in entrepreneurs (Rosa et al., 1994; Rosa and Hamilton, 1994), ownership has been identified as an important discriminator. Based on the results of interviews with 602 UK business owners in three industrial sectors, Rosa and Hamilton concluded that women respondents were much more likely to be related to other owners in the business than men. In particular, women were more likely to be related to domestic partners than males, but less likely to be associated with other categories of kinship (e.g. children, siblings). Some of the most striking findings involved differential patterns of ownership. Men were much more likely to own more than one business than were women, and female owners tended to be associated with only one other owner whereas males were more often associated with four or more owners. Interestingly, no significant differences were found in reasons for being in business (Rosa et al, 1994).

A final area where gender differences have been found or posited to be important concerns the personal networks of the entrepreneur. According to Ibarra (1993), women managers usually have a much smaller set of similar others from whom they can develop professional relationships. Consequently, women desiring network contact with their own identity group will have to reach out further, beyond their immediate peers. If women are concentrated disproportionately in lower status groups, these homophilious relationships may be less likely to provide instrumental benefits (ibid). Alternatively, if female managers are constrained to have a preponderance of cross-sex ties, these networks will be

characterized by fewer strong, multiplex ties. Weaker ties will also tend to be less stable, and tend to result in networks that are sparser (ibid).

Research by Staber (1993) tends to support several of the above propositions. Based on the results of a survey of 124 small business owners in Atlantic Canada, Staber concluded that women's networks are wider, have a higher proportion of strangers in them (i.e. are less dense), and include a higher proportion of cross-sex ties (52% for women versus 17% for men). After reviewing the literature, however, Doyle and Young (1995) contend that, overall, research on women entrepreneurs and their networks appears "fractured, incomplete, and/or contradictory" (p. 173).

There exists also a substantial body of work which maintains that the gender-based differences between men and women entrepreneurs are of minimal importance. Using a modified version of the Rokeach (1973) Value Survey, Fagenson (1993) found that although entrepreneurs and managers had vastly different value systems, gender had very little impact on personal values. Sexton and Bowman-Upton compared the psychological traits of male and female entrepreneurs and concluded that while some differences in energy level, risk-taking, autonomy and change did exist, these differences likely would not affect a person's ability to manage a business.

Similar conclusions have been drawn with respect to gender-based investigations of resource requirements and access to resources. Both Chrisman et al. (1990) and Nelson (1987) found that male and female entrepreneurs were identical in terms of their pre-venture information needs. From the results of a national survey of 3,217 Canadian business principals (including 153 women), Riding and Swift (1990) concluded that, after controlling for differences in the characteristics of male- and female-owned businesses, only one statistically significant gender-related difference remained concerning terms of credit: that of collateral requirements for a line of credit. Finally, in an exploratory study of 102 female business owners, Nelson (1989) found that the support contributed by

significant others tended to be based on what the other was best able to provide. Although the study did not utilize a comparison group of males, it should be noted that this finding is consistent with traditional studies concerning support.

The impact of gender on firm performance has been directly examined by several authors. In the case of U.S. home-based businesses, Carter, Van Auken and Harms (1992) found that businesses owned by females were larger than those owned by males; most other variables examined, however, failed to reveal important differences between genders. Fischer (1992), in a study of retail and service firms, observed that women-owned firms performed less well than firms owned by men and that women possessed different motivations and had less experience than men, but was unable to find any evidence for the effect of gender-based predictors on performance.

In summary, the results of studies of gender effects on entrepreneurship have been mixed (Gatewood, Gartner and Shaver, 1995). This lack of consensus may be partially attributable to methodological issues. Fischer (1992) has noted that many samples have been characterized by relatively small numbers of women entrepreneurs, particularly in the manufacturing sector. For example, Riding and Swift's (1990) sample of 3,217 businesses yielded only 153 female respondents. Rosa and Hamilton (1994) argue that the problem of lack of homogeneity across sectors in the small business population often renders the comparison of different samples meaningless. Moreover, the serious and confounding issue of mixed ownership has been inadequately addressed in much of the research to date (ibid). Overall, then, it appears premature to draw definitive conclusions from the evidence to date. Of the various research variables reviewed, initial motivations, ownership and network composition seem to hold the greatest promise as potential gender-based differences. In the current study, however, gender will be analyzed separately as a control variable.

# CHAPTER THREE

## RESEARCH MODEL AND HYPOTHESES

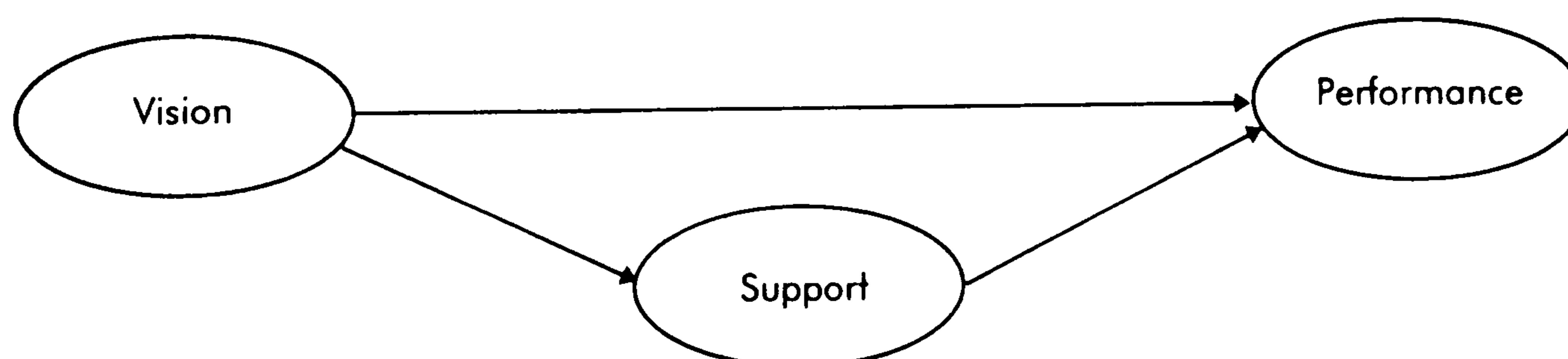
### Chapter Outline

- 3.1 Introduction
- 3.2 Vision-Related Hypotheses
- 3.3 Support-Related Hypotheses
- 3.4 Summary of the Research Model
- 3.5 Other Variables to be Investigated

### 3.1 INTRODUCTION

The literature review process began by reviewing various models of strategy formation in an effort to determine which model might best be applied to entrepreneurial small firms. It was argued that, of the alternatives posited to date, Sooklal's (1991) grounded theory of visionary leadership provides the most realistic, accurate and compelling research framework for understanding the strategy formation process within entrepreneurial firms. Sooklal's framework included two main elements: vision, and an entrepreneurial support system consisting of value-based insiders and outsiders and convenience-based insiders and outsiders. The broad relationships between vision, support and firm performance suggested by Sooklal's framework can be diagrammed as in Figure 3.1, where an arrow represents a positive linear association between constructs.

Figure 3.1  
Central Elements of Sooklal's (1991) Framework



Having identified the central elements in the research model, a review of the literature concerning these two elements was undertaken with a view to identifying theoretical and empirical issues which could be used to further refine and operationalize the model. Sooklal's study, it must be remembered, focused on the visionary leadership process as observed in one large organization, whereas the current study seeks to test the predictive value of Sooklal's theoretical framework in the context of a diverse sample of small firm start-ups. The majority of this chapter focuses on the process of model refinement and identifies the specific hypotheses which are incorporated within the refined model. A subsequent section is included to briefly address some additional research issues suggested by the literature concerning new ventures — specifically, geographic location and gender. Although there is neither adequate extant theory nor empirical results from which derive firm hypotheses for these variables, the literature is sufficiently contradictory to warrant the investigation of these issues in an exploratory study.

### **3.2 VISION-RELATED HYPOTHESES**

#### **Vision Structure**

Visions, as cognitive constructs, can be distinguished by their structure and by their content. In terms of structure, three attributes of vision were identified in the literature: clarity, complexity and holism. The importance of holism has received indirect support from Filion's study (1990), which indicated that visions in which either the internal component or external component was weakly developed tended to be associated with poorer firm performance. The distinction between internal and external components, however, is primarily an aspect of content. Holism, then, appears not to be a purely structural issue, but rather must be understood from within the context of vision content. The concept of holism has important implications for the operationalization of vision (this issue is dealt with in the chapter concerning methodology) as it suggests that any method



used to operationalize vision must be capable of representing the firm in the broad scope of its content-related context. From a hypothesis-testing perspective, the structural implications of holism must be concerned with the inter-relationships between the content-related dimensions of vision. These inter-relationships can be seen to be an issue of integration. It will be seen shortly that this latter issue is already subsumed under the concept of vision complexity, which is better equipped to address the issue due to a well-established literature concerning cognitive complexity and the availability of existing psychometric measures.

Clarity as a property of visions tends to suffer from problems similar to holism. While the notion of clarity when associated with the depiction of vision as a mental image may be intuitively appealing, clarity does not appear as a cognitive construct in the psychological literature. Researchers of person perception who view the self as a prototype do make reference to "fuzzy sets" in discussing concepts of persons, where the categories that guide impression formation are defined by fuzzy sets of features, each only probabilistically associated with category membership (Kihlstrom and Cantor, 1984; Kihlstrom, Marchese and Klein, 1995). But this context is clearly different from the current research, where the issue at hand concerns the structure of the entrepreneur's vision rather than the categorization process employed to categorize people.

It may be that the notion of clarity depicted in the vision literature is overly simplistic. It may be useful, therefore, to consider the implications of clarity in somewhat more precise psychological terms, such as meaningfulness or "salience," which has been operationalized by the extremity of rating scores (Fransella and Bannister, 1977) but tends to be utilized in the context of individual constructs rather than an entire structural domain, or as "differentiation," which refers to the number of psychological constructs used to articulate, evaluate and interpret an event (Hayden, 1982). Differentiation is also an important dimension of cognitive complexity, however. Thus, it is argued here that at least one major aspect of clarity can once again be subsumed within the concept of vision

complexity. It was decided that this latter strategy would be adopted for the purposes of the current research.<sup>1</sup>

Within the literature pertaining to the psychology of personal constructs there exists a substantial base of theoretical and empirical works dealing with repertory grid-based indices of grid structure (repertory grids are introduced in the next chapter as a means of operationalizing entrepreneurial vision) and the concept of cognitive complexity (see, for example, Adams-Webber, 1979; Bell, 1988; Crockett, 1982; Dempsey and Neimeyer, 1995; Fransella and Bannister, 1977; Hayden, 1982; Landfield, 1971; Landfield and Cannell, 1988; Reger, 1990).

Cognitive complexity was originally conceived by Bieri (1955) as the degree of differentiation in a person's construct system. Although the term complexity is still often used to reflect differentiation, some researchers (e.g. Metcalfe, 1974; Landfield, 1977) now maintain that complexity includes aspects of both differentiation and hierarchical organization or "integration," since a highly differentiated construct system characterized by low integration would likely be overly fragmented, resulting in confusion. Integration is usually interpreted as the converse of differentiation (Dempsey and Neimeyer, 1995).

Westley and Mintzberg (1988) have argued that visions are complex images and that visions should be associated with a complex cognitive structure. An assumption of this research, therefore, is that effective visions are characterized by greater complexity. Clarity and holism are also important structural attributes of effective visions, as discussed above; these attributes, it was argued, are in large part also subsumed by the concept of complexity. Effective visions provide entrepreneurs with a clearer sense of direction and better enable them to understand what needs to be done in order to attain the vision, thus facilitating the "framing" of the scripting process (as described in Chapter 2.1 and Sooklal,

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<sup>1</sup> Salience will also be utilized in the current research, but as a means of operationalizing vision focus (i.e. the relative importance of the internal versus external component of vision).

1991) needed to acquire the resources required. Effective visions should also enable entrepreneurs to express the vision to others in a compelling fashion and be more easily understood by stakeholders. Therefore, effective visions, as evidenced by vision complexity, should be associated with stronger support.

**H1 Vision complexity will have a positive impact on support strength.**

It should be noted that while a positive relationship can be posited between strength of support and vision complexity, it is not clear whether this relationship will be more important for differentiation versus integration. Given the exploratory nature of the research, including the absence of well-developed theory and the lack of refined measures, this seems a reasonable position, but the circumstances clearly suggest the appropriateness of a two-tailed test of significance rather than a one-tailed test.

### **Vision Content**

Vision "reach" is a property of vision content concerning the discrepancy between the current state and the state depicted in the idealized future portrayed by the vision. Visions characterized by greater reach should provide greater challenge and stronger motivation to supporters (Conger and Kanungo, 1988). Consequently, greater reach should be associated with stronger support.

**H2 Vision reach will have a positive impact on support strength.**

It was noted during the review of literature concerning vision that the concept of reach has received relatively little theoretical and empirical attention. One consequence of this oversight is that the potential for important relationships between reach and other variables may be overlooked. It is argued here that the impact of vision reach should be expected to extend beyond support strength. Since vision provides a context for an

organization's mission and goals (Morris, 1987), greater reach should also be associated with higher aspirations for the firm. For instance, greater reach should discriminate between "lifestyle" firms and high growth firms. It can therefore be hypothesized that greater vision reach will be associated with higher performance (measured in terms of traditional measures of performance, such as sales, growth in employees, etc.).

### **H3 Vision reach will have a positive impact on firm performance.**

Findings from a qualitative study by Fillion (1990a, 1991) revealed that the central vision of entrepreneurs is comprised of two components: an external component and an internal component. Entrepreneurs whose visions emphasize the internal component can be expected to result in proportionally greater support from inside sources for at least three reasons. First, if the external component is insignificant, internal resources are more likely to be effective in achieving the goals of the firm, whereas the acquisition of external resources (for example, the acquisition of external stakeholders) may conflict with internal goals. Second, those features which make the internal component more developed or "salient" are likely to indicate greater discrepancy between the status quo and the future idealized state; one consequence of this discrepancy is to highlight resource gaps, which, in turn, should provide a clearer framework for the entrepreneur to plan the scripting activities necessary to acquire resources. Finally, the more important component should also provide greater motivation for supporters associated with that component since their roles would also be considered to be of greater importance. Similar logic can be applied to visions favouring the external component.

The foregoing analysis indicates that the content of the vision, in terms of its focus on internal versus external aspects of the firm, can be expected to have an impact on the composition of the support system. Specifically, visions with strong internal components should result in a greater proportion of internal supporters and visions with a strong external component will be associated with a greater proportion of external supporters. It

therefore follows that visions where the two content components are in balance (i.e. the internal and external components are of equal importance) should result in a maximally diverse support system in terms of insiders versus outsiders.

**H4 The degree to which the internal and external components of vision are in balance will have a positive impact on the diversity of inside and outside supporters.**

In summary, this section has produced four hypotheses concerning entrepreneurial vision. One hypothesis concerns vision structure, specifically vision complexity, whereas the remaining three deal with vision content. Of the content-related hypotheses, two are associated with the concept of vision reach, while the third concerns the internal/external focus of the vision. Overall, three of the hypotheses address relationships between vision and support, while one hypothesis posits a direct relationship between vision and firm performance.

### **3.3 SUPPORT-RELATED HYPOTHESES**

Sooklal's grounded theory of visionary leadership (1991) indicates that in order to transform the vision into reality, a leader needs support from a diverse combination of supporters, which he terms a support system. According to his framework, this support system includes value-based and convenience-based supporters, and both insiders and outsiders. Network theory also places great importance on the diversity of the entrepreneur's network. Incestuous networks are more likely to provide information limited in scope, whereas divergent sources can provide differing perspectives and a greater variety of information (Birley, Meyers and Cromie, 1989). Diverse networks should also provide a greater diversity of resources required for the founding process (Aldrich, Rosen and Woodward, 1987). Supporter diversity, then, should have a positive impact on

the strength of support, which is defined here as the amount and quality of support received by the entrepreneur.

Sooklal's notions of value- versus convenience-based and inside versus outside supporters fills an important gap in the entrepreneurial network literature by providing a framework for the conceptualization of diversity. To date, researchers working within a network perspective have lacked an effective framework. Some researchers (e.g. Aldrich, Rosen and Woodward, 1987), building on the work of Granovetter (1973), have interpreted diversity in terms of tie strength. But Granovetter's work did not concern diversity; instead, it showed that weak ties were more important than strong ties in the case of information diffusion. Additional inconsistencies associated with this approach to diversity were discussed during the literature review. Other researchers (e.g. Birley, Meyers and Cromie, 1989) have measured diversity in more traditional terms, such as gender, age, occupation and relationship type. This appears to be a more useful approach to diversity than that provided by tie strength, but suffers from the lack of a theoretically compelling framework.

**H5 Greater diversity of value-based and convenience-based supporters will have a positive impact on strength of received support.**

**H6 Greater diversity of inside and outside supporters will have a positive impact on strength of received support.**

In addition to providing access to more and higher quality resources, greater support system diversity should also broaden the scope of opportunities open to entrepreneurs (Dubini and Aldrich, 1991). Research on industry structure indicates that the quality of the opportunity can have an impact on the subsequent performance of the firm (Porter, 1982; Timmons, Smollen and Dingee, 1990). Additional indirect support for the impact of the quality of the opportunity on venture performance has been provided by research on venture capitalists, which indicates that the nature of the opportunity is one of

the most important funding criteria utilized by these professional investors. Consequently, support system diversity can be expected to have a positive impact upon firm performance.

**H7 Greater diversity of value-based and convenience-based supporters will have a positive impact on firm performance.**

**H8 Greater diversity of inside and outside supporters will have a positive impact on firm performance.**

Central to Sooklal's (1991) grounded theory of visionary leadership was the observation that the support provided by the leader's support system was of fundamental importance in realizing the vision or "dream." Since the firm itself must provide the primary mechanism through which the vision of an entrepreneur is manifested, it can be seen that the impact of provided support must also manifest itself in the performance of the firm if Sooklal's theory is to hold for the case of new ventures. Despite a lack of convincing empirical results, the positive impact of received support on firm performance is also a central tenet of social network research and research concerning support for small firms. Here the theoretical perspective is that of resource dependence, which holds that firms are dependent on their environments for the resources they need to survive and grow. While visionary leadership need not necessarily be concerned with resource dependence, neither is it incompatible with a resource dependence view. Moreover, because gaining access to resources in order to pursue opportunities is a central process of entrepreneurship, and because entrepreneurial visions are concerned with and realized through firms, it is argued here that the assumption of resource dependence strengthens considerably any effort to apply vision-related processes to the entrepreneurial context. Amongst the hypotheses to be tested, therefore, the theoretical support in the literature tends to be strongest for the final hypothesis that support strength will enhance performance.

**H9 Strength of received support will have a positive impact on firm performance.**

This section has identified five hypotheses concerning support. Two of these hypotheses concerned the impact of supporter diversity on strength of received support and two dealt with the impact of supporter diversity on firm performance. A final key hypothesis posited a positive relationship between strength of received support and firm performance.

**3.4 SUMMARY OF THE RESEARCH MODEL**

Sooklal's grounded theory consisted of two central elements: vision and support. A review of the literature was shown to be useful in refining the model and in adapting the model to the context of entrepreneurial small firms. Based on Sooklal's work and the conclusions drawn from this review, seven theoretical constructs have been identified for incorporation into a research model developed to investigate the impact of vision and support on small firm performance. One construct consists of firm performance, while three concern vision and another three deal with support. Of the three vision-related constructs, one reflects vision structure and two are associated with the content of the vision. In the case of support, two constructs are related to diversity and one consists of support strength. These constructs are summarized in Table 3.1.

Nine hypotheses were identified concerning the inter-relationships among the seven theoretical constructs. Of these, four were associated with vision and five with support. These hypotheses are summarized in Table 3.2.



Table 3.1  
Theoretical Constructs Comprising the Research Model

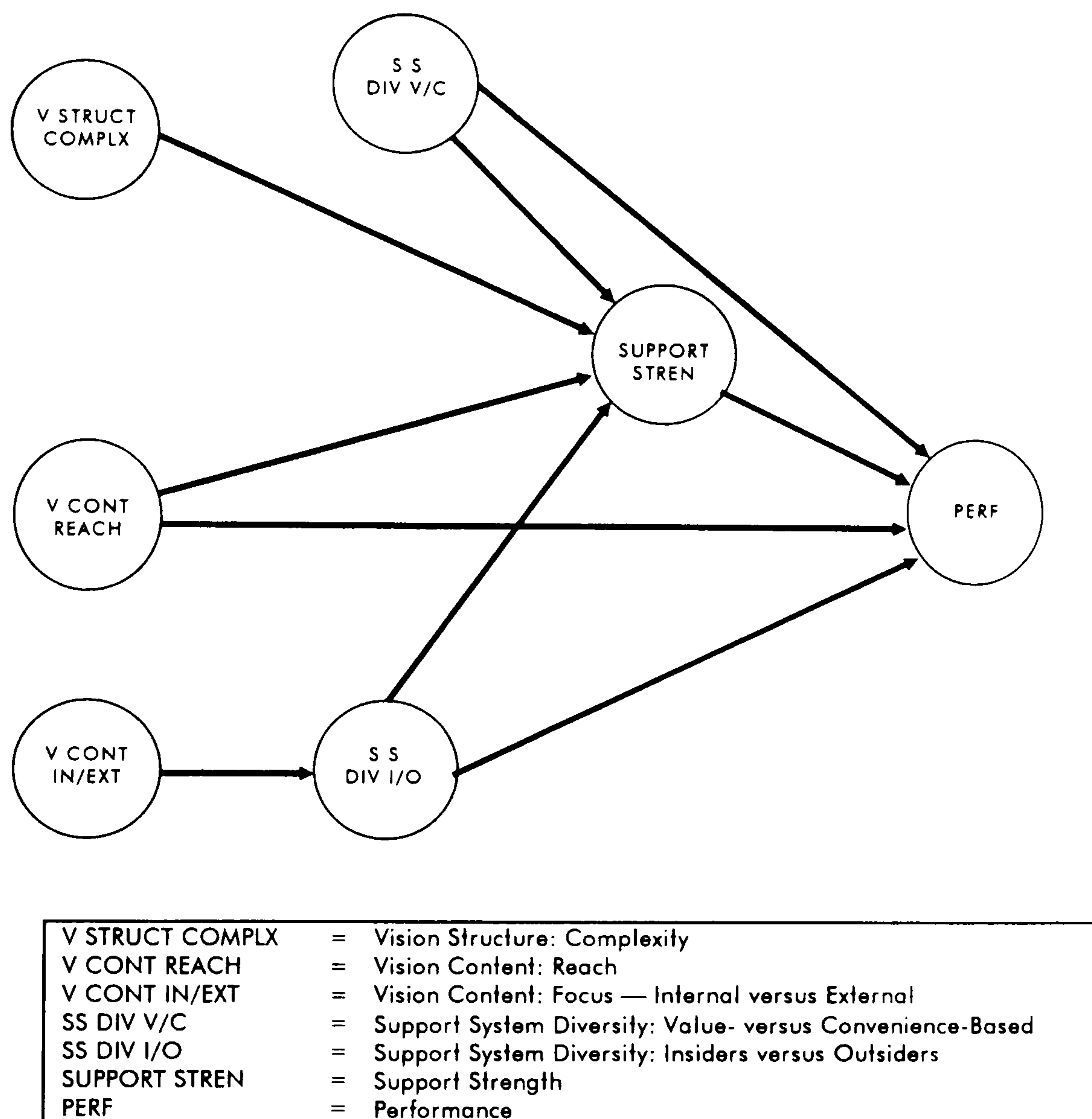
Construct #	Framework Element	Dimension	Construct Label
1	Vision	Structure	Complexity
2	Vision	Content	Reach
3	Vision	Content	Focus: Internal/External Component
4	Support	Diversity	Support System Diversity: Value/Convenience
5	Support	Diversity	Support System Diversity: Insiders/Outsiders
6	Support	Strength	Support Strength
7	Firm Performance	Performance	Performance

Table 3.2  
Summary of Research Hypotheses

Hypothesis Number	Framework Element	Independent Variable	Dependent Variable	Expected Relationship
H1	Vision	Structure: Complexity	Support Strength	Positive
H2	Vision	Content: Reach	Support Strength	Positive
H3	Vision	Content: Reach	Performance	Positive
H4	Vision	Content: Focus	Supporter Diversity: In/Outside	Positive
H5	Support	Diversity: Value/Convenience	Support Strength	Positive
H6	Support	Diversity: In/Outside	Support Strength	Positive
H7	Support	Diversity: Value/Convenience	Performance	Positive
H8	Support	Diversity: In/Outside	Performance	Positive
H9	Support	Strength	Performance	Positive

Table 3.2 is useful in terms of providing an overview of the study's hypotheses from an organizational standpoint, but a path diagram provides a more effective representation of the overall research model and the inter-relationships and propositions it entails. Such a path diagram is depicted in Figure 3.2.

Figure 3.2  
Research Model



### 3.5 OTHER VARIABLES TO BE INVESTIGATED

In addition to examining areas related to vision and support, the literature review also investigated gender and geographic location as potential influential variables. Both of these areas have tended to be under-investigated, making it difficult to draw firm conclusions. There are some indications in the literature that both variables may have an impact, but in rather unspecified ways. For instance, women entrepreneurs may possess different motivations for starting a business (Gatewood, Shaver and Gartner, 1995) and different values (Solomon and Fernald, 1988) which may underlie a vision (Sooklal, 1991),

but there is little empirical or theoretical evidence available to support strong propositions concerning the nature of their effects on vision and support. In a similar vein, research on the impact of geographic location also suggests differences in the motivations of rural versus urban entrepreneurs, and the potential for differences in the composition of their support systems. Compounding the problem is the fact that the findings from the studies that have been undertaken in both areas tend to be mixed and contradictory. In view of the undeveloped nature of research into these areas and the contradictory results which have emerged, the position taken here is that there is insufficient evidence to warrant the incorporation of gender and geographic location in the formal research model. On the other hand, they are sufficiently controversial and interesting to warrant analysis in an exploratory study such as this.

## CHAPTER 4

### RESEARCH METHODOLOGY

#### **Chapter Outline**

- 4.1 Choice of Methodological Approach**
- 4.2 Wold's Method of Partial Least Squares**
  - 4.2.1** Background to Structural Equation Modeling
  - 4.2.2** PLS Versus LISREL
  - 4.2.3** PLS Briefly Described
- 4.3 Overview of Phases 1-4**
- 4.4 Operationalization of Entrepreneurial Vision**
  - 4.4.1** Repertory Grid Technique
  - 4.4.2** Phase 1: Derivation of Repertory Grid Elements
  - 4.4.3** Phase 2: Derivation of Repertory Grid Constructs
- 4.5 Operationalization of Vision-Related Constructs**
  - 4.5.1** Vision Structure: Complexity
  - 4.5.2** Vision Content: Reach
  - 4.5.3** Vision Content: Focus
- 4.6 Operationalization of Support System Constructs**
  - 4.6.1** Supporter Diversity: Value- versus Convenience-Based Supporters
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  - 4.6.3** Support Strength
- 4.7 Operationalization of the Firm Performance Construct**
  - 4.7.1** Performance Indicators Used in Prior Research
  - 4.7.2** Selection of Performance Indicators
  - 4.7.3** Addressing Method Effects
- 4.8 Summary of Epistemic Relationships**
- 4.9 Phase 3**
  - 4.9.1** Purpose
  - 4.9.2** Sample Description
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- 4.10 Phase 4**
  - 4.10.1** Purpose
  - 4.10.2** Sampling Frame
  - 4.10.3** Sampling Procedure
  - 4.10.4** Telephone Procedure & Protocol
  - 4.10.5** Interview Procedure
  - 4.10.6** Interview Protocol

#### 4.1 CHOICE OF METHODOLOGICAL APPROACH

*The purpose of research is to discover answers to questions through the application of scientific procedures. These procedures have been developed in order to increase the likelihood that the information gathered will be relevant to the question asked and will be reliable and unbiased. To be sure, there is no guarantee that any given research undertaking actually will produce relevant, reliable, and unbiased information. But scientific research procedures are more likely to do so than any other method known to man. (Selltiz et al., 1967, p. 2).*

According to Kerlinger (1973), a research strategy includes the methods used to gather and analyze the data and implies how the objectives will be reached. The determination of an appropriate research strategy is, therefore, an important, yet complex, task. The various design choices available are often summarized within a particular classification scheme, such as qualitative versus quantitative or experimental versus ex post facto. Unfortunately, no satisfactory single classification scheme exists (Emory, 1976). Emory (ibid.) identifies no fewer than seven competing schemes in the literature; these differences can be attributed to the varying perspectives from which a study can be viewed, such as the degree to which the research problem has been crystalized, the research environment, the time dimension, the mode of data collection, etc.. This section will summarize the major considerations affecting the choice of a methodological approach.

The first important issue to be considered concerns the overall objectives of the research, which reflect, in no small part, the degree to which the research problem has been crystalized. The current study can hardly be characterized as being grounded in strong theory; at best, the discipline of entrepreneurship can be regarded as emerging from its infancy and there are no well established theories of entrepreneurship as compared to, say, the physical sciences. On the other hand, the current study is not entirely devoid of theoretical underpinnings. A theoretical model has been developed which employs constructs and posits relationships that have precedence in the literature. This model seeks to explain variation in entrepreneurial performance through assumed causal relations amongst constructs. In addition, the theory underlying the model is

adequate to specify not only the existence of relationships between constructs but also the direction of those relationships. A major objective of the research, then, is to test hypotheses concerning the existence of these relationships.

If one views exploratory research versus research designed to permit inferences about causality as opposing ends of a continuum rather than a dichotomy, then the foregoing arguments suggest the current study resides towards the latter end of the spectrum. At the same time, however, there are several factors present which place the current study at the early or exploratory stage within the range of studies concerned with causality. First, as mentioned above, there is no general or strong theory available to guide the research. Although a theoretical model has been developed, it is very much tentative since it is newly developed and draws on a diverse range of disciplines. In addition to lacking strong theory in support of the relationships amongst constructs, the current study is also characterized by a shortage of established measures with proven reliability and validity. Nearly all of the measures utilized in the study were, due either to the absence of pre-existing measures or to demonstrated weaknesses associated with them, newly developed and therefore untried and untested. Taken together, these factors indicate that although the research investigates causal relationships, it does so in a preliminary, rather than definitive, fashion.

The second key issue affecting the design of the research stemmed from the characteristics of the data required to investigate the research question. First, the information needed could only be obtained from entrepreneurs. This suggested a need to minimize the time and effort demanded of the participants, making a field study a preferred research environment. Second, a considerable volume of data was required from each entrepreneur. Vision, for example, was operationalized using repertory grid technique; each grid required 96 data points, and this was used to measure only one of several constructs. Third, information concerning an entrepreneur's key supporters is sensitive in nature and often is not disclosed until an element of trust has been established

between the researcher and the participant. (This obstacle was anticipated from the outset, but was confirmed during the small pilot study comprising phase three of the research.) Both the volume of data and its sensitive nature suggested that the response rate to a mail survey would be at best problematic and at worst, dismal. In short, personal interviews were required. Moreover, the interviews should not be entirely rigid or structured since they would be required to sustain interest over a prolonged period and to facilitate the development of a bond of trust.

A third major issue that served to guide the design of the research arose from the scientific nature of the investigation — that is, an overriding concern for replicability. This concern was not restricted to one particular aspect of the research design but instead permeated the entire decision process. Virtually all decisions concerning methodology were made with replicability given highest priority. This objective, however, is perhaps most apparent in the decision to utilize semi-structured rather than unstructured interviews. It can be noted that concern for replicability also serves as an important standard for the written description of the research, which hopefully is evident in this presentation.

The fourth major consideration influencing design was the power of the researcher to affect the variables under study. In a formal experiment the researcher is able to control and manipulate the variables under study. In the current research, however, no such control was possible and the design was *ex post facto* in nature. Under such circumstances it is necessary to hold various factors constant through judicious sampling and appropriate analysis of the data. In addition, it was desirable that the sample be representative of the population of entrepreneurs. Consequently, a (stratified) random sample was employed. This decision, in combination with the interview methodology discussed above, resulted in a sample of less than optimal size because of the considerable travel and expense involved. Given the early stage of the research, however, it seemed imprudent and premature to request and spend the substantial amount of funding that would be necessitated by a large-scale sample, and overall the benefits of a smaller, but

random, sample were felt to outweigh those of a larger, but poorly selected (e.g. by restricting the sample to firms in a convenient location in an effort to reduce costs) and possibly unreplicable, sample.

The current study is also cross-sectional rather than longitudinal in design. It is well known that strong causal inferences cannot be made in cross-sectional designs. Moreover, given the dynamic nature of the construct "firm performance," any effect sizes associated with relationships between predictor variables and performance are likely to be attenuated by the attempt to capture these relationships in a single, static, "snap-shot" approach. The decision to employ a cross-sectional design, therefore, should be viewed as a compromise dictated largely by sampling considerations, cost and feasibility. A proper longitudinal design would likely entail several visits to each entrepreneur, beginning when the entrepreneur's vision is initially formed and before the business has been formally initiated, and extending at least five years beyond the establishment of the firm (to provide meaningful performance data). Aside from the problem of identifying such firms in their earliest stages (and thereby achieving a representative sample), costs escalate rapidly under this scenario. Since some participants would be expected to drop out over the duration of the project, it can be seen that a longitudinal design would have also necessitated an even larger sample. Time constraints arising from the university's degree regulations also rendered a proper longitudinal design infeasible.

The fifth and, for the purposes of this section, final issue concerning research design was the complexity of the research model, which involved theoretical constructs which cannot be directly measured and interdependent relations amongst these constructs. Since the choice of analytic technique is discussed at length in the next section, it will not be addressed further here. Suffice it to say that the complexity inherent in the research model suggested the need for multivariate analytical tools.



## **4.2 WOLD'S METHOD OF PARTIAL LEAST SQUARES (PLS)**

### **4.2.1 Background to Structural Equation Modeling**

Dramatic increases in computing power and the rapid proliferation of computers have provided researchers with access to increasingly sophisticated data analytic techniques. Such sophistication does not guarantee good research, of course (see Freedman, 1987, for a well known and forceful critique), but these more complex methods nevertheless are better able to address complex phenomena in natural settings (Hair et al., 1992). Fornell (1982) has distinguished between two generations of multivariate statistical techniques. First generation techniques tended to be better-suited for descriptive, atheoretical research and often restricted multivariate to one side of the equation. They included such familiar methods as multiple regression, factor analysis, principal components analysis, cluster analysis and discriminant analysis. According to Fornell (1984), the requirements for a method to be a member of the second generation of multivariate techniques are:

... that the method has a capability to analyze (1) multiple criterion and predictor variables, (2) unobservable theoretical variables, (3) errors in measurement..., and (4) confirmatory applications. By confirmatory, it is merely implied that the analyst must make some [emphasis in original] explicit substantive (theoretical) and measurement assumptions or hypotheses that can be tested statistically.

While some first generation methods can address one to three of the aspects above, none is well equipped to deal with all four. For example, traditional factor analysis handles unobservable variables but is not confirmatory; multiple regression can be applied in a (weak) confirmatory sense by testing the significance of estimated parameters and the regression equation, but it is limited to a single observable criterion variable. [p. 13].

In the current study all four of the capabilities cited by Fornell are needed to analyze and test the research model developed. First, the proposed research model utilizes multiple predictor and criterion variables. Second, the variables depicted in the research model are abstract, theoretical concepts. Third, the research setting is one where measurement error is virtually assured. Fourth, a major objective of the research is to

statistically test hypothesized relationships among variables in the research model, and also relationships between the theoretical variables and their empirically-based measures.

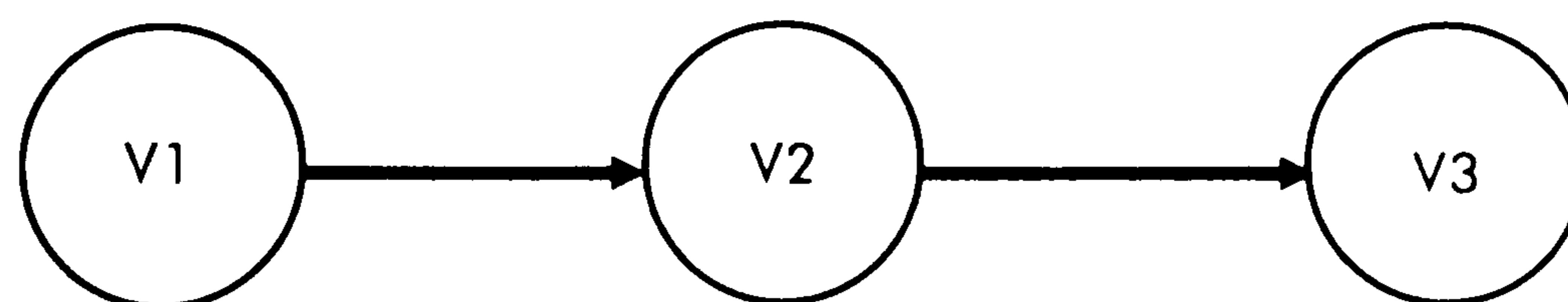
Structural equation modeling (SEM) is by far the best known family of models represented by the second generation. SEM owes its roots to the evolution of multiequation modeling developed in econometrics and the merging of measurement principles from the disciplines of psychology and sociology. Included under the broad rubric of SEM are covariance structure analysis, latent variable analysis, confirmatory factor analysis, path analysis and various dedicated software packages such as LISREL, AMOS, EQS, COSAN and PLS. While first generation techniques have been broadly categorized as "exploratory," SEM tends to be confirmatory and more geared toward hypothesis testing (Bentler, 1982). It is important to note, however, that some SEM techniques are more confirmatory than others (Fornell, 1982). Canonical correlation analysis can be viewed as a bridge between many first generation techniques and SEM since multiple regression, principal components, analysis of variance, multiple analysis of variance, and discriminant analysis are special cases of canonical correlation, which in turn is a special case of SEM (Fornell, 1982; Barclay, Higgins and Thompson, 1995).

Structural equation models include two subsets of models. The first is termed the "structural" model; this specifies the relationships or paths between several variables or constructs. These regression-based structural relationships are typically expressed in path diagram format and, unlike multiple regression, can include multiple independent (predictor) and dependent (criterion) variables. One important feature of SEM methods (also differentiating them from multiple regression) is that the relationships between variables can be interrelated (i.e. a dependent variable in one relationship can also become an independent variable in other relationships). Variables which have one or more paths leading to it (i.e. dependent variables) are termed "endogenous" variables. Variables which have no paths leading to it and thus are not influenced by other variables

in the model are termed “exogenous” variables (Asher, 1983); exogenous variables are synonymous with independent variables.

Figure 4.1 depicts a simple interrelated model where Variable #2 is both a dependent variable (in the relationship between Variable #1 and #2) and an independent variable (in the relationship between Variable #2 and #3). Overall, the example in Figure 4.1 contains one exogenous (V1) and two endogenous (V2, V3) variables. In a manner consistent with the path analytic tradition, the total effect of predictor variables on a criterion variable can be decomposed into direct and indirect effects. There are exactly as many structural equations in a structural model as there are dependent (endogenous) variables; these regression-based structural equations are solved “simultaneously” to provide an overall model of best fit with the data.

Figure 4.1  
Example of an Interrelated Structural Model



SEM can easily accommodate directly measured variables but much of the power of the methodology lies in its ability to incorporate latent variables, which are abstract, theoretical constructs that cannot be directly observed or directly measured (Sullivan and Feldman, 1979; Bentler, 1982; Byrne, 1989). Since most research in management and the social sciences is concerned with relationships between theoretical constructs not directly observable (Hughes, Price and Marris, 1986), the independent and dependent variables in the structural model are typically latent variables.

The second sub-model associated with SEM methods is the “measurement” model, which specifies the relationships between the latent variables in the structural model and their observable indicators. Because a latent variable cannot be observed or measured directly, assessment of the construct is obtained indirectly through the measurement of a set of observed variables. These measured scores are termed “observed,” “manifest,” or “indicator” variables (Byrne, 1989).

In first-generation techniques (e.g. multiple regression), two strategies were commonly adopted to link an observed or “proxy” variable to its abstract construct. The first strategy involved carefully selecting a single measurable variable that the researcher believed captured the important facets of the construct. The second strategy was to construct a composite index score, usually formed by adding the scores from two or more observable indicators (Hughes, Price and Marris, 1986). An important weakness of these approaches, however, is that the indicator scores derived by both of these methods usually contain at least moderate amounts of error (ibid.).

Unlike first generation techniques such as multiple regression, an important feature of SEM is that a latent variable can be represented by multiple indicators. This is advantageous since the use of more than one indicator permits the modeling of measurement error. As Bagozzi and Phillips (1982, p. 460) have noted, “When measurements and concepts do not correspond perfectly, the use of traditional procedures can result in spurious confirmation of inadequate theories, tentative rejection of adequate theories, and/or distorted estimates of the magnitude and relevance of actual relationships.” Although measurement error can be modeled with as few as two indicators, most researchers advocate the use of three or more indicators for most constructs because this facilitates the elimination of nonrandom error (Sullivan and Feldman, 1979; Holye and Smith, 1994). In the measurement model, the contribution of the individual multiple indicators to the one underlying theoretical construct is assessed through some variant of a factor-analytic process (Byrne, 1979; Diamantopoulos, 1994; Hoyle and Smith, 1994).

The links between the theory (latent or theoretical constructs) and the data (manifest indicators) have been described as "correspondence rules," "auxiliary theory," and "epistemic relationships." (Bagozzi and Phillips, 1982; Fornell, 1982). As Bagozzi (1984) so aptly pointed out, correspondence rules serve as auxiliary hypotheses concerning theoretical mechanisms existing between theoretical terms and empirical observations. Thus, an important conceptual benefit of SEM is that it requires a mode of thinking about theory construction, measurement problems and data analysis that is more holistic and rigorous (Bagozzi, 1984; Hughes, Price and Marris, 1986). A second, technical and more obvious, benefit is that it provides researchers with a powerful method for estimating the relationships between unobservable constructs and for examining reliability and various forms of validity (Bagozzi, 1984; Hughes, Price and Marris, 1986). These kinds of benefits have perhaps been expressed most powerfully by Fornell:

A fundamental feature of second generation multivariate analysis lies in the flexible interplay between theory and data. When theoretical knowledge is well developed, it is possible to let this knowledge have greater bearing on the analysis. When one has less confidence in theory, it is possible to let the data play a larger role. At the same time, second generation methods can also be used to perform "first-generation type analysis," because they are general models of the earlier methods...

Specifically, second generation methods combine theoretical and empirical knowledge by (1) modeling errors in observation (measurement or nonsampling error), (2) incorporation both theoretical (unobservable) and empirical (observable) variables into the analysis, (3) confronting theory with data (hypothesis testing), and by (4) combining theory and data (theory building). (1984, p. 4).

#### **4.2.2 PLS Versus LISREL**

An important step in the structural equation modeling process is the selection of a computer program for estimation (Hair Jr. et al., 1992). By far the most popular and widely implemented approach (Fornell and Bookstein, 1982b; Pedhazur, 1982; Diamantopoulos, 1994) to SEM is the maximum likelihood factor analysis procedures developed by Karl Jöreskog (1973) and the associated computer program LISREL (Jöreskog

and Sörbom, 1989). Indeed, it has been observed that LISREL has become almost synonymous with SEM (Hair, Jr. et al., 1992). Since other SEM protocols exist which impose different assumptions about theory, data and the ties between latent variables and their indicators (Fornell and Bookstein, 1982a) and since it is highly unlikely that all research problems amenable to SEM are also suited to LISREL (ibid.), it would appear that the selection of an SEM protocol is an important yet often neglected step.<sup>1</sup>

A lesser known, more recent and fundamentally different approach to SEM modeling is Wold's method of Partial Least Squares (PLS). Working in the field of econometrics, Herman Wold (1982, 1985a, 1985b) developed the method of partial least squares to reflect theoretical and empirical realities in the social sciences, where, because these environments tend to be characterized by low information, "soft" theory and "soft" empirical observations, the stringent assumptions of traditional SEM approaches such as LISREL often do not apply (Dijkstra, 1983; Falk and Miller, 1992). Since LISREL and PLS differ substantially in the assumptions they make concerning measurement, distributions and theory, it was necessary to compare the approaches in order to determine the method most appropriate for the current study.

The object of this section is not to present an exhaustive comparison of these two approaches, as several authors have already undertaken this task (see, for example, Fornell and Bookstein, 1982a, 1982b; Lohmöller and Wold, 1982; Wold, 1982; Dijkstra, 1983, 1985; Wold, 1985b; Falk and Miller, 1992). Instead, the comparative issues relevant to and sufficient for guiding and demonstrating the choice of approach in the current study will be emphasized. The differences between PLS and LISREL derive from the estimation methods they employ and are organized in terms of purpose, assumptions and practical considerations.

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<sup>1</sup> Fornell and Bookstein [1982] have documented the major problems associated with LISREL.

Wold (1982) emphasizes that LISREL and PLS should be viewed as complementary, rather than competitive, techniques. In terms of purpose, LISREL is parameter-oriented and aims for optimal accuracy of the estimates of structural parameters. As a maximum likelihood (ML) method, LISREL takes advantage of the fact that the theoretical covariance matrix is an algebraic function of the parameters, and estimates model parameters by minimizing the discrepancies between the empirical covariance matrix and the covariance matrix deduced from the model structure and parameter estimates (Wold, 1982). Put another way, it attempts to recover the structure (as measured by the covariances) of the observed data (manifest variables) in terms of the parameter matrices (Fornell, 1984). By a general ML theorem, the parameter estimates generated by LISREL possess optimal accuracy (Wold, 1985b).

In contrast with LISREL, PLS is a least squares (LS) method, the purpose of which is prediction, given a causal structure (Wold, 1982; Fornell, 1984). Whereas ML provides optimal parameter accuracy, LS results in optimal predictive accuracy (Lohmöller and Wold, 1982). Whereas LISREL attempts to explain observed covariance, PLS tries to account for variance by minimizing error variance at the observed or theoretical level, depending on indicator mode (Fornell and Bookstein, 1982b; Fornell, 1984).<sup>2</sup> In order to predict case values of the observable indicators, PLS makes explicit, yet deliberately approximate, estimates of the case values of latent variables. LISREL provides consistent (i.e. approaching the true value) estimates of the model parameters, whereas those of PLS are biased, but consistent at large (i.e. they tend to be consistent as the sample size and the number of indicators increase) (Lohmöller and Wold, 1982; Fornell, 1984; Wold, 1985b). It should also be noted that PLS parameter estimates tend to approximate those of LISREL (Dijkstra, 1985) and can be the same under certain conditions (Fornell and Bookstein, 1982).

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<sup>2</sup> The indicator mode issue refers to the choice between reflective and formative modes. This issue will be explained more fully in the next section dealing with the properties of PLS.

A second major difference between LISREL and PLS concerns assumptions about the factor structure of latent variables. Constructs in LISREL are indeterminate in the factor analytic tradition, containing surplus, untapped meaning. In PLS, however, constructs are estimated as weighted aggregates of their indicators and are completely defined by their indicators (in the tradition of principal components). Because of its superior ability to model measurement error, the factor analytic approach of LISREL is generally viewed as superior by the psychometric literature.

Indeterminacy also gives rise to important problems, however. First, indeterminate factors can have improper loadings leading to negative variances; such results are not interpretable (Fornell and Bookstein, 1982a). PLS avoids indeterminacy; hence, the interpretation of latent variables and their connection with manifest variables is straightforward (Wold, 1985b). This latter attribute of PLS is particularly desirable in exploratory research (Wyse, 1992). A second problem associated with indeterminacy is that an infinite number of latent variables may have the same pattern of correlations with the observed variables and yet be only weakly or negatively correlated with each other. In order to rule out conflicting explanations, strong a priori knowledge is required. LISREL, therefore, is best suited for hypothesis testing in the presence of strong, well-developed theory. PLS, on the other hand, is more applicable in situations where prior information is wanting and theory is less developed (Fornell and Bookstein, 1982b).

A third important difference between LISREL and PLS stems from assumptions concerning the distribution of residuals. In LISREL and other maximum likelihood methods the manifest variables are assumed to be jointly governed by a specified (usually normal) multivariate distribution subject to independent observations. PLS is distribution free (except for predictor specification<sup>3</sup>) and does not require independence of observations (Wold, 1985b); consequently, data can be scalar, ordinal or categorical. The assumption

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<sup>3</sup> The inner (structural) model is assumed to constitute a causal chain system with uncorrelated residuals, and the outer (measurement) model residuals are assumed to be uncorrelated with the latent variables and with the inner model residuals (Sellin, 1986).



(from regression) of uncorrelated errors does, however, apply to PLS. The fact that PLS does not require the "hard" distributional assumptions of LISREL caused Wold to label his approach "soft modeling." As Lohmöller and Wold note, however, "There is nothing vague or "fuzzy" about soft modeling; in establishing the model and the estimation algorithm the argument is entirely rigorous." (1982, p. 8).

Practical considerations also differentiate between LISREL and PLS. LISREL relies on large sample sizes in order to obtain accurate parameter estimates and simulation studies have confirmed that LISREL is not compatible with small sample sizes (Fornell, 1983). Moreover, LISREL relies on the chi-square goodness-of-fit statistic to assess the degree to which the overall model (both structural and measurement) predicts the observed covariance matrix.<sup>4</sup> Unfortunately, the chi-square measure is sensitive to departures from multivariate normality (Diamantopoulos, 1994) and also sample size (Tanaka, 1987). With small samples the test is not powerful enough to reject most models and with large samples the model will nearly always be rejected (Hughes, Price and Marris, 1986; Falk and Miller, 1992). For this reason, the recommended sample size for LISREL is restricted to a fairly narrow range of between 100 and 200 cases. In contrast, PLS is capable of working with both small and large samples (Lohmöller and Wold, 1982).

In summary, both LISREL and PLS are structural equation methods capable of analyzing models involving interdependent relationships between latent variables and measurement error. LISREL provides optimal parameter estimates, but requires large samples and strong distributional assumptions. Its factor-analytic approach (in the tradition of classic "true-score" measurement theory) makes it well-suited to hypothesis testing in the presence of strong, well-developed a priori theory. PLS trades off parameter efficiency for predictive accuracy, simplicity and fewer assumptions. Following a principal components approach, latent variables are specified as exact linear combinations of their

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<sup>4</sup> Although there are other measures of fit available, chi-square is the only statistically-based measure (Hair et al., 1992).

measures and are completely defined by their indicators; thus, they are easily interpretable. PLS makes no distributional assumptions, is amenable to small samples, and is more appropriate in exploratory research settings characterized by low information and embryonic theory.

In the current study, the following characteristics were considered of paramount importance in deciding between the two SEM approaches. First, the overall research model is not preceded by strong theory. In the case of the structural model, several hypothetical relationships are new in the sense that they are developed by the author by drawing on research from diverse fields of study; other hypothesized relationships have received little support (and in some cases, contradiction) in the empirical literature. In the case of the measurement model, many of the manifest indicators are newly developed and untested, either due to the absence of a precedent or the demonstrated failure of existing measures. Both models, then, must be characterized as more exploratory than confirmatory.

A second, important aspect of the current research is that the sample size is small due to the volume of data collected (mainly attributable to the repertory grid) and the sensitive nature of support relationships. This latter problem dictated the need for face-to-face interviews of sufficient length and depth to permit the building of trust between the researcher and interviewee. A final consideration in the current research setting was that the population distributions were unknown and could not be specified; moreover, to characterize the data as representing a multivariate normal distribution would have required an assumption of "heroic" proportion. In conclusion, each of the foregoing characteristics of the current study favours the selection of PLS for the purpose of analysis; consequently, PLS was adopted as the method of choice.

### 4.2.3 PLS Briefly Described

To date PLS has already been applied in a wide variety of disciplines, including economics, political science, education, chemistry, marketing, medicine (Fornell and Bookstein, 1982a; Wold, 1985b), management information systems (e.g. Wyse, 1992) and even entrepreneurship (e.g. Fornell, Lorange and Roos, 1990, Davidsson, 1991). Several versions of PLS computer programs exist. The software program utilized for the current study was PLS-PC Version 1.8 (Lohmöller, 1986, 1987), which is the most widely implemented version of PLS. This section will provide a brief overview of the workings and properties of PLS.<sup>5</sup> Topics selected for coverage include representation of the PLS model, the nature of epistemic relationships, and the estimation procedures utilized in the algorithm.

A PLS model consists of two sets of linear equations. The structural equations, or "inner model," represent the relationships or paths between latent variables, and may be expressed as:

$$\eta = B\eta + \Gamma\xi + \zeta$$

- where
- $\eta$  is an (m x 1) column vector representing m endogenous constructs,
  - B is an (m x m) matrix relating endogenous constructs among themselves,
  - $\xi$  is an (n x 1) column vector of n exogenous constructs,
  - $\Gamma$  is an (m x n) matrix of coefficients relating exogenous and endogenous constructs, and
  - $\zeta$  is an (m x 1) column vector of residuals representing errors in the structural equations.

The measurement equations or "outer model" represent the epistemic relationships between the latent variables and their manifest indicators. (PLS generally assumes that  $\eta$

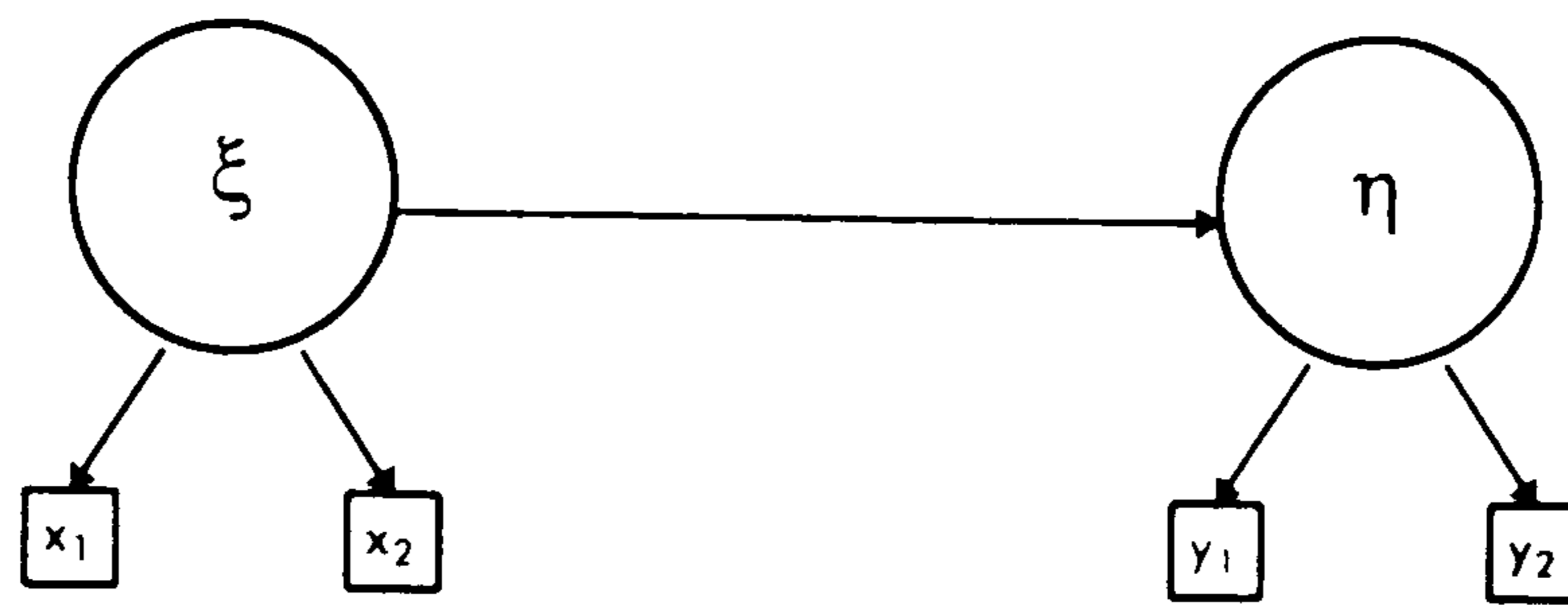
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<sup>5</sup> A full accounting of PLS is beyond the scope of this work; readers interested in a more complete description are referred to Wold (1982, 1985a, 1985b), Lohmöller (1989), and Dijkstra (1985).

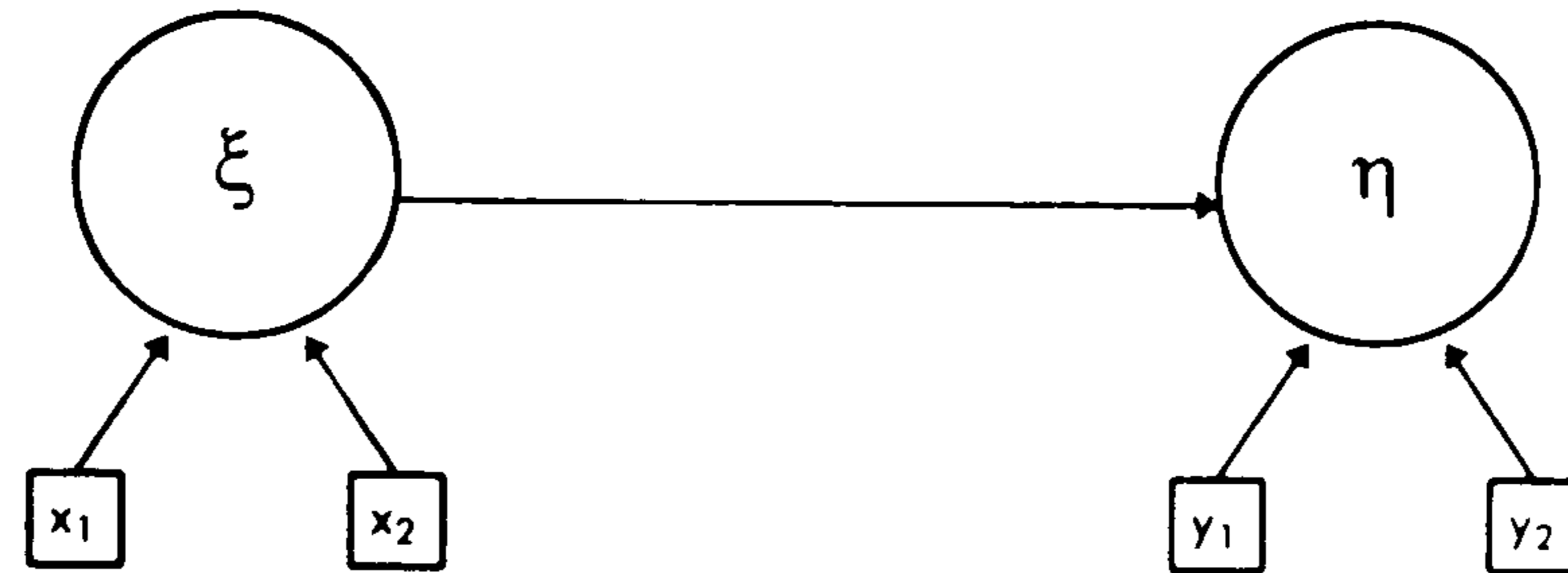
and  $\xi$  are measured indirectly by means of indicators.) In the case of the outer model, PLS is particularly flexible in that relationships between constructs and observables can be modeled in two ways or "modes," *reflective* mode and *formative* mode. Figure 4.2 provides an illustration of the alternate approaches.

In reflective mode, the arrows in the path diagram are drawn outwards, from the construct to the indicators. Reflective indicators are typical of factor analysis models, where the latent construct is viewed as an underlying factor giving rise to, or "causing," the observed measurements; put another way, the latent variable is specified as a linear predictor of the manifest variables, and the indicators, therefore, are viewed as manifestations of the effects of the latent variable. An example might be a set of attitude items assumed to reflect an underlying attitude dimension. In reflective mode factor loadings are identified that represent the predictable, common variance among the manifest variables. It is useful to note that in the special case where there is only one latent variable, the application of the reflective mode will provide a result identical to the first principal component of the indicators. When reflective indicators are used the residual variances in the measurement equations are minimized; consequently reflective mode is most suitable when the study objective is to account for observed variances.

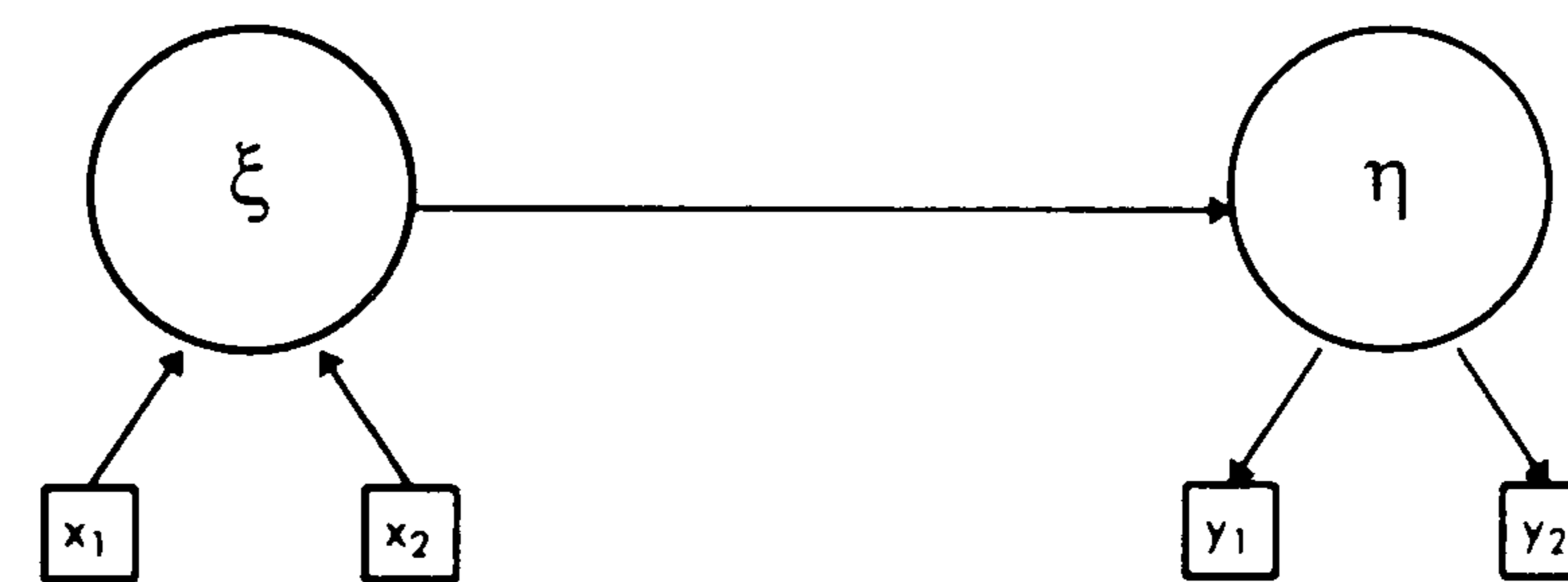
Figure 4.2  
Modes of Relating Constructs to Empirical Indicators



Mode A: Reflective Mode



Mode B: Formative Indicators



Mode C: Formative and Reflective Indicators

In reflective mode, the outer model or measurement equations are given by:

$$y = \Lambda_y \eta + \varepsilon$$

$$x = \Lambda_x \xi + \delta$$

where  $\eta, \xi$  are as previously defined,

$y$  is a  $(p \times 1)$  column vector of the  $p$  measures of the endogenous constructs,

$\Lambda_y$  is a  $(p \times m)$  matrix of factor loadings or simple correlations between observable measures and their respective endogenous constructs,

$\varepsilon$  is a  $(p \times 1)$  column vector of endogenous errors in measurement,

$x$  is a  $(q \times 1)$  column vector of  $q$  measures of the exogenous constructs,

$\Lambda_x$  is a  $(q \times n)$  matrix of factor loadings between observable measures and their respective exogenous constructs, and

$\delta$  is a  $(q \times 1)$  column vector of exogenous errors in measurement.

The second way in which relationships between unobservables and their indicators can be modeled is known as “formative” mode. Here, the arrows in the path diagram are inner-directed, pointing from the manifests to the latent variable. In formative mode the indicators are viewed as “forming” or “preceding” the construct; they do not, however, explain the correlations between their indicators, and theory may not even require nonzero correlations among the indicators. These latent variables are viewed as effects of their indicators, rather than causes, and have sometimes been labeled “emergent” variables (Cohen et al., 1990). Examples of emergent variables include Gross Domestic Product, the marketing mix, socioeconomic status, cardiac risk and other constructs that are typically viewed as being defined by their indicators.

When formative mode is used, PLS assigns a set of factor weights to the manifests that maximally predict the latent variable as a regressed variate. Thus, in contrast to reflective mode where the latent variable is specified to be a predictor of the manifests, formative mode specifies the manifests to be linear predictors for the latent variable. Latent variables can then be viewed as indices produced by the observable variables. It is again useful to note that in the special case where formative mode is used in a model with two latent variables, PLS produces a result identical to the first canonical correlation. In formative mode, PLS minimizes residuals in the structural relationships; therefore, formative indicators should be used when the objective is the explanation of variances in the unobserved constructs.

In formative mode the measurement equations can be represented as:

$$\eta = \pi_y \gamma + u_y$$

$$\xi = \pi_x \chi + u_x$$

where  $\eta, \xi, \gamma, \chi$  are as previously defined,

$\pi_y$  is an  $(m \times p)$  matrix of regression weights for endogenous constructs,

$\pi_x$  is an  $(n \times q)$  matrix of regression weights for exogenous constructs,

$u_y, u_x$  are  $(m \times 1)$  and  $(n \times 1)$  column vectors, respectively, of inner residual scores which are assumed to be zero for estimation purposes.

It should be noted that PLS also accommodates a third or "mixed" mode model, where some latent variables entail reflective indicators and others formative indicators.<sup>6</sup> Fornell and Bookstein (1982a) argue that choice of indicator mode should be guided by three considerations: study objective, theory and empirical contingencies. Cohen et al. (1990) provide a useful discussion of the issues concerning how the underlying unobservable construct is conceptualized. Lohmöller (1981) also suggests several rules for choosing between modes. In the current study it could be argued that some of the epistemic relationships should be viewed as formative rather than reflective (in particular, support strength and performance). Other considerations, however, pointed to the use of reflective indicators. The first of these involved the study's objectives. The early stage of the research, requiring the use of newly-developed and untried measures for the constructs, called for greater emphasis to be given to the measurement model, since it would be meaningless to draw conclusions concerning the structural relationships in the absence of adequate measurement. Empirical considerations also suggested the use of reflective mode. In formative mode, sample size and indicator multicollinearity affect the stability of indicator coefficients, which in this mode are based on multiple regressions. In reflective mode, however, indicator coefficients are based on simple regressions and are not affected by multicollinearity (Fornell and Bookstein, 1982a). Given the small sample used in the current study and the exploratory stage of the research, it was decided to model epistemic relationships using reflective mode.

Once the structural and measurement models have been specified, PLS estimates the structural and measurement parameters using ordinary least squares simple and

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<sup>6</sup> It should be noted, however, that the epistemic relationships for all manifest variables within a "block" (i.e. associated with any one particular latent variable) must be specified as the same direction (i.e. reflective or formative).

multiple regressions. Estimation can be viewed as proceeding in two steps. First, is the calculation of factor scores. Here, the latent variables are estimated in an iterative fashion as linear composites of their associated manifests. The second stage involves the non-iterative estimation of the structural coefficients and loadings, taking into account the design of the inner model. The least squares criterion requires minimization of the residuals on all variables, latent and manifest. PLS considers the parameter estimates stable when the parameter changes stabilize at the fifth decimal place.

The name "partial least squares" refers to the fact that PLS partitions complex models (i.e. involving more than one construct), so that at any given time, the iterative procedure is working with only one construct and a subset of measures related to that construct or to an adjacent construct (Sellin, 1986; Barclay, Higgins and Thompson, 1995). It is this segmenting of models that allows PLS to work with small sample sizes. Since only simple and multiple regressions are used, the sample size required is that sufficient to support the most complex multiple regression. Generally, the latter will be either: (1) the number of indicators on the most complex formative construct, or (2) the largest number of paths leading to an endogenous construct. Applying the conservative rule of thumb from regression of 10 cases per predictor, the minimum sample size becomes 10 times (1) or (2), whichever is greater.

PLS output is similar to path analysis and principal components analysis. The inner model coefficients represent standardized path or regression coefficients, since latent variable estimates are always standardized to unit variance. Loadings are provided for the paths from the latent variables to their manifest indicators. PLS also reports  $R^2$ , direct, indirect and total effects. Standard errors are not reported because PLS makes no assumption concerning normality, but jackknifing can be used to produce standard error estimates for the parameters, and to test for statistical significance.



### **4.3 OVERVIEW OF PHASES 1-4**

#### Phase One

A mailout survey was sent to a random sample of 150 entrepreneurs in Newfoundland and Labrador, compiled from several lists and directories of businesses. The purpose was to elicit a set of "common" grid elements consisting of well-known firms representative of generic business strategies. The survey had been pre-tested (and refined) prior to the mail-out using a convenience sample of 10 owners or managers of local small businesses.

#### Phase Two

A pilot study was undertaken consisting of interviews and grid elicitation using a convenience sample of 12 entrepreneurs (including one manager) in St. John's, Nfld. (the majority of the sample were previous winners of awards for entrepreneurship or exporting). The purpose of this phase was to elicit grid constructs and gain additional experience in administration of the grid. It was expected (and subsequently determined) that this phase would show that it is reasonable to supply a set of common constructs (i.e. a standardized grid instrument) for subsequent portions of the study. The results of this phase were consequently employed to derive the standard constructs. This phase also served to check the validity of the elements elicited in Phase One.

#### Phase Three

Phase three consisted of a pilot study undertaken to validate the appropriateness of the intended sampling frame, serve as a check on the effectiveness of the structured interview methodology, and provide preliminary information on the nature and scope of support systems to ensure that the methodology would be manageable. In order to ensure that the firms studied were sufficiently "entrepreneurial," a sample of 12 entrepreneurs was randomly drawn from the 1990-94 lists of nominees of a major provincial "Entrepreneur of the Year" award. An interview was required with each entrepreneur in order to establish sufficient rapport to request information concerning his/her close supporters. This interview was also utilized to obtain the entrepreneur's (brief) narrative of the business, administer the repertory grid, and collect demographic data and information concerning the support system. Several supporters were also interviewed during this phase.

Results from this phase indicated that vision was not important to many of firms in the sample, even though they had been nominated for an award for entrepreneurship. Vision did, however, appear to be important in the case of new business start-ups and those firm which were attempting to make bold strategic leaps. Phase 4 was accordingly designed to draw a new sample of newly-incorporated firms, where the vision construct and the strategy formation process described in Hanlon and Scott (1995) were likely more applicable. The decision to adopt a different population of firms in Phase 4 results in somewhat of a mismatch between the "high performing" sample employed in Phase 2 to elicit grid constructs and the Phase 4 sample, where the constructs are applied to a sample of start-ups across a range of possible performances. This could be considered problematic if two conditions were met: a) the difference in performance between the two samples is substantial, and b) the firm-related constructs employed by entrepreneurs varies according to performance. Although no performance data were collected for Phase 2 firms, a subsequent check for potential differences in performance between the two samples was carried out using Phase 3 firms as a proxy for Phase 2 firms; no significant differences were found.<sup>7</sup>

#### Phase 4

The purpose of Phase 4 was to test the research model developed in Chapter 3. A random sample of 25 rural firms and 25 firms from St. John's metropolitan area was drawn from a list of all firms incorporated in 1993 in the province of Newfoundland. Each entrepreneur was contacted by telephone in order to request cooperation and an interview, and subsequently was interviewed personally using a semi-structured format to obtain information concerning his/her supporters; during the interview a repertory grid was also administered. Results were analyzed using Wold's method of Partial Least Squares, a form of structural equations modeling.

#### **4.4 OPERATIONALIZATION OF ENTREPRENEURIAL VISION**

Most definitions of vision cited in Chapter 2 depict vision as a mental image or cognitive structure. As such, it is not directly observable, suggesting the need for research

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<sup>7</sup> Two-sample *t*-tests were conducted on the three manifest indicators of performance retained in the final model described in Chapter 5.

tools and methods suitable for capturing idiographic phenomenon. Two additional properties of vision identified during the literature review were:

- vision is oriented toward the future
- the future state depicted in the vision is a desirable one

Finding a methodology capable of accommodating these properties and at the same time providing quantitative data for hypothesis testing was not expected to be an easy task. Most methodologies have evolved as specialized modes of inquiry within either a qualitative or quantitative framework. Presumably, this problem accounts in large part for the few empirical studies of vision undertaken to date, and the weaknesses and/or lack of success associated with these studies. In the current study, it was ultimately decided to adopt the repertory grid technique as a means of operationalizing entrepreneurial vision. Repertory grid is one technique which is designed for the quantitative assessment of qualitative data. The next few sections provide some background on the grid technique and describe its application in the current study.

#### **4.4.1 Repertory Grid Technique**

##### **Background**

Repertory grid technique (Kelly, 1955) was utilized to elicit the broad construct of entrepreneurial vision. This methodology is rooted in personality theory and consequently has found greatest application in clinical psychology. Many authors, however, have commented on the grid's potential to address cognitive issues (e.g. Dunn & Ginsberg, 1986; Fournier, 1996; Mancuso and Shaw, 1988; Wacker, 1981) and for operationalizing the reference frames of individuals (Dunn and Ginsberg, 1986). Apart from psychotherapy, grids have been used by business researchers to operationalize reference frames in such diverse fields as marketing, management information systems, organization design, personnel, vocational guidance, teaching assessment, and policy analysis (ibid.).

In brief, the "grid" method consists of the construction of a matrix of the relationships between 'm' elements and 'n' constructs (normally elicited during a semi-structured interview). Elements usually comprise roles, events or policies, and are chosen to represent the domain under investigation — in the present case, the vision of the entrepreneur. Constructs are what the respondent uses to group and differentiate between different elements.

Grid methodology is usually ascribed four stages (Wacker, 1981; Beail, 1985):

- 1) Elicitation of elements (matrix columns)
- 2) Elicitation of constructs (matrix rows)
- 3) Evaluation of the elements/Completion of the grid
- 4) Analysis and interpretation

Stage one involves the generation of elements. Elements can be provided by the researcher or elicited from the subject through discussion or the provision of role or situation descriptions. Two important considerations guide this stage. First, care should be taken to ensure that the range of elements is sufficiently broad so as to be representative of the area to be investigated in order to maximize the likelihood that a full range of constructs will be elicited. Second, the range of elements must be sufficiently narrow to ensure that they fall within the range of applicability of the constructs. Dunn and Ginsberg (1986) suggest that 8-15 elements are needed to construct a reasonable grid, although one can find studies which incorporate more than 30 elements. Slater (1977) observed that the modal number of elements in a trial series of over one thousand grids from miscellaneous sources was 12.

The object of stage two typically is to obtain the relevant constructs. A construct can be considered a bipolar dimension of discrimination, which Kelly likened to a "reference axis" (Fransella & Bannister, 1977, p. 3). Since much of the grid's power is derived from its ability to "... stand in others' shoes, to see their world as they see it ..." (Fransella & Bannister, 1977, p. 5), grid constructs are normally elicited directly from each subject and the resulting grid is thus analyzed individually.

Fransella and Bannister have identified ten methodologies for the elicitation of constructs. The most common method involves presenting the elements in triads and is known as the triad, or minimum context, method. It involves presenting three elements and asking the subject to identify some way in which two of them are similar. This response is recorded as the "emergent" pole (Shaw, 1980) of the construct. The subject is then asked how the third element is different from the first two; this response is recorded as the opposite, or "implicit," pole of the same construct. A variant of this approach, known as the self-identification form, involves the inclusion of the element "myself" with each triad. Slater (1977) found that the modal number of constructs was 15, with 0.1 percent of grids having fewer than six constructs, and only five percent having more than 25. Although it is more common for constructs to be elicited from each individual, there are situations where researchers have found it preferable to provide the constructs. Fransella and Bannister (1977) and Adams-Webber (1979) provide thorough coverage of the advantages and disadvantages of each approach.

Stage three of the grid method requires the subject to evaluate each element to determine whether (or to what degree) it is characterized by each construct. Three techniques are commonly applied here. The first, purest form of measurement, requires the subject to mark an 'X' if the construct is present in that particular element. This technique provides nominal data for analysis. Ordinal data can be obtained by requiring the subject to rank order the elements between the construct poles of each construct. Finally, the most popular method (Beail, 1985) involves the use of a Likert-type rating scale, with each element rated on a scale defined by the two poles. It must be considered an assumption that the intervals defined by a Likert-type scale are equal, especially across different constructs and different subjects. The traditional argument in support of treating this type of information as interval data can be found in Nunnally (1967, p. 12-30) and Kerlinger (1973, p. 440-441); this assumption is now regarded as generally accepted practice.

The fourth and final stage of grid method generally consists of the analysis of the information contained in the grid. As mentioned earlier, this analysis is usually restricted to an individual grid. The type of analysis conducted will be limited by the nature of the data; as a first step, however, it is common to assess the degree of similarity or distance between constructs and between elements using a quantitative measure of association appropriate to the data type. The resultant correlation or similarity matrix is often further analyzed using either factor analysis, principal components analysis, multi-dimensional scaling or cluster analysis (Shaw, 1980).

As is the case for any investigative technique, repertory grid methodology possesses both advantages and disadvantages. Perhaps its most significant strength is that it does not impose the view of the researcher; instead, "it is a way of standing in the shoes of others, to see the world from their point of view..." (Beail, 1985, p. 2). Other important strengths include its ability to examine both the structure and content of cognitive maps (Reger, 1990), its amenability to both qualitative and quantitative analysis (ibid.), and its flexibility (Beail, 1985), which allows it to be applied to a wide range of research problems. Weaknesses associated with grid technique have also been discussed in the literature. First, it is labour-intensive, rendering it unsuitable for use on large samples (ibid., Brown, 1992). Second, in a comparison of grid methodology versus cognitive mapping, Brown (1992) found that grids possessed a high annoyance/boredom factor among respondents. Third, grid technique does not meet the requirements of a standardized psychometric test; its flexibility, which is attractive on the one hand, also raises issues of reliability and validity which are complex and the subject of debate (Beail, 1990). Finally, grids are vulnerable to the problem of missing data; a severely incomplete grid is unanalyzable (Brown, 1992).

## **Grid-Related Issues Confronting the Current Research**

It has already been noted that elicitation is normally the preferred method for obtaining elements and constructs; Fransella and Bannister (1977) attribute this to the "clinical" origins of grid. Most authors have ultimately argued in favour of allowing elements and constructs to be provided by the researcher — at least where conditions warrant. Fransella and Bannister in fact suggest that grids employing elements and constructs drawn from areas of high public agreement may have much to offer in their own right.

One of the most important advantages to be gained by supplying elements and/or constructs is the ability to compare different grids quantitatively, since grids without constructs or elements in common can only be compared in terms of their formal properties (Slater, 1977). In the case of the current study, it was desirable to compare not only different grids, but also the grids of different individuals. Wacker (1981) employed the term "parallel analysis" (as opposed to "serial analysis") to refer to the processing of data from one respondent with direct reference to the data from other respondents. Slater (1977) provides one of the most thorough analyses of the types of comparisons that can be made among different grids when some form of standardization of columns or rows has been achieved.

Whether or not it is reasonable to supply standard elements or constructs depends primarily on the ability of these elements or constructs to meet the criteria for "good" elements and constructs. The criteria for elements were discussed earlier in the section concerning stage one of the grid process. With regard to constructs, two observations by Fransella and Bannister (1977) warrant mention. First, it is impossible to supply a construct; one merely supplies the verbal label to which the respondent attaches his/her own construct. The second observation appears in the form of the following self-explanatory quotation (p. 113):

If experimenters try to supply verbal labels which are in the native tongue of the subject and which relate to constructs likely to be important to the subject and the experimenters' guesses are good then there will be no difference in the subjects' ability to use "supplied" as contrasted with "elicited" constructs.

In the present study it was highly desirable to incorporate as much standardization as possible in order to provide maximum comparability between grids. This was necessary if the hypotheses of the study were to be subject to statistical tests. As Wacker noted (1981), "the parallel analyses of the Grid seem to be geared to hypothesis testing..." (p. 117). Thus, if the caveats regarding elements and constructs can be met satisfactorily, it can be argued that the benefits achieved from standardization ultimately outweigh the costs. Since an important goal of this research was to conduct comparisons between grids, it was decided that a standard list of elements would be developed. The next section describes phase one of the research project, in which the grid elements were developed.

#### **4.4.2 Phase One: Derivation of Repertory Grid Elements**

##### **Introduction**

The purpose of the first phase of the research project was to develop a list of elements for the administration of the repertory grid. These elements would subsequently serve two functions in the research process. In the first instance (i.e. phase two of the research project) they would be employed as "prompts" in order to elicit constructs. Later, during phases three and four of the research, these same elements would serve as the elements or column labels of the repertory grid itself.

Unfortunately, the literature provided little in the way of direct help in the actual development and selection of the elements, although it did offer the guiding principles or criteria of "goodness" mentioned earlier. To recap, the list of elements had to be broad enough to be considered representative of the domain under investigation, and at the same



time narrow enough to apply to all of the constructs. The opposing or conflicting nature of this dual requirement suggested that, initially at least, elements and constructs needed to be considered simultaneously. Indeed, the decision as to what types of items should represent elements and what kind of items should be constructs depends largely on the purpose of the research.

Given the arguments thus far, the main considerations concerning the nature of the grid elements and constructs are that they must be capable of:

- (a) reflecting the holistic nature of vision
- (b) accommodating the temporal (future) orientation of vision
- (c) satisfying the criteria for "goodness"

In order for the list of elements to cover a sufficiently broad representation of the entrepreneurial vision (i.e. the domain of investigation), the elements needed to be capable of subsequently generating constructs that treated the firm as a whole. Of the various management perspectives, it is the discipline of strategic management that is best equipped to describe and deal with the firm as a whole. Strategic management variables include objectives, product(s), market(s), and source(s) of competitive advantage. It is immediately apparent, however, that as potential elements these variables present severe problems, for it is difficult to imagine how such elements would fall within the "range of convenience" within which each construct subsequently developed (whatever it might be) could be meaningfully applied to each element. Alternatively, it was decided that a practice commonly employed in psychological studies be adapted; this practice entailed the use of "whole figure constructs" (Fransella & Bannister, 1977, p. 21), usually comprising people and often including "self" constructs such as "like me" (Self), "like I would like to be" (Ideal Self), and "like I used to be" (Past Self). Morris (1977) found that self concepts were better explored as elements than as constructs. Hence, in this study, elements were comprised of "whole" firms, including the entrepreneur's own firm in a variety of contexts. In the case of the entrepreneur's own firm, the contexts were:

- (a) "my firm as it was when it first started"
- (b) "my firm as I had imagined it would be 5 years after start-up"
- (c) "my firm as I had imagined it would be 10 years after start-up"
- (d) "my firm as it is now" (i.e. three years after start-up)

The above list provided four elements for the development of the grid. Four elements, however, is considerably fewer than the eight to twelve recommended. Moreover, it was doubtful that so few elements would adequately represent the scope of the visions across firms. It was therefore decided that additional elements would consist of the names of other well-known businesses.

As has been noted on several occasions, it is important that the elements be "representative of the pool from which they are drawn" (Fransella and Bannister, 1977, p. 13); it was therefore a priority at this stage to ensure that the range of elements was appropriate. There were two ways in which this could have been accomplished. The first method would have involved deriving a large random sample of elements from the population of firms; this method was clearly infeasible as it would have required an extremely large grid which would have taken subjects an inordinate amount of time to complete. The second, more practical, method of ensuring representativeness was to ensure that the selection of the elements was guided by theory. Accordingly, it was decided that survey respondents would be requested to provide the names of well known firms for each of several theoretically-derived categories. Specifically, it was decided that these categories would reflect "holistic" generic strategies and that a short description of each strategy be provided for each category to guide respondents.

### **Generic Strategies**

Various typologies have been developed to provide a means by which different strategies or patterns of strategic behaviour can be classified at the level of the business unit (as opposed to corporate level of strategy) (e.g. Mintzberg, 1973; Miller and Friesen,

1977; Miles and Snow, 1978; Porter, 1982; see also Galbraith and Schendel [1983] for a useful summary). These typologies have been described as *gestalts*, strategic archetypes and generic strategies (Robinson and Pearce, 1985). Over the past 15 years two typologies of generic business strategies have dominated strategic management research by an overwhelming margin — Porter's (1982) typology and that of Miles and Snow (1978).

Porter's framework identifies four generic strategies: cost leadership, differentiation, focus and "stuck in the middle." The Miles and Snow framework also consists of four possible strategies; these are prospector, defender, analyzer and reactor. Although there are powerful similarities between the two frameworks (Segev, 1989) they are not the same, each stressing somewhat different aspects of strategy (*ibid*). Both of these frameworks have been applied successfully to the study of small firm strategy (e.g. Porter: Chaganti, 1987; Miles and Snow: Rugman, 1988).

### **Selection of a Generic Strategy Framework**

In the current study the selection of an appropriate generic strategy typology was restricted to a choice between the two dominant frameworks of Porter and Miles and Snow. The Miles and Snow typology is recognized as possessing several desirable attributes, and was ultimately selected. According to Hambrick (1983), its strengths include its parsimony, its ability to account for significant variations across organizations, and the fact that it allows the strategy construct to be operationalized on other than industry-specific terms.

Porter's framework, however, is also a powerful mechanism for classifying strategies. The choice between the two was therefore based on suitability to the purposes of this particular study. The following factors led to the decision to adopt the Miles and Snow framework. First, Rugman (1988) argues that Porter's framework is difficult to apply to small firms since small firms must by definition pursue a focus strategy. Therefore, the choice of a generic strategy (within Porter's framework) is not really an issue. (It should be

noted, however, that Porter did allow that a firm could choose to focus on cost leadership or differentiation within its niche.) Second, based on the results of an in-depth comparative analysis of the two frameworks, Segev (1989) concluded that Porter's framework focuses mainly on more concentrated industries with larger business units, whereas Miles and Snow's framework focuses on industries with more competitors. Since small firms are more likely to be situated in the latter environment, the Miles and Snow framework appeared to be better-suited to the purposes of the current study. Third, an empirical analysis by Miller and Dess (1993) using the PIMS database indicated that none of Porter's strategies were evenly distributed across industries, suggesting that the strategies described by Porter are more contingent than generic. Fourth, Segev's (1989) analysis revealed that the Miles and Snow typology is much better equipped to deal with environmental variables such as dynamism and complexity. Miller and Dess also concluded that the Porter framework's omission of the strategy-environment linkage was a serious deficiency, putting it at a relative disadvantage to the Miles and Snow framework. In their view, consideration of the strategy-environment fit is key to understanding niche strategies (which tend to be the domain of small firms). Fifth, Porter's typology places less emphasis on behavioural aspects of strategy-making, such as level of risk (Segev, 1989). Finally, the latter two factors taken together suggest that the Miles and Snow framework is more holistic in nature than the Porter framework.

### **Questionnaire Design**

Having settled on the Miles and Snow generic strategy framework, a questionnaire was designed for the purpose of soliciting the names of well-known firms representative of these four generic strategies. The paragraph approach has been the most widely used approach for operationalizing the Miles and Snow strategies (Conant, Mokwa and Varadarajan, 1990; Zahra and Pearce, 1990). The paragraph approach typically requires the respondent to read a short paragraph description of each of the four strategies and then select the description that best matches the strategy of his/her firm. In the current

study, respondents were required to read the descriptions and for each description provide the names of two firms which they felt matched the description and would be well known to most Newfoundland entrepreneurs. Paragraph descriptions in the questionnaire were adapted from descriptions utilized in prior studies (Conant, Mokwa and Varadarajan, 1990; Davig, W., 1986; McDaniel and Kolari, 1987; Segev, 1987; Snow and Hrebiniak, 1980; Zajac and Shortell, 1989). Particular emphasis was given to the approach adopted by Davig (1986), since it represented an attempt to adapt the descriptions for utilization by small firms.

Initially, an effort was also made to accommodate the suggestions of Conant, Mokwa and Varadarajan (1990), who argued that many paragraph descriptions of the Miles-Snow strategies tend to oversimplify the multi-dimensionality of the constructs. Miles and Snow proposed that four basic strategies emerge as organizations adapt to their environments by attempting to solve three problem sets: an entrepreneurial problem centering on the choice of product-market-domain, an engineering problem involving the choice of technologies and processes, and an administrative problem focusing on the development of organization structure and policies. Ensuring that the strategy descriptions in the questionnaire addressed all of these issues, however, resulted in fairly comprehensive and somewhat complex descriptions. A short list of demographic and background questions (e.g. industry, firm size) was included at the end of the questionnaire.

### **Pre-Testing of the Questionnaire**

The questionnaire was pre-tested during June 1994 using a convenience sample of 10 local small business owners or managers and one business expert. Business participants were first contacted by telephone to request their cooperation. Once they agreed to participate, a copy of the questionnaire (including cover letter) was hand delivered or sent immediately by fax to their office along with a cover letter. Participants

were then telephoned again the following day to discuss the survey or to arrange an appointment for a discussion in person, depending on their preference. In general, questioning of the participant's reaction to the questionnaire content, format and wording followed the guidelines for pre-testing suggested by Dutka, Frankel and Roshwalb (1982). A copy of the cover letter, the original paragraph descriptions contained in the initial version of the survey, and the questions utilized to elicit feedback are located in Appendix 4.2.

Feedback during this stage required that the paragraph descriptions be revised to achieve greater brevity and simplification. Three versions of the questionnaire were developed over the course of the pre-testing phase. The final versions of the strategy descriptions were one paragraph in length. Although the shorter descriptions by necessity covered fewer dimensions of each strategy and therefore likely sacrificed content validity (i.e. the degree to which the items are a well-balanced sample of the content domain to be measured; Rossi, Wright and Anderson, 1983) to a degree, this was not considered a major impediment because the main purpose of the strategy descriptions was to elicit a diverse and domain-representative set of elements rather than identify the strategy of the firms identified.

### **Survey Overview**

Following the pre-testing of the questionnaire, a mail-out survey of 150 entrepreneurs was conducted in July 1994. The purpose of the survey was to determine which businesses were well-known and representative of the four generic Miles-Snow strategies. Specifically, survey respondents were asked to provide the names of two well-known firms for each of the following strategies: prospector, defender, analyzer and reactor. A copy of the questionnaire is located in Appendix 4.2. Although the sample size represented a compromise between cost and representativeness, it can be noted that the sample was not chosen with respect to concerns about significance testing.

## **Sampling Procedure**

The sampling frame for the survey was compiled from firms listed in four provincial business directories: The 1993/94 St. John's Business Directory, The Offshore Petroleum Directory, The 1993 Newfoundland Ocean Industries (NOIA) Membership Directory, and the 1994-95 Manufacturers' Directory for Newfoundland and Labrador. Firms which met any one or more of the following criteria were eliminated from consideration:

- a) prior participation in the pre-testing of the questionnaire
- b) public sector organization
- c) not-for-profit organization
- d) publicly-traded corporation
- e) branch office of a national firm

In addition, multiple appearances caused by firms being listed in more than one directory were eliminated. In some instances personal judgement was utilized to determine whether or not a firm met a certain criterion. The foregoing process resulted in a list of 972 firms which comprised the survey sampling frame. From this list, 150 firms were randomly selected to participate in the mail-out survey. These firms were distributed across the province of Newfoundland and Labrador and represented a broad variety of industries, but cannot be considered truly representative of the population of small firms in the province due to the industry-specific nature of several of the directories utilized. Nevertheless, the sample was considered sufficiently broad for determining which firms were well-known to most Newfoundland entrepreneurs (i.e. for the purpose of element elicitation).

## **Survey Procedure**

Perhaps the most comprehensive approach to survey design is the Total Design Method of Dillman (1977), which has also been highly recommended for use in small business research (Forsgren, 1989). Accordingly, an adaptation of Dillman's approach was utilized for the design and implementation of the Phase 1 survey. The questionnaire package consisted of a cover letter and questionnaire in booklet form (see Appendix 4.2

for samples). The mailout took place in July 1994. A follow-up letter was sent to non-respondents approximately two weeks later and a second follow-up letter (with another copy of the questionnaire enclosed) was sent after another two weeks had elapsed.

### **Analysis and Validation of Results**

After pooling the results, the names of the two firms cited most frequently in each category were selected as elements (this process is described in the next chapter). These elements were subsequently checked for suitability during phase two of the study. Overall, the phase one procedure was designed to provide a list of eight grid elements, four consisting of the entrepreneur's own firm in four different contexts and four which would be determined by survey results.

#### **4.4.3 Phase Two: Derivation of Repertory Grid Constructs**

##### **Purpose**

Phase two of the research process consisted of a small-scale pilot study, the purpose of which was threefold: (1) to elicit a pool of grid constructs from which a "standard" list of constructs could be assembled for subsequent stages of the research; (2) to determine whether it would be feasible to supply (rather than elicit) constructs (i.e. would a standardized list of constructs be appropriate when administering the grid to a wide range of entrepreneurs?); and (3) to check whether the elements obtained during Phase one were known to participants and determine which elements were best-suited for subsequent stages of the research.



As Shaw (1977) noted, constructs are less likely than elements to be shared because elements are representatives of the universe of discourse. The minimum context triadic method of eliciting constructs was used for each respondent; a variant of the self-identification procedure was also incorporated by including the element "your firm as you would like it to be in ten years" (representing the best approximation of the ultimate venture dream) in each triad. A subjective evaluation was subsequently made of the feasibility of developing a list of "standard" constructs. If the findings were to indicate that there is a substantial amount of overlap between respondents, then supplying constructs would indeed represent an attractive option, resulting in grids which will be fully comparable. Alternatively, if the pilot study revealed that there is some overlap but also considerable variation, the final phase would subsequently supply the "common" constructs and elicit constructs from each respondent. These grids can be "assembled" (Slater, 1977, p. 146) vertically and in part, horizontally. In the worst case, if the pilot study were to reveal that no constructs can be treated as common, the final phase of the study would elicit the constructs from each respondent, resulting in grids which can only be assembled vertically. Checking for the meaningfulness of the elements consisted of asking respondents whether they were familiar with the firms on the list and whether they were comfortable with the triad task given the elements provided.

### **Sample Description**

The sample for phase two was comprised of 12 firms, including 11 entrepreneurs and one senior manager. All were located in St. John's, Newfoundland. Participants were selected on a "convenience" basis and were, in the judgement of the researcher, examples of successful firms. The majority of the sample were prior recipients of awards for entrepreneurship or exporting and many had been featured in the past by the local press.

## Interview Procedure

Each entrepreneur was first contacted by telephone to request his or her participation and to schedule an interview. The interviews took place over a two-week period during April, 1995 and virtually all interviews were held at the entrepreneur's place of business; the lone exception was an interview held in the researcher's office at the request of the entrepreneur.

The first portion of the interview was spent explaining the purpose of the research. Phase one and phase two of the research were described in summary fashion and participants were told that the object of the current exercise was to elicit the language and concepts actually employed by entrepreneurs when comparing their own firms to others. This language would then be incorporated in a research instrument that would be administered to a larger group of entrepreneurs in a subsequent phase of the research. It is important to note that in describing the purpose of phase one of the research, participants were told that the object had been to identify, according to a few criteria, firms that were well known to most Newfoundland entrepreneurs; the fact that these firms represented different strategies was not disclosed.

The next portion of the interview was used to describe and explain the nature of the task embodied in the repertory grid technique. The steps involved in the triadic method were outlined and two examples using elements and constructs based on personal relationships (rather than businesses) were described. The thirteen elements to be used were then introduced. These consisted of the names of eight Newfoundland firms derived from the results of Phase One (two firms from each of the four generic strategies), the entrepreneur's own firm in four different contexts (as it was 5 years ago, as it is now, as I would like it to be in 5 years, and as I would like it to be in 10 years), and one highly controversial start-up that ended in massive failure (see Appendix 4.3 for a list of the

elements).<sup>8</sup> Although it was explained to the entrepreneur that the names of the eight Newfoundland firms were supplied from Phase One, there was once again no mention or indication made that these firms were associated with particular strategies.

Each element name or description was printed on a 3" x 5" index card and numbered from one through thirteen; this number was printed on the reverse side of the card. The elements were presented initially by laying all of the cards face "up" on the table, with the names of the firms visible. After reviewing the names of the elements, the participant was asked whether s/he was familiar with all of the firms. In the event that one of the firms was unfamiliar to the entrepreneur, a substitute was obtained by requesting the entrepreneur to read the appropriate strategy description (from Phase I) and identify a firm that matched the description (the rationale for this is explained in the next chapter, under Phase One results); a new index card for this firm was prepared and the unfamiliar card removed. Finally, in preparation for the triadic elicitation process, all of the cards were placed face down (i.e. with only the number of the element visible) on the table directly in front of the interviewer.

The main portion of the interview was taken up by construct elicitation using the minimum context triadic method in standard fashion. Prior to each interview, a "schedule" of elements to be presented had been prepared using a randomized assignment process based on a series of random numbers generated by Microsoft Excel V5.0 spreadsheet software. The use of this already-prepared schedule facilitated the smooth and efficient conduct of the elicitation process.

For each construct to be elicited, three elements were selected by consulting the schedule. The cards corresponding to these three elements were then turned over and laid

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<sup>8</sup> The Sprung greenhouse was a short-lived and highly controversial government-backed megaproject. The recipient of millions in government investment, the firm had been the subject of nearly daily debate in the media for the strangeness of the concept (growing cucumbers indoors on a massive scale), which already had been tried elsewhere and had failed.

face up (with element names visible) on the table directly in front of the entrepreneur. The entrepreneur was asked whether there was any feature or characteristic shared or held in common by any two of the firms represented that made them different from the third. This response was recorded verbatim by the researcher. The entrepreneur was then asked what it was about the third firm that made it different from the first two. Once again, the interviewee's response was recorded. Having elicited the emergent and implicit poles for one combination of elements, the three element cards were retrieved and placed face down among the other element cards. The researcher next consulted the element schedule again to determine the next combination of elements and the entire process was repeated. This procedure continued until the entrepreneur was unable to supply constructs for two successive combinations of elements.

After the elicitation process had been completed the entrepreneur was shown the list of constructs s/he had generated and asked, "If I asked you to describe the vision you have for your firm, are there any dimensions that would appear in your description that are missing from this list?" (This was the first and only time the term "vision" was used in the interview.) The interviewer reiterated how the results would be put to use in subsequent stages of the research, since, having gone through the process, the entrepreneur was now in a better position to view the context of the research. Finally, the entrepreneur was thanked for participating and asked whether s/he would like to receive a summary of the results.

## 4.5 OPERATIONALIZATION OF VISION-RELATED CONSTRUCTS

### 4.5.1 Vision Structure: Complexity

Various indices based on aspects of grid structure and content have been developed to assess the organization of an individual's conceptual construction system. Of the structure-related indices, three types have achieved central prominence in the literature. The first type, *Differentiation*, refers to the number of constructs employed to compare and contrast elements (Hayden, 1982; Dunn and Ginsberg, 1986), and can be measured by counting the number of constructs elicited (Reger, 1990). *Complexity* refers to the degree to which each construct performs a different function from every other construct (Dunn and Ginsberg, 1986). Finally, *Integration*, which is considered the converse of complexity (Dempsey and Neimeyer, 1995; Reger, 1990), consists of the degree of connectedness of each construct (Dunn and Ginsberg, 1986).

Three manifest indicators were employed to provide individual measurements of the latent variable "vision complexity." These indicators consisted of widely known grid-based measures of complexity (or its converse), each of which has been subjected to systematic investigation within the domain of personal construct psychology (see Fransella and Bannister, 1977; Adams-Webber, 1979; Mancuso and Adams-Webber, 1982). The indicators included Landfield's (1971) measure of "functionally independent construction" (FIC), Bannister and Fransella's (1966) measure of "intensity," and Landfield and Schmittiel's (1983) measure of meaningfulness differentiation known as " $\chi^2$ " (Chi-square).

#### **Manifest Indicator #1: FIC Score**

The first manifest indicator utilized consisted of Landfield's (1977) measure of "functionally independent construction" (FIC). FIC is defined as the total number of

separate construct units employed by a subject on a repertory grid (ibid.) and is considered measure of complexity in the traditional sense (i.e. the ability to construe events in a differentiated fashion). The calculation of FIC is itself moderately complex; it is briefly summarized below, but is fully described by Landfield and Cannell (1988).

Calculation of the FIC score involves measuring the pattern overlap for both rows and columns of the grid. Ratings on the seven-point scales were reduced to sidedness and midpoint ratings by assigning all left-side ratings a score of "1," right side ratings a "2," and center ratings a "0." Upon completion of this procedure, the adjusted grid ratings of eight elements in relation to two different constructs might resemble the following hypothetical example:

Original Construct 1:	3	2	6	7	4	1	2	5
Original Construct 2:	1	3	5	3	4	7	4	6
Adjusted Construct 1:	1	1	2	2	0	1	1	2
Adjusted Construct 2:	1	1	2	1	0	2	0	2

In this example, the adjusted values reveal there are 4 directly overlapping "application" or "positive" ratings (Landfield and Cannell, 1988; Landfield, 1971) of 1-1 and 2-2. The "inverse" or "negative" relationship of 1-2 and 2-1 occurs in two instances. The overlapping of zero ratings is found in one case. This latter overlap of 0-0 is termed a "nonapplication" or "mutual exclusion" rating.

The second step of the FIC calculation procedure involves taking the highest positive or negative relationship score and adding this score to the mutual exclusion score in order to arrive at a "row comparison" score. In the example above, this would result in a row comparison score of plus 5, with the plus indicating the dominance of positive relationships over negative relationships. Conversely, a minus sign would indicate the negative paired applications exceeded the positive relationships. During this stage a

correction factor may be applied in situations where the number of mutual exclusions is excessively high in order to avoid spurious scores. For example, a score of 1 positive overlap, 2 negative overlaps and five mutual exclusions would yield a row comparison score of minus seven, but this score does not adequately represent the positive or negative relationship between the constructs since there is hardly any difference between the positive and negative overlaps.

Normally a "criterion" score of 80% of the maximum possible score (in the case of a row comparison involving eight elements, the maximum score possible would be eight and the criterion score would therefore be seven) is utilized in determining whether a relationship exists (Landfield and Schmittiel, 1983). However, when the number of mutual exclusions reaches a certain level, the criterion score is raised to correct for potentially spurious results. Landfield (1971) provides the rationale for this procedure and the mechanical operations utilized in the current research are clearly indicated in Figure 4.3, which lists the programming code utilized in the preliminary calculations of the FIC score. This code (reproduced in full in Appendix 4.4) reflects the criterion scores and correction factors employed in the current research (utilizing a grid of 8 elements [columns] by 12 rows [constructs]). It should be emphasized that a correction factor is only employed where a potential relationship exists (i.e. where the relationship score meets or exceeds the criterion score) and the number of mutual exclusions is excessively high. It can be seen that the code implements the correction factor by reducing the number of mutual exclusions; this operation is equivalent to raising the criterion score. Use of the correction factor, where required, ensures that the ratio between positive and negative scores is at least two to one.

Figure 4.3  
Programming Code Indicating Criterion Scores and Correction Factors Utilized\*

**For row comparisons**

```
' For criterion score >=7  
If (MU = 6) Then MU = MU - 1  
If (MU = 7) Then MU = MU - 2  
If (MU = 8) Then MU = MU - 3
```

**For column comparisons**

' For criterion score of 10, 11 or 12 (i.e. 80% or 9.6 of 12)  
 If MU >= 7 And MU <= 9 Then MU = MU - 1  
 If MU = 10 Then MU = MU - 2  
 If MU >= 11 Then MU = MU - 3

\* An apostrophe at the beginning of a line indicates a comment rather than a command.

MU = the number of mutual exclusions.

The foregoing discussion has described how a relationship between one pair of constructs is derived. If the absolute value of a row comparison score is at least as great as the criterion score, the two constructs are considered to be related. In similar fashion, the comparison scores for all pairs of rows and all pairs of columns of the grid must be subsequently determined. The entire set of row and column comparison scores for one grid from the data set is reproduced below in Figure 4.4.

Figure 4.4  
 Row and Column Scores for One Grid

**ROW COMPARISON SCORES  
 (ONLY ABSOLUTE VALUES >=7)**

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
R1		6	-5	-2	-4	6	-4	-6	-4	-6	4	-1
R2			-7	-2	4	5	4	-6	4	-6	-4	-2
R3				2	4	-5	4	7	4	7	5	2
R4					4	-4	4	-2	4	-2	5	-5
R5						-3	8	-4	8	-4	6	-1
R6							-3	-6	-3	-6	-3	-3
R7								-4	8	-4	6	-1
R8									-4	8	5	1
R9										-4	6	-1
R10											5	1
R11												-2
R12												



**COLUMN COMPARISON SCORES  
(ONLY ABSOLUTE VALUES  $\geq 10$ )**

	C1	C2	C3	C4	C5	C6	C7	C8
C1		<b>12</b>	<b>11</b>	8	6	-6	7	6
C2			<b>11</b>	8	6	-6	7	6
C3				<b>9</b>	7	-5	8	6
C4					<b>8</b>	-6	-7	-6
C5						<b>6</b>	9	7
C6							<b>8</b>	9
C7								<b>9</b>
C8								

The tables in Figure 4.4 above are formatted in a manner akin to a correlation matrix and therefore should be read in a similar fashion. It must be remembered, however, that the values within the cells represent row or column comparison scores rather than correlations. Thus, in the table of row comparisons, for example, the score for the comparison between row one and row two is six, and the score for the comparison between rows two and three is minus seven. Scores meeting (or exceeding) the criterion value have been highlighted in boldface type, indicating "relatedness" between the pair of rows (or columns) being compared; in these situations the two constructs comprising the pair are considered to be functionally equivalent.

It can be seen that each grid required 66 paired row comparisons and 28 paired column comparisons. In order to process the data efficiently a computer program was developed using Microsoft Excel version 5.0 Visual Basic macro programming language. This program automated all of the steps involved in calculating FIC described thus far. The program code was adapted from the Fortran code of Landfield (1971), and is reproduced in its entirety in Appendix 4.4. The development phase included testing the final version of the program for accuracy by comparing the results of its output with the results of manual calculations for a variety of grids.

Once comparison scores have been obtained for all row comparisons and column comparisons, the final steps in calculating the FIC score for a grid are to obtain the FIC score for rows and the FIC score for columns, and to sum these in order to obtain the total

FIC score. These procedures were not a part of the computer program described above, but instead were carried out manually for each grid, and can be explained in the following fashion. Referring to the first table (row comparisons) in the example depicted in Figure 4.4, it can be seen that rows (or constructs) 1, 4, 6, 11 and 12 are unrelated to each other and to other rows on the grids, since there are no comparison scores meeting the criterion associated with any of these constructs. These constructs are considered independent and each is assigned a score of one point.

The table of row comparisons also includes two clusters of interrelated constructs, where a cluster is defined as a set of constructs, each of which is functionally equivalent to at least one other construct in the cluster. The first cluster is comprised of the following relationships:

- a) row 2 with row 3
- b) row 3 with row 8
- c) row 8 with row 10
- d) row 8 with row 10

In a similar vein, the second cluster includes row five and row nine which are linked by a relationship, and row seven because it also is related to row nine. These clusters can be visually represented by the diagrams in Figure 4.5.

Figure 4.5  
Example of Cluster Analysis for Row Comparisons



Figure 4.5 helps to show that there are two independent clusters of interrelated rows, although it is also evident that, within a cluster, not all rows need be related to each other.

The constructs within a cluster cannot be considered independent, however, and therefore each cluster is assigned a score of one point. The two points for the two clusters are added to the five points for the five independent rows identified earlier, resulting in an FIC row score of seven points.

Proceeding in a similar manner, the FIC column score must be determined from an analysis of the relationships appearing in the column comparisons. In our example (taken from the second table in Figure 4.4), there is one cluster, comprised of columns one, two and three. This cluster receives a score of one and the five remaining independent columns each receive a score of one, resulting in an FIC column score of six. As a final step, the FIC row score is added to the FIC column score, resulting in a total FIC score of 13. It should also be apparent by now that the maximum FIC score for any grid of 8 elements x 12 constructs is 20 points.<sup>9</sup> Finally, it should be noted that adding the row and column scores together is not merely a redundancy, since there can be large differences between these scores (Landfield and Schmittiel, 1983).

The FIC score is a measure of conceptual differentiation. As is evident from the calculation process, it measures the number of functionally independent constructs contained in a grid. More specifically, it can be viewed as a measure of between-construct differentiation in type of meaning (Landfield, 1977). In general, a high FIC score indicates a highly differentiated conceptual system, where the subject has available a large number of independent constructs which s/he can bring to bear in construing an event. A low FIC score means that a person's construct dimensions are highly integrated and organized (Landfield, 1971). The FIC score has been shown to have a six-week test-retest reliability of 0.88 (Landfield and Schmittiel, 1983).

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<sup>9</sup> Clinical psychology has been interested in the association between extreme FIC scores and psychological disorders. Landfield and Cannell (1988) have described one particularly memorable example where a subject achieved the maximum obtainable score on a 15 x 15 grid: "The last person to receive a score of 30 (signifying no relationships) was described as confused, fragmented, and schizoid. This person stated that only his dog understood him." (p. 76).

## **Manifest Indicator #2: Intensity Score**

"Intensity" is considered a measure of the degree of integration of an individual's construct system (Mitterer and Adams-Webber, 1988), and is calculated by squaring the correlations between each construct and every other and multiplying by 100 (retaining sign) to yield "percentage variance in common" scores (Bannister and Fransella, 1966), which are then summed (disregarding sign) across pairs of constructs to yield a single index of the overall "intensity of construct relationships" within the grid (Mitterer and Adams-Webber, 1988). Calculations of intensity scores for each grid were performed using the computer software package Omnigrad - PC Version 1.5 (Mitterer, Adams-Webber and Sewell, 1989). High scores indicate that the constructs employed in judging between elements are related and less differentiated (Feixas et al., 1992), whereas low scores suggest a more disordered, "loose" way of thinking. Construct systems which are more loosely knit are considered to be more complex (Fransella and Bannister, 1977). Since intensity, a measure of integration, is broadly interpreted as the converse of differentiation, all scores were recoded by multiplying each score by negative one in order to align the directionality of the indicator with the directionality of the FIC score; put another way, recoding intensity permitted a consistent interpretation across manifest variables, such that an increase in either score could be interpreted as an indication of greater differentiation. Intensity has been shown to have a one month test-retest reliability of 0.94 (Feixas et al., 1992).

## **Manifest Indicator #3: $\chi^2$ Score**

It was noted earlier that the level of integration of a construction system is reflected by the interconnectedness of constructs and is commonly assessed by the Intensity score of a grid. A second aspect of integration, however, is vertical or hierarchical organization (Hayden, 1982). Hierarchical superordination is implied by the capacity to consider degrees of greater or lesser meaningfulness (ibid.; Landfield and Cannell, 1988).

Landfield (1977) originally developed the Ordination Score as a means of assessing within-construct differentiation in meaningfulness; this score encompassed both levels of meaningfulness and range of meaningfulness. The  $\chi^2$  (chi-square) score (Landfield and Schmittiel, 1983) represents a subsequent refinement of the Ordination Score.

The chi-square score assesses the capacity to consider degrees of meaningfulness (i.e. hierarchical construing) by measuring variations in rating scale point utilization. Recalling that the grids utilized in the current research employed seven-point rating scales, the chi-square analysis disregards sidedness (from the midpoint) and collapses the scale to four points, ranging from 0 to 3. The scale therefore becomes a scale of polarization and implied meaningfulness (Landfield and Schmittiel, 1983). The  $\chi^2$  score assumes a rectangular distribution of ratings as the expected or theoretical rating dispersion for different levels of meaningfulness and takes into account the number of opportunities to use different scaling points on a particular grid.

The analysis for every row and column of a grid consists of subtracting the observed frequency of a particular scaling point from its expected frequency. This number is squared and divided by the theoretical expectation for each of the four scale points ranging from 0 to 3. The row scores are averaged and added to the column average, yielding a total chi-square score for one grid. A high  $\chi^2$  score is indicative of less dispersion in rating polarization (i.e. organizational simplicity); low scores reflect greater organizational complexity (Landfield and Cannell, 1988).

The formula for calculating  $\chi^2$  is described more fully by Landfield and Schmittiel (1983). In the current research, a computer program was developed to automate the calculation of the score. The program was written in Microsoft Excel version 5.0 Visual Basic macro programming language and is reproduced in full in Appendix 4.4. Program development included testing the final version for accuracy by comparing the results of its output with the results of manual calculations for a variety of grids. In line with the

practice adopted for the integration measure, Manifest Indicator #2 (Intensity) above, all  $\chi^2$  scores were subsequently recoded by multiplying by negative one.

#### **4.5.2 Vision Content: Reach**

Vision reach was defined in Chapter Three as a content-related property of vision concerning the discrepancy between the current state and the state depicted in the idealized future portrayed by the vision. It was also established in the last chapter that the construct of vision reach has received almost no attention in the theoretical and empirical literature. Consequently, the literature provided little theoretical guidance concerning the design of appropriate measures and no existing measures were available to draw upon.

In the current study vision reach was operationally defined as the difference between the grid construct ratings assigned to element # 1 ("my firm as it was when it first started") and the construct ratings assigned to the firm as it was imagined in the future. Two grid elements were available which depicted the firm as it had been imagined in a future state: element #2 (the entrepreneur's firm as s/he had imagined it would be five years after start-up) and element #3 (the entrepreneur's firm as s/he had imagined it would be 10 years after start-up).

Although a five year time horizon is approaching the low end of acceptability for vision, it has been argued earlier shorter time horizons are likely more appropriate in start-up situations. Moreover, use of both the five and ten year horizons provided the possibility for multiple indicators of the reach construct. This has important implications, since the use of a single indicator would have required an assumption that there is no measurement error. With two indicators, however, no such assumption is required and measurement error can be modeled. Given the foregoing arguments, it was decided to utilize two manifest indicators of the construct vision reach.

### Difference Scores

The measurement properties of difference scores are typically discussed in the literature dealing with change (Rogosa and Willett, 1983) and have been subject to considerable controversy (Bedian et al., 1994; Cronbach and Furby, 1970; Johns, 1981). It is important to recognize, however, that the arguments against difference scores developed within educational and developmental research, where measures are usually single pre- and post-test scores collected from individual subjects, do not necessarily apply to management research (Tisak and Smith, 1994). For example, the problem of regression toward the mean is considered one of the key problems of longitudinal research designs (Burr and Nesselroade, 1990) but will not pose a threat to validity in a cross-sectional design.

The configuration or pattern of scores for one respondent is often referred to as a profile (Cronbach and Gleser, 1953; Nunnally, 1962) and the index of similarity between two profiles or sets of scores is known as a profile similarity index (Edwards, 1993). A profile similarity index is typically formed by aggregating the difference scores between two profiles. In the context of the current study, a profile similarity index was required to indicate the difference (or similarity) between a respondent's construct ratings for two different grid elements. Because the grid incorporated 12 constructs, each element profile encompassed 12 rating scores.

Two issues must be addressed in the construction of a profile similarity index. First, is the issue of whether the calculation of a difference score between corresponding points on two profiles should be performed on the raw scores themselves or whether the scores should first be transformed. Profiles can be characterized by their elevation (i.e. the mean of all scores for a given person), scatter (standard deviation) and shape (i.e. the residual information contained in the profile after removing the effects of elevation and scatter

(Cronbach and Gleser, 1953). Differences in elevation can be removed from profiles by expressing each profile as a set of deviations from the profile mean. This process is commonly referred to as centering about persons (ibid.).

Differences in scatter can be eliminated by dividing each deviation score by its profile's standard deviation, resulting in profiles composed of standardized scores. According to Cronbach and Gleser (ibid.), the use of standardized profile scores tends to magnify error variance. In the view of these authors, it is usually preferable not to centre or standardize scores unless there is specific justification for doing so, since both of these operations tend to discard some of the information available in the data. In view of the foregoing, and the absence any compelling theoretical basis for suspecting problems in the raw data, difference scores in the current study were based on the raw data values.

The second issue associated with the construction of a profile similarity index concerns the method used to calculate the difference score between equivalent points on two profiles. The principal methods are summarized in Table 4.1 below. All of these methods have been widely used in research (Edwards, 1994). The properties of these measures have been identified and thoroughly described by Cronbach and Gleser (1953) and Edwards (1993, 1994). In general, the use of  $D^1$  is problematic in a summative index because positive and negative distance values will tend to cancel each other out during the summation process. The use of  $D^2$  overcomes this problem, but the process of squaring also exaggerates larger differences between profiles. The Euclidean distance is less skewed than  $D^2$ , but still causes similar distortion.

Cronbach and Gleser generally advise against using measures which ignore scatter, such as Q (product moment correlation) because the index will be unreliable in situations where the profiles are relatively flat. The current study utilized the city block metric method to construct the profile similarity index. This has the advantage that two points are designated the same distance apart if they are either (i) two units apart on one



variable and identical on the other, or (ii) one unit apart on each variable (Shaw, 1980); in other words, the distortion problem associated with  $D^2$  and  $D$  is eliminated.

Table 4.1  
Profile Similarity Indices

Index	Description	Formula
$D^1$	Algebraic distance	$\sum (X_i - Y_i)$
$D^2$	Squared distance	$\sum (X_i - Y_i)^2$
$D$	Euclidean or root mean square distance	$\sqrt{\sum (X_i - Y_i)^2}$
$ D $	City block metric (absolute difference)	$\sum  X_i - Y_i $
$Q$	Correlation	Product-moment correlation coefficient

#### Manifest Indicator #4: 5-Year Discrepancy

Two manifest indicators were developed for the construct of vision reach. The first manifest variable consisted of the sum of the difference scores between the grid ratings of the construct profiles for element #2 ("my firm as I imagined it would be in 5 years") and element #1 ("my firm as it was when it first started"). The indicator can also be expressed in algebraic notation:

$$S_i = \sum_{j=1}^N |Y_j - X_j|$$

where  $S_i$  = the index score of the  $i$ th respondent  
 $N$  = the number of constructs (i.e. 12)  
 $Y_j$  = the rating score assigned to Element #2 on Construct  $j$   
 $X_j$  = the rating score assigned to Element #1 on Construct  $j$

### **Manifest Indicator #5: 10-Year Discrepancy**

The second manifest variable for vision reach consisted of the sum of the difference scores between the grid ratings of the construct profiles for element #3 (“my firm as I imagined it would be in 10 years”) and element #1 (“my firm as it was when it first started”). This indicator is expressed in algebraic notation as:

$$T_i = \sum_{j=1}^N |Z_j - X_j|$$

where  $T_i$  = the index score of the  $i$ th respondent

$N$  = the number of constructs (i.e. 12)

$Z_j$  = the rating score assigned to Element #3 on Construct  $j$

$X_j$  = the rating score assigned to Element #1 on Construct  $j$

#### **4.5.3 Vision Content: Focus**

Not surprisingly, the review of the literature concerning vision failed to uncover any previous measures applicable to the content-related focus of vision. In the current study, it was hypothesized that the make-up of the entrepreneur’s support system vis-à-vis the proportion of insiders and outsiders would be dependent on the extent to which the content of the vision focused on internal versus external constructs. Consequently, it was necessary to develop indicators capable of reflecting the concentration of vision on external versus internal aspects. Two such grid-based indicators were developed, both of which capitalized on the fact that each grid was comprised of six external and six internal constructs. (Constructs 1 to 6 represented dimensions external to the firm, whereas constructs 7 to 12 dealt with internal dimensions).

### **Manifest Indicator #6: External Constructs Index**

The first manifest indicator of vision focus was the external constructs index. Fundamental to the interpretation of this index is the concept of an extremity score (Mitterer, Adams-Webber and Sewell, 1989), which is a grid-based measure of rating extremity for a given construct or element. Algebraically, an extremity score (in this example, for a construct) may be expressed as follows:

$$S_n = \frac{\left| \sum_{j=1}^M E_j - P \right|}{M}$$

where  $S_n$  = the extremity score for Construct  $n$   
 $M$  = the number of elements (i.e. 8)  
 $E_j$  = the rating assigned to Element  $j$  on Construct  $n$   
 $P$  = the midpoint of the rating scale (i.e. 4)

Subsequently, the average extremity score for a grid may be calculated as the sum of the extremity scores for all constructs divided by the number of constructs. Finally, the external constructs index is calculated by subtracting the number of internal constructs with extremity scores exceeding the average from the number of external constructs with extremity scores exceeding the average.

### **Manifest Indicator #7: External Extremity Score Index**

This indicator was similar to the external constructs index described above, but was based on actual extremity scores rather than the number of constructs. It was derived by subtracting the sum of the extremity scores for the six internal constructs (i.e. c7 to c12) of a grid from the sum of the extremity scores for the six external constructs (i.e. c1 to c6), and subsequently taking the absolute value of the resultant score. The formula for the index is expressed as:

$$EESI = \left| \left( \sum_{i=1}^6 S_i \right) - \left( \sum_{j=7}^{12} S_j \right) \right|$$

where  $S_i$  = the extremity score for External Construct  $i$   
 $S_j$  = the extremity score for Internal Construct  $j$

The EESI was subsequently recoded by multiplying the score by -1 in order to facilitate interpretation. Higher scores (after recoding) are associated with more "balanced" (i.e. with more equal emphasis on both internal and external components) visions.

## **4.6 OPERATIONALIZATION OF SUPPORT SYSTEM CONSTRUCTS**

### Measuring Diversity

In the network literature reviewed in an earlier chapter it was noted that there is considerable theoretical support for the importance of diversity as an explanatory variable. The review also revealed, however, serious deficiencies in pre-existing measures of the diversity construct. Past research has tended to operationalize diversity in terms of tie strength, which is typically measured by the proportion of strangers amongst the five closest members of a personal network. In a case where all five members are strangers, a score of 1.00 would be recorded, which is obviously the maximum score achievable. Such a score indicates a maximum proportion of strangers or weak ties, but unfortunately does not reflect the concept of diversity, which should be concerned with the relative balance between strong and weak ties. It is argued here, therefore, that a more appropriate measure of diversity would assign a maximum score in situations where the proportion of weak ties is equal to the proportion of strong ties.

In the current study, all measures of diversity (both value- versus convenience-based diversity and insider/outsider diversity) were designed to reflect the alternate approach described above. In brief, this was accomplished by comparing the observed score of a group of supporters with an "ideal" score representing the hypothetical maximum score obtainable given the number of supporters present in that particular group, assuming an equal proportion of, for example, value- and convenience-based supporters. This principle was applied consistently in the case of all diversity-related indexes. The actual scoring procedure will be outlined in greater detail in subsequent sections dealing with specific indicators.

#### **4.6.1 Supporter Diversity: Value-versus Convenience-Based Supporters**

Two manifest indicators were utilized to measure the diversity of an entrepreneur's support system in terms of value- versus convenience-based supporters. Both indicators consisted of summative indexes rather than individual questionnaire items. The first indicator measures diversity in terms of the number of value- versus convenience-based supporters, whereas the second indicator utilizes value- and convenience-based "scores" in which the value/convenience dimension is viewed as a continuum. Both indexes are considered moderately complex, with each requiring several steps in its derivation. The next section provides the conceptual foundation for distinguishing between value- and convenience-based support relationships.

##### Value-based versus Convenience-based Support Relationships

According to Sooklal (1991), value-based support involves "contribution or support to a "cause," principle or initiative without any discernable promise of reciprocity" (p. 835). Convenience-based support, on the other hand, refers to "an amoral transactional relationship which is based on explicit or implied exchange. The exchanges involved need not be physical or material in nature. Indeed, they usually involve oral and private commitments affecting social legitimacy and territorial boundaries." (p. 836).

Sooklal's study (1991), it must be remembered, dealt with support for a divergent vision within an existing large organization. One problem for the present study is that the use of employee status to operationalize the insider-outsider dimension (see below) would seem to preclude the possibility of value-based insider support since employees are, and expect to be, remunerated by the entrepreneur. This problem, however, may be the result of oversimplification arising from the assumptions that both the value- versus convenience-based dimension and inside versus outside dimension should be treated as dichotomous variables. A similar problem arises, for instance, in situations where the manager or loans

officer of a lending institution provides financial assistance to an entrepreneur in the course of his/her job duties; here the person is merely performing the duties of their job and the financial institution may in fact earn a profit from the transaction, yet it is also possible that the lending officer has been captivated by the vision of the entrepreneur and would not make the loan were this not the case. These kinds of problems and arguments can readily be extended to employees of government agencies and departments, shareholders, and family and friends of the entrepreneur.

It is argued here that more appropriate measures would allow for different levels of each variable (i.e. value- versus convenience-based and insider versus outsider) in order to reflect the complexity present in such awkward, yet highly realistic and frequent, situations. The next two sections describe the measurement practices adopted in the current study to operationalize value-based relationships and convenience-based relationships in a manner consistent with this position. Two subsequent sections describe the derivation of the two indexes employed as manifest indicators of the value- versus convenience-based diversity construct.

#### Convenience-Based Relationship Score

Each supporter of an entrepreneur was assigned a score of 0-3 to reflect the degree of that individual's stake in the compensation derived from his/her relationship with the entrepreneur. Overall, a low score was indicative of a weak or indirect relationship between the compensation received (if any) by the supporter and the provision of assistance. Thus, higher convenience-based relationship scores suggested that the compensation expected or received from the provision of assistance could be a powerful motivator for providing support. In cases where a supporter provided multiple forms of support with varying levels of expected compensation, the highest score that could be associated with any particular level was ultimately assigned; this practice was adopted in

order to ensure that the value-based or “vision-based” motivation-based interpretation of the score would remain conservative.

A score of zero, indicating no compensation or exchange whatsoever, was awarded in instances where the supporter was not providing assistance as part of his/her job-related duties and the following structured interview questions all elicited negative responses:

“Did any supporter listed here receive or expect to receive any compensation or economic benefit in exchange for providing this support?”

“Did you make any commitment to any supporter, either implicitly or explicitly, in return for his/her support?”

“Did you feel that you were obligated to any of the supporters or that you owed anyone a favour of some sort in return for his/her support?”

A score of one was assigned in those instances where a supporter provided assistance to the entrepreneur in the course of performing his/her job-related duties, but did not stand to gain direct monetary benefit from providing this assistance. Examples of this often included bankers, government employees and employees of suppliers, whose job it was to provide assistance under appropriate circumstances, but who were in receipt of a salary and generally would not stand to benefit directly by a specific increase in compensation from providing this assistance. A score of two was assigned where the supporter was either an employee or shareholder of the entrepreneur’s firm. In such situations, it can be argued that the supporter has a stronger stake in the success of the firm, even though there may not be specific compensation for the performance of a particular task. Finally, a maximum score of three was awarded in instances where a specific payment or fee could be linked directly to the assistance provided; moreover, such compensation needed to benefit the individual directly in addition to or rather than his/her employer. Such instances, for example, might include the purchase of legal services, the services of a construction contractor, or the purchase of specific services from a family member. Table 4.2 provides a summary of the scoring procedure for the convenience-based relationship score (CBRS).



Table 4.2  
Coding Procedure for CBRS

Score	Application & Interpretation
0	No compensation
1	Outsider performing job-related duties
2	Employee or shareholder of entrepreneur's firm
3	Specific payment for specific service(s)

The total convenience-based relationship score (TCBRS) for an entrepreneur's support system was derived by summing the individual CBRS scores across the supporters comprising the group.

$$TCBRS_i = \sum_{j=1}^g CBRS_j$$

where  $TCBRS_i$  = Total Convenience-Based Relationship Score for the  $i$ th entrepreneur  
 $CBRS_j$  = Convenience-Based Relationship Score for the  $j$ th supporter  
 $g$  = Total number of supporters comprising the entrepreneur's support system

Since the maximum obtainable CBRS for any given supporter is three, it follows that the maximum TCBRS for any particular entrepreneur is equal to  $g \times 3$ ; for example, for a support system consisting of four supporters the maximum TCBRS would be  $4 \times 3 = 12$ .

#### Value-Based Relationship Score

"Structural embeddedness" is the term employed by Hall and Wellman (1982) to describe the degree to which network ties are maintained only because of their obligations to larger social structure (e.g. kinship, work). Hall and Wellman employed three (rather than two) categories to reflect different levels of the variable: 1) ties which are voluntaristic and not embedded, 2) voluntaristic ties which are both voluntaristic and embedded, and 3) ties which are embedded and not voluntaristic. An assumption of the

current study is that voluntaristic ties will tend to reflect a greater sharing of values between persons than an embedded tie that is not voluntaristic.

A summative index was employed to operationalize the extent of a value-based relationship between an individual supporter and an entrepreneur. A score of either one or zero was awarded on each of three dichotomous variables (to be described below) comprising the index, resulting in three separate scores of one or zero in the case of a particular supporter; these three scores were subsequently summed to obtain an overall value-based relationship score. It should be noted that, although it was not an overriding consideration, having a maximum score equal to that of the convenience-based relationship score was somewhat advantageous in that no subsequent adjustment was required in order to ensure that the two scores were of equal weight.

The three items comprising the summative index consisted of the supporter's compensation score, voluntaristic score and intimate score. For the compensation variable, a score of one was awarded if no compensation whatsoever was received or expected by the supporter; otherwise a score of zero was assigned. A voluntaristic tie was also assigned a score of one. A voluntaristic tie was operationalized by a positive response to the question (posed to the entrepreneur in reference to his/her key supporters), "If you were no longer operating the business, with which of these people do you think you would continue to maintain a relationship?" (adapted from Hall and Wellman, 1982); if an individual supporter was not named, s/he received a score of zero. Finally, an intimate relationship also received a score of one. An intimate relationship was operationalized by the question, "Are any of these people among those friends or relatives whom you feel are closest to you outside your home?" (adapted from Wellman and Wortley, 1988). The value-based relationship score (VBRS) for one supporter can be summarized as follows:

$$\text{VBRS} = \text{compensation score} + \text{voluntaristic score} + \text{intimate score}$$

(1,0)                      (1,0)                      (1,0)

The total value-based relationship score (TVBRS) for an entrepreneur's support system was derived by summing the VBRS's across the supporters within the group.

$$TVBRS_i = \sum_{j=1}^g VBRS_j$$

where  $TVBRS_i$  = Total Value-Based Relationship Score for the  $i$ th entrepreneur  
 $VBRS_j$  = Value-Based Relationship Score for the  $j$ th supporter  
 $g$  = Total number of supporters comprising the entrepreneur's support system

### **Manifest Indicator #8: Diversity: Value/Convenience Number Index**

This measure of value- versus convenience-based supporter diversity is based on the balance between the numbers of value- versus convenience-based supporters comprising an entrepreneur's support system. Recalling the arguments presented earlier, maximum diversity in this case would be achieved where the number of convenience-based supporters is equal to the number of value-based supporters. Hence, the maximum or ideal number of value-based supporters for a support system consisting of "g" supporters (where  $g$  = the number of supporters comprising an entrepreneur's support system) would be equal to  $g \div 2$ . Similarly, maximum diversity in the case of convenience-based supporters is achieved when one-half of the support system consists of convenience-based supporters [i.e. number of convenience-based supporters =  $g \div 2$ ].

For the purposes of this measure, a supporter was considered to be convenience-based if his/her Convenience-Based Relationship Score (CBRS) was greater than zero. A value-based supporter was similarly defined as a supporter with a Value-Based Relationship Score greater than zero. The number of convenience-based supporters within an entrepreneur's support system was calculated by a simple count of the number of convenience-based supporters meeting the criteria of the operational definition (i.e.

CBRS>0). Similarly, the number of value-based supporters within a support system was determined by counting the number of supporters with VBRS's greater than zero.

A "Diversity: Number of Value-Based Supporters" score (DIVNVBS) was calculated for each entrepreneur's support system as the proportion of value-based supporters compared to the ideal number of value-based supporters. The algorithm for calculating DIVNVBS is as follows:

If the number of value-based supporters  $\leq$  (total number of supporters  $\div$  2),

$$\text{DIVNVBS} = \frac{\text{number of value - based supporters}}{\text{number of supporters}}$$

If the number of value-based supporters  $>$  the total number of supporters,

$$\text{DIVNVBS} = 1 - \left( \frac{\text{number of value - based supporters}}{\text{number of supporters}} \right)$$

A "Diversity: Number of Convenience-Based Supporters" score (DIVNCBS) was also calculated for each entrepreneur in corresponding fashion:

If the number of convenience-based supporters  $\leq$  (number of supporters  $\div$  2),

$$\text{DIVNCBS} = \frac{\text{number of convenience - based supporters}}{\text{number of supporters}}$$

If the number of convenience-based supporters  $>$  the number of supporters,

$$\text{DIVNCBS} = 1 - \left( \frac{\text{number of convenience - based supporters}}{\text{number of supporters}} \right)$$

It can be seen that higher scores for both DIVNVBS and DIVNCBS are indicative of greater diversity.

Finally, a Diversity: Value/Convenience Number Index (DIVVCNI) was constructed for each entrepreneur by summing the entrepreneur's DIVNVBS and DIVNCBS.

$$DIWCNI_i = DIVNVBS_i + DIVNCBS_i$$

where  $i$  represents the  $i$ th entrepreneur

The DIWCNI served as the first manifest indicator of value- versus convenience-based diversity within a support system. Higher scores are associated with greater diversity and lower scores with less diversity.

### **Manifest Indicator #9: Diversity: Value/Convenience Score Index**

Recalling that the maximum total value-based relationship score possible was equal to the number of supporters in an entrepreneur's support system multiplied by three (three being the maximum score possible for an individual supporter), it follows that the "ideal" value-based relationship score (IVS), indicating maximum diversity, is equal to one-half the maximum obtainable TVBRS for any given support system.

$$IVSi = \frac{(g_i) \times 3}{2}$$

where  $IVS_i$  = the Ideal Value-Based Relationship Score for the  $i$ th entrepreneur  
 $g_i$  = the number of supporters comprising the  $i$ th entrepreneur's support system

Similarly, the ideal convenience-based relationship score (ICS) under a scenario of maximum diversity can be calculated as:

$$ICSi = \frac{(g_i) \times 3}{2}$$

where  $ICS_i$  = the Ideal Convenience-Based Relationship Score for the  $i$ th entrepreneur  
 $g_i$  = the number of supporters comprising the  $i$ th entrepreneur's support system

A "Diversity: Value-Based Score" score (DIVVBS) was calculated for each entrepreneur's support system by comparing the TVBRS obtained with the ideal VBRS for that system. The algorithm for calculating DIVVBS is as follows:

If  $TVBRS \leq IVS$ ,

$$DIVVBS = \frac{TVBRS}{IVS}$$

If  $TVBRS > IVS$ ,

$$DIVVBS = \frac{2 (IVS - TVBRS)}{IVS}$$

A "Diversity: Convenience-Based Score" (DIVCBS) was also calculated for each entrepreneur in the same manner:

If  $TCBRS \leq ICS$ ,

$$DIVCBS = \frac{TCBRS}{ICS}$$

If  $TCBRS > ICS$ ,

$$DIVCBS = \frac{2 (ICS - TCBRS)}{ICS}$$

Higher scores for both DIVVBS and DIVCBS indicate greater diversity.

Finally, a Diversity: Value/Convenience Score Index (DIVVCSI) was constructed for each entrepreneur by summing the entrepreneur's DIVVBS and DIVCBS.

$$DIVVCSI_i = DIVVBS_i + DIVCBS_i$$

where  $i$  represents the  $i$ th entrepreneur

The DIVVCSI served as the second manifest indicator of value- versus convenience-based diversity within a support system. Higher scores are associated with greater diversity and

lower scores with less diversity; thus the direction is consistent with the first indicator of diversity, manifest indicator #8.

#### **4.6.2 Supporter Diversity: Inside versus Outside Supporters**

The diversity of an entrepreneur's support system as it concerned the balance of insiders versus outsiders was measured by one manifest indicator consisting of a summative index. In general, the principles involved in its derivation tend to parallel those employed in measuring value- versus convenience-based diversity (described above). Consequently, the current section is structured in a fashion similar to the preceding section.

##### Definitional Issues Concerning the Insider/Outsider Dimension

Within the paradigm of visionary leadership, Sooklal defined an insider as an employee of the organization, and an outsider as a stakeholder not employed by the organization (p. 836). At first glance, the distinction between insiders versus outsiders appears to be quite straightforward. Nevertheless, in the context of entrepreneurship this dichotomous variable poses problems for both theory and operationalization. The first problem to be addressed concerns how one is to deal with the "preorganizational" (Katz and Gartner, 1988) period? During the time period prior to the existence of the organization the terms "insider" and "outsider" cease to retain their conventional meaning since one of the requisite properties of an organization, "boundary" (ibid.), has not yet been established. As noted by Hansen and Wortman (1991), the boundary property is often the last property to be established. Moreover, even in the case of established organizations it is not always clear where the organization ends and the environment begins. Dibben and Scott (1995) provide an illuminating and engaging analysis of this latter issue, both in the case of a large multinational firm and as it affects new ventures.

In view of the foregoing it appeared worthwhile to find a suitable alternative to operationalizing the insider-outsider construct. This study proposes that a substantial aspect of the traditional insider-outsider dimension be retained during the preorganizational period by reconceptualizing the construct in terms of the "structural embeddedness" of the relationship or network tie. Actions of this type are in line with the theorizing and recommendations of Hansen and Wortman (1991), who argue that certain social network research variables developed in the discipline of social anthropology can be usefully employed to study the pre-organization in a manner corresponding to the traditional study of the organization via strategic management variables. As an example, they suggest that network density could serve as a useful proxy for the organization variable "integration." Incorporating the structural embeddedness concept within the insider-outsider dimension offers two important advantages. First, it is capable of effectively dealing with the preorganizational period. Second, it is more explicit in its recognition of complexity in that it can account for relationships which are defined by various social structures in addition to organization boundary.

#### Insider Score

In the current study, four potential structural relationships between supporter and entrepreneur were originally chosen to operationalize the insider dimension. These relationships consisted of employee, shareholder, director and family relative or kin. Each relationship type was treated as a dichotomous variable, with a score of one assigned if the relationship applied to the supporter and a zero assigned if no such relationship existed. Thus, an Insider Score (IS) could be constructed for each supporter by summing the values obtained on four relationship variables. Subsequent analysis of the data collected during Phase Four of the research project, however, revealed that, of the 191 supporters identified in the study, 40 were shareholders and 38 of these 40 shareholders were also



directors of the firms. Since shareholders of firms were also directors in nearly all instances, the director variable was subsequently dropped from the index in order to prevent an excessive weighting being assigned to the shareholder dimension. The revised version of the IS therefore included only three relationship variables: employee, shareholder and kin. The IS index can be summarized as:

$$IS_j = \underset{(1,0)}{\text{Employee Score } j} + \underset{(1,0)}{\text{Shareholder Score } j} + \underset{(1,0)}{\text{Kin Score } j}$$

where  $j$  represents the  $j$ th supporter within an entrepreneur's support system

It can be seen from the above that the maximum Insider Score obtainable by any one supporter is three. A higher score on the IS indicates a relationship defined by greater structural embeddedness.

Following the compilation of the IS's for the individual supporters within an entrepreneur's support system, a Total Insider Score (TIS) for each entrepreneur was derived by summing the IS's across the supporters within the group.

$$TIS_i = \sum_{j=1}^g IS_j$$

where  $TIS_i$  = Total Insider Score for the  $i$ th entrepreneur  
 $IS_j$  = Insider Score for the  $j$ th supporter  
 $g$  = Total number of supporters comprising the entrepreneur's support system

#### Ideal Scores and Sub-Indexes

Two sub-indexes were utilized to measure the diversity of insiders versus outsiders. The first, termed the Diversity: Insider/Outsider Number Index (DIONI), measured diversity utilizing a count of the number of insiders and outsiders comprising a support system. The

second measure, a Diversity: Insider/Outsider Score Index (DIOSI), was a summative index based on the Total Insider Score for a given entrepreneur.

The DIONI measures diversity in terms of the balance between the number of insiders and outsiders comprising an entrepreneur's support system. An ideal score or maximum diversity is achieved when the number of insiders is equal to the number of outsiders. Thus, the ideal number of insiders is equal to  $g \div 2$ , where  $g$  = the number of supporters comprising the entrepreneur's support system. For the purposes of this measure, a supporter was operationally defined as a insider if his/her Insider Score was greater than zero, and an outsider if the IS was equal to zero. The DIONI was calculated for each entrepreneur's support system using the following algorithm:

If the number of Insiders  $\leq$  (number of supporters  $\div$  2),

$$\text{DIONI} = \frac{\text{number of Insider supporters}}{\text{number of supporters}}$$

If the number of value-based supporters  $>$  the total number of supporters,

$$\text{DIONI} = 1 - \left( \frac{\text{number of Insider supporters}}{\text{number of supporters}} \right)$$

Because there were no independent criteria available to operationalize the outsider dimension, it would have been redundant to construct a parallel index based on the number of outsiders within the support system. A higher score on the DIONI indicates that the proportion of Insiders/Outsiders is closer to the ideal balance between supporter types (i.e. maximum diversity), and therefore reflects greater diversity.

The DIOSI utilizes the entrepreneur's TIS directly in order to obtain a measure of insider/outsider diversity. Since the maximum TIS obtainable by an entrepreneur is equal to the number of supporters in his/her support system multiplied by three (three being the maximum score obtainable by an individual supporter), it follows that the Ideal Insider Score (IIS) under a condition of maximum diversity is equal to one-half the maximum TIS obtainable by any given support system. The algorithm for calculating DIOSI is as follows:

If  $TIS \leq IIS$ ,

$$DIOSI = \frac{TIS}{IIS}$$

If  $TIS > IIS$ ,

$$DIOSI = \frac{2(IIS - TIS)}{IIS}$$

A high score on the DIOSI is indicative of greater diversity.

### **Manifest Indicator #10: Diversity: Insider/Outsider Index**

The Diversity: Insider/Outsider Index (DIOI) was derived by summing the scores obtained by an entrepreneur on the DIONI and DIOSI.

$$DIOI_i = DIONI_i + DIOSI_i$$

where  $i$  represents the  $i$ th entrepreneur

Higher scores are associated with greater diversity.

#### **4.6.3 Support Strength**

Five manifest indicators were utilized to measure the strength of received support. In general, the literature reviewed in earlier sections suggested that there was strong theoretical support for the importance of support strength as a major explanatory construct, with empirical work concerning support tending to be much less conclusive. Prior research concerning personal networks, small business support and social support provided some guidance for selecting appropriate indicators, although problems evident in past approaches also pointed to the need for new measures.

### **Manifest Indicator #11: Supporter Count**

The most basic network metric is size. Previous research has established that the average entrepreneur's network comprises 7-10 direct contacts (Birley, Cromie and Meyers, 1991). In the current study the number of supporters was anticipated to be smaller due to two factors. First, the current research restricted the size of the entrepreneur's "network" by limiting its scope to support actually received by the entrepreneur. Second, the current study focused on only key supporters as defined by the entrepreneur, rather than all people who provided support. In addition, researchers in the field of social support have reported that gathering data on more than 5-10 persons in the individual's network yields rapidly diminishing returns.

In view of the foregoing and because of the need to collect a considerable amount of data concerning each of the key supporters identified, it was decided to impose a limit of six supporters. This decision has strong precedent in the small business network literature and in fact is still more conservative in its restrictions, since standard practice in the area is to limit network size to only five ties, which, importantly, tend to be considerably more broadly defined than is the case in the current study. The exploratory research conducted during Phase Three of the current study also provided a final opportunity to check whether it was reasonable to impose a limit on the number of supporters. The manifest indicator representing the size of the entrepreneur's support system was derived by counting the number of key supporters identified by the entrepreneur, with a maximum of six being recorded. Higher scores indicate greater strength of support.

## **Manifest Indicator #12: Number of Different Relationships**

The number of different types of social relations existing between the entrepreneur and his/her supporters was expected to provide a useful indication of support strength because stronger visions should be capable of soliciting a broader range of supporters, including supporters outside the immediate circle of social support available to most entrepreneurs. These "extended" relationships should be more likely to both expand the entrepreneur's network, along with any benefits that may be associated with such expansion, including increased visibility, credibility and, according to network theory, the range and quality of information and support available to the entrepreneur. Firms with support systems having a large number of different types of relationships are more likely, therefore, to possess fewer resource gaps than firms characterized by a small range of relationship types.

The manifest indicator reflecting the number of relationship types represented in one support system was derived by counting the number of different relationships appearing in that system. First, each supporter within the system was assigned to one of nine categories representing the nature of that supporter's primary relationship with the entrepreneur. The relationship categories used in the current study were adapted from categories used in prior research (see Table 4.3), but also included "employees" in order to capture supportive relationships with people inside the firm. The nine categories were:

1. Family Relation
2. Friend
3. Employee
4. Customer
5. Supplier
6. Professional Advisor
7. Bank
8. Government
9. Other

The category "family relation" included all relatives of the entrepreneur. "Professional advisor" included accountants, lawyers and consultants. "Government" comprised

representatives of federal, provincial and municipal departments as well as government-sponsored support agencies.

The number of different relationships appearing within one support system was then determined by counting the number of categories in which one or more supporters appeared. For example, a support system comprised of three supporters, two of whom were family relations and the third a supplier, would receive a score of two because only two categories of relationships are represented. Since the maximum number of supporters in a system was restricted to six, the maximum score obtainable on this indicator is also six. Higher scores are indicative of greater support.

Table 4.3  
Supporter Categories Utilized in Prior Research

Study	Cromie (1991)	Smeltzer et al. (1991)	Smallbone et al. (1993)	Aitkens & Lowe (1994)
Type	Empirical	Empirical	Empirical	Empirical
Focus	Problems faced by young firms	Information use in start-ups	External assistance in mature SMEs	Stakeholders & SME strategy formation
Categories	Support agencies Accountant Business contact Family/Friend Technical agency Bank	Accountant Attorney Friend/Relative Insurance agent Customer Banker Supplier Govt. University resources Business executive Private consultant Other	Public agencies Consultants Banks & accountants Informal sources Trade assoc. Other	Family members Other managers Employees Professional advisors Investors Creditors/bankers Customers Suppliers

### Manifest Indicator #13: Occupational Status Index

In the review of the network literature (Chapter 2) the commonplace practice of adopting frequency-based measures of network activity as a measure of network "effectiveness" was strongly criticized, as it was shown that such measures are prone to be inversely related to the quality of support. The literature can also be criticized for failing to take into account potential differences in the "quality" of the network itself. That two

different entrepreneurial networks of equal size would be expected to provide support of equal value would seem to be an assumption of heroic proportions, since it fails to account for potentially important differences in social power and expertise amongst individual network members. The current study attempts to overcome these weaknesses by specifically incorporating an indicator of support strength capable of accounting for such individual differences.

It was decided to use occupational status as a surrogate measure of power. Given the potentially broad variety of supporters and supportive contexts anticipated to be encountered in the current study, a broad-based measure of power was required. Although some might take the position that power is relative to specific situations and circumstances and cannot be measured in isolation, Blalock (1968) has argued forcefully that such a position is extremist and inconsistent with the realities of social science. Of the various types of measures used to stratify society, prestige ratings of persons and socioeconomic status are the two most common (Reiss, 1961). Income, education and occupation are the three most commonly used measures of socioeconomic status. In the current research, however, the validity of the self-reports of entrepreneurs concerning the incomes of their supporters would have been highly suspect. Consequently, an alternate method of operationalizing social status was needed; occupational prestige provided a closely analogous concept, possessing an impressive research base and desirable measurement properties.

The concept of occupational prestige embodies elements of socioeconomic status and social honour (Nakao, 1992). Education and income are the main factors associated with an occupation's prestige (Duncan, 1961), accounting for about 80 percent of the variance in prestige ratings (Nakao, 92). As Duncan has observed, "Occupation... is the intervening activity linking income to education." (1961, p. 117). Extensive research has demonstrated the stability of ranking hierarchies of occupational prestige across divergent methodologies (ibid) and operationalizations (Chartrand et al., 1987), and nations and

sub-groups of society (ibid). Occupational prestige is also remarkably stable over time. Prior replication studies have reported correlations of .99 between 1947 and 1964, .96 between the mid-1960s and 1989, and .92 between 1925 and 1982 (Nakao, 1992; Chartrand et al., 1987). This temporal stability can be attributed to the fact that the relative income and education levels associated with the occupations tend to remain stable across time, and also to the fact that prestige is fixed by the division of labour and workplace authority (thus, the prestige of the bank manager is likely to remain higher than that of a bank teller) (Nakao, 92). Occupational prestige is not influenced by the gender of the rater or the gender of the worker (Chartrand, 1987).

The current study employed Duncan's Socioeconomic Index for All Occupations (1961a) as the surrogate measure of social power. Duncan's index was constructed as a substitute for the widely known NORC (National Opinion Research Center)-North-Hatt occupational prestige scores in studies where the researcher wishes to assign ratings to occupations not included in the NORC list. According to Reiss, "Few empirical studies have achieved a place in the scientific literature of sociology comparable to that of the NORC-North-Hatt investigation." (1961). The original NORC ratings were derived by having subjects rank occupations according to their perceived prestige. Unfortunately, however, NORC ratings are provided for only 88 occupations.

Duncan's index algorithm predicts NORC-type status score for a given occupation from the education and income associated with the occupation, using the original NORC scores as a criterion. The construction and properties of the index are described in Duncan (1961a, 1961b). The Duncan index scores utilized in the current study were obtained from Appendix B in Reiss (1961), which lists the index scores for 425 occupations. The range of index scores listed extends from 0-96. High scores are associated with higher occupational status. The procedure utilized in the current study assigned a Duncan index score to each supporter in an entrepreneur's support system. The manifest indicator value consisted of the mean index score for that entrepreneur's support system.



### **Manifest Indicator #14: Average Resources Per Supporter**

The fourth manifest indicator of support strength is intended to overcome another important weakness apparent in prior network approaches. It was observed in the literature review (Chapter 2) that network research on entrepreneurship has assumed that stronger networks and more frequent network activation result in greater resources being provided to the entrepreneur. Unfortunately, however, this key assumption remains untested because network research has not incorporated resource provision as an explicit variable in empirical work to date. In the current study manifest indicator #14 provides a measure of the quantity of resources received from the support system by the entrepreneur.

Table 4.4 summarizes the various categories of resources provided by supporters in a wide range of prior research. It is apparent that there exist numerous forms of resources which may be acquired through the support of others. In the current study the number of categories employed was more restricted, for two reasons. First, some of the resource types appearing in Table 4.4 are clearly more applicable to venture capital-funded firms rather than a typical small firm start-up. Examples of such categories would include "cooperation with other portfolio firms," "recruitment/ replacement of CEO," "resolve compensation issues," and "negotiate employment term." Secondly, a study by Hall and Wellman (1982) employing factor analysis indicates that extensive lists of types of help can be reduced to a smaller and more manageable number of relevant dimensions.

In the current study the various forms of support provided by each supporter were ascribed to one or more of the following eight categories:

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. advice                   | 5. confidential information |
| 2. network contacts         | 6. emotional support        |
| 3. served as sounding board | 7. extraordinary labour     |
| 4. financial assistance     | 8. other                    |

In the above list the category "financial assistance" was defined broadly to include not only direct financial contributions to the business (e.g. loans, gifts, equity investments), but also indirect forms of financial help, such as a spouse providing income support from his/her job. "Confidential information" referred to information that was not generally accessible by the general public and which had the potential to be strategically useful to the firm. Examples here might include information concerning competitors, upcoming contracts, etc.. The category "extraordinary labour" included labour and services provided gratis or at below fair market value. The final category, "other," included any forms of assistance not covered by the previous seven categories.

A binary scoring procedure was used to indicate which types of support were provided by a given supporter, with a score of one assigned to each category where support was provided, and a score of zero assigned to categories representing types of resources not provided. The binary scores for one supporter were subsequently summed across categories to provide an index of the quantity of support received from the supporter by the entrepreneur. It is important to note that there was no artificial ceiling placed on the number of "other" types of support included in the calculation of the index; in a hypothetical case where three distinct types of "other" assistance were provided in addition to, say, four pre-defined types, this supporter would receive a score of seven. Hence, there is no limit placed on the maximum score obtainable by a supporter. The resultant Quantity of Support Score (QSS) for a given supporter may be expressed algebraically as follows:

$$QSS_j = \sum_{v=1}^w R_v$$

where  $QSS_j$  = the Quantity of Support Score for the  $j$ th Supporter  
 $R_v$  = the binary score assigned to the  $v$ th category  
 $w$  = the number of categories of resource types

Table 4.4  
Support Categories Utilized in Selected Prior Research

Study	Rosenstein et al. (1993)	Hall & Wellman (1982)	Gorman and Sahlman (1989)	Landstrom (1990)	Ehrlich et al. (1994)	Fried & Hisrich (1995)
<b>Focus</b>	Board of Directors	Social Support	Venture Capitalists	Venture Capitalists	Venture Capitalists	Venture Capitalists
<b>Approach</b>	Empirical	Empirical	Empirical	Empirical	Empirical	Theoretical
<b>Categories Utilized</b>	<p>Serving as sounding board</p> <p>Interfacing w/ investor group</p> <p>Monitoring operating performance</p> <p>Monitoring financial performance</p> <p>Recruitment/replacement of CEO</p> <p>Deal w/ short-term crises &amp; problems</p> <p>Contacts w/ key customers</p> <p>Develop new strategy</p> <p>Obtain debt financing</p> <p>Obtain equity financing</p> <p>Recruit/replace mgt. team</p> <p>Develop original strategy</p>	<p>Emotional aid</p> <p>Job leads</p> <p>Financial aid</p> <p>Minor goods &amp; services</p> <p>Major services</p>	<p>Obtaining additional financing</p> <p>Strategic planning</p> <p>Management recruitment</p> <p>Operational planning</p> <p>Introduction to potential customers &amp; suppliers</p> <p>Resolve compensation issues</p>	<p>Financial expertise</p> <p>Financial security</p> <p>Act as a sounding board</p> <p>Professionalize the firm</p> <p>Wider range of contacts</p> <p>Facilitate contacts with interested third parties</p> <p>Expertise in negotiating &amp; contract-making</p> <p>Obtaining capital from outside sources</p> <p>Cooperation with other portfolio firms</p> <p>Formulating a business idea &amp; strategic planning</p> <p>Administration</p> <p>Marketing expertise</p> <p>Production expertise</p> <p>Technological expertise</p> <p><i>(Items in this column listed in decreasing order of importance)</i></p>	<p>Search for management team</p> <p>Interview/select mgt. team</p> <p>Negotiate employment term</p> <p>Interface with investor group</p> <p>Develop professional support group</p> <p>Obtain debt financing</p> <p>Obtain equity financing</p> <p>Formulate business strategy</p> <p>Develop actual product/service</p> <p>Select vendors/equipment</p> <p>Formulate marketing plan</p> <p>Test/evaluate mkt. plan</p> <p>Solicit customers/distributors</p> <p>Monitor financial performance</p> <p>Monitor operating performance</p> <p>Serve as sounding board</p> <p>Motivate personnel</p> <p>Replace mgt. personnel</p> <p>Manage crises &amp; problems</p>	<p>Arranging financing</p> <p>Arranging corporate partnerships or acquisitions</p> <p>Selecting top management</p> <p>Serve as sounding board</p> <p>Finding candidates for employment</p> <p>Finding service providers</p> <p>Providing customers</p> <p>Locating strategic information</p> <p>Image &amp; credibility</p> <p>Moral support</p> <p>General business knowledge</p> <p>Providing discipline</p>

Manifest indicator #14 was derived by taking the mean QSS of the supporters comprising a given entrepreneur's support system. The mean score was utilized rather than the summed or total QSS in order to ensure the measure would be independent from the number of supporters comprising the system. Higher scores are associated with greater quantities of resources received and, hence, greater support strength.

### **Manifest Indicator #15: Resource Scope**

This indicator is intended to measure the diversity or scope of resources received from the supporters by the entrepreneur. Diverse support systems were hypothesized to provide greater resource diversity, resulting in fewer resource gaps in the firm. Manifest indicator #15 utilizes the same categories used by manifest indicator #14, but emphasizes resource scope rather than quantity of resources (This is because no additional credit is given for categories in which resources were provided by more than one supporter). The indicator itself is an index score reflecting the number of different types of resources provided by an entrepreneur's support system.

The first step in deriving the index score involved assigning a score of one to each category where support was provided by one or more members of an entrepreneur's support system, and a score of zero assigned to categories where no resources were provided. The second, final step involved summing the entrepreneur's score across resource categories. Higher scores indicate greater support strength.

## **4.7 OPERATIONALIZATION OF THE PERFORMANCE CONSTRUCT**

### **4.7.1 Performance Indicators Used in Prior Research**

In Chapter One 51 studies investigating the factors related to small firm performance were reviewed. Each of these studies utilized performance as the dependent variable. As will be demonstrated shortly, however, the diversity of measures utilized to operationalize small firm performance is quite remarkable. Table 4.5 summarizes the various measures utilized in the 51 articles sampled. It can be seen that, after excluding measures which appear to be identical, 24 objective and 19 subjective measures of performance were identified.

Objective performance measures refer to measures which are direct and quantitative in nature (e.g. "What was your sales level in 1993?"), whereas subjective measures are often referred to as perceptual (Brush and Vanderwerf, 1992) and provide a relative assessment of performance rather than exact numerical values (Dess and Robinson, 1984). A subjective measure of sales growth, for example, might be obtained by asking the respondent to rate his/her firm's growth in sales as excellent, good, fair, etc.. Even after further eliminating eight subjective indicators in Table 4.5 which are based on measures found in the list of objective indicators, there still remain 35 different bases upon which performance has been measured. Similar diversity was discovered by Brush and Vanderwerf (1992), who found 35 measures of performance utilized in 34 studies dealing with performance (this summary finding was reported by the authors without any further explication). Overall, the summary table suggests that both objective and subjective indicators have received extensive usage in small firm research, and that both methods appear to achieve roughly equal acceptability in the process of peer review.

Table 4.5  
Performance Measures Utilized in Sample of 51 Articles

Objective Measures		Subjective Measures	
1	bankruptcy vs non-bankruptcy	1	personal satisfaction
2	current ratio	2	shortfalls in expectations
3	current on L/T debt	3	ROS
4	employment growth	4	ROA
5	employment growth vs shrinkage	5	ROE
6	entrepreneur's annual income	6	ROI
7	exports	7	sales level
8	growth relative to competition	8	sales growth
9	market share	9	employment growth
10	net output per person	10	overall performance
11	overall performance	11	meeting plan
12	P/E ratio	12	profitability
	*productivity (s/a 21)	13	gross margin
13	profit vs no profit	14	employee satisfaction
14	profit level	15	survivability
15	profit growth	16	ability to attract outside capital
16	ROA	17	cash flow
17	ROS	18	ability to fund growth from profits
18	ROE		*contribution to society (s/a 9)
19	ROI *Return on net worth (s/a 18)	19	technical product development
19	sales level		
20	sales growth		
21	sales per employee		
22	sales/assets		
23	small business award recipient		
24	survival		
* s/a = same as			

Table 4.6 provides an indication of the popularity of some of the major methods of operationalizing performance. A single measure of performance was utilized in 23 studies; hence, 28 studies representing 55 percent of the total sample employed multiple indicators. Two important advantages can be attributed to the use of multiple indicators of performance. First, it has been argued that organizational effectiveness should be assessed either in terms of the firm's ability to satisfy numerous constituencies, including the owner, customers, employees, creditors, suppliers, government and the community (Pickle and Friedlander, 1967; Robinson, 1983), or in terms of its ability to meet organizational goals (Etzioni, 1960). The measurement issue here concerns content validity, or the extent to which the indicators measure different aspects of the concept (De Vaus, 1990). Both theoretical

frameworks suggest that performance is often multidimensional, pointing to a need for multiple indicators in order to measure the construct adequately. The second advantage stems from the observation that the variables correlated with performance may change as the definition of performance changes. This latter issue surfaced during the review of performance-based studies conducted in Chapter One and has been also identified as a potential problem by Chandler and Hanks (1993) and Cooper and Gascón (1992).

Table 4.6  
Summary of Performance Measures Utilized in Review  
Sample of 51 Success Factor Studies

Frequency Count	Study Identification Number (from Appendix 1.1) by Type of Performance Measure					
	Single Indicator	Composite Index	Sales	Profit /Return	Growth	Survival
1	1	14	8	1	3	5
2	2	42	12	2	4	13
3	5	47	14	3	6	20
4	7	48	18	4	12	30
5	9		19	9	14	34
6	10		25	10	15	38
7	13		39	12	17	39
8	18		42	14	21	40
9	19		46	15	23	41
10	23		49	16	24	43
11	24			20	29	47
12	27			26	31	48
13	28			28	32	
14	29			32	33	
15	30			34	37	
16	31			35	42	
17	35			36	44	
18	38			41	45	
19	40			42	47	
20	43			44	48	
21	46			45	50	
22	49			47		
23	51			48		
24				50		

Researchers who opt for multiple measures of performance are faced with the decision of whether to treat the measures separately or combine them into a composite index. Of the studies depicted in Table 4.6, only four utilized a composite index comprised of multiple measures. Composite indexes are particularly valuable in instances where the researcher wishes to take into account differences in firm objectives; in this case an adaptation of the methodology of Gupta and Govindarajan (1982) is usually employed, which entails weighting the various measures of performance satisfaction by the relative importance assigned to them by the entrepreneur.

Downey and Ireland (1988) offer blunt criticism for policy research failing to acknowledge purposeful (i.e. goal-oriented) behaviour. In their view, such research reveals more about the researcher than it does about strategy. Yet their review of 62 empirical strategic management studies uncovered only one study (Gupta and Govindarajan, 1982) which attempted to address the heterogeneous nature of strategic decision makers' purpose. Such lack of concern for decision makers' objectives can be considered highly surprising in a discipline where firm objectives constitute a fundamental variable and where the need for trade-offs among different objectives has long been recognized. (For example, a firm pursuing growth may spend heavily on advertising to gain market share, thus sacrificing profitability in the short term.) In sum, it appears difficult to dispute and ill-advised to ignore Downey and Ireland's contention that strategies must be judged in light of what they were designed to accomplish. This would seem to apply equally to research on small business, where differences among founder motivations and founder objectives have been well documented.

Chandler and Hanks (1993) have questioned the external validity of satisfaction-based measures such as that developed by Gupta and Govindarajan, claiming they may not accurately reflect objective performance because satisfaction with performance "may be as much a function of the expectations of the founder as objective performance" (p. 395). This position, however, seems to miss the whole point of satisfaction-based measures. Numbers



in and of themselves are devoid of meaning, and while an objective indicator may indeed be quantifiable there is no guarantee that the quantity itself is a meaningful or accurate representation of a firm's performance. In the view of Downey and Ireland (1988), too much research has centred upon what researchers think organizational outcomes should be. In their words, "We have come to define objectivity in terms of what is measured rather than how it is measured." (p. 271).

Despite the criticisms of Chandler and Hanks (1993), the satisfaction with performance index has been acknowledged to possess several desirable attributes, including a high disclosure rate, strong internal consistency and relatively strong inter-rater reliability (ibid). Moreover, research evidence also suggests that subjective indicators are not unrelated to their objective counterparts. In a study by Dess and Robinson (1984), subjective measures were found to be strongly correlated with self-reported objective measures of return on assets and growth in sales.

Table 4.6 also summarizes the relative frequency of occurrence of the most common individual measures of performance, which are: level of sales, profitability, growth and survival. Sales level provides an indication of market acceptance and thus is capable of expressing performance within both the constituent and goal frameworks, but is problematic when utilized as a sole indicator in cross-sectional studies because it contains no information as to whether sales are growing, stable or in decline. In instances where sales level is utilized as an indicator, researchers sometimes request firm performance be reported only in broad categories. Although this latter method sacrifices precision and provides ordinal data rather than metric (or interval) data, its usage can help to overcome the unwillingness of the entrepreneur to disclose such information. Dess and Robinson (1984) have described the latter problem in the following fashion:

Finally, Hollander's (1974) notion of 'idiosyncratic credits' is applicable to privately-held firm research. The researcher builds valuable 'credits' with the owner through expertise, interest, curiosity and conformity to this person's norms of professional conduct. The researcher then 'spends' these credits in obtaining an executive's time and specific information. Following

Hollander's notion, the researcher may spend 'all' of his credits in seeking 'sensitive' performance data. (p. 267).

Category-based sales measures are based upon objectively defined performance criteria, appear to be content valid, and help to overcome problems associated with extreme outliers (Chandler and Hanks, 1993).

Survival as an indicator possesses good objectivity but is of little use to the researcher interested in studying existing firms (Dess and Robinson, 1984). Moreover, it is often the case that the discontinuance of a firm may be entirely unrelated to its performance (e.g. the sale or closure of a firm due to the ill health or retirement of the owner).

Profitability is the most frequently adopted indicator of performance, occurring in 47 percent of the studies reviewed. Profitability is a powerful measure of effectiveness under both the constituent and goal approaches to organizational effectiveness (Robinson, 1983). It is also, however, an accounting-based measure. The potential for bias in accounting-based measures is unfortunately quite significant in the case of large (McGuire, Schneeweis and Hill, 1986), small (Dess and Robinson, 1984) and new (Miller, Wilson and Adams, 1988) firms.

Firm growth is the second most popular measure of firm performance, occurring in 41 percent of the 51 articles sampled. In these studies, growth was measured in a variety of ways, including (in descending order of frequency) sales, number of employees, profits, market share, and growth relative to competitors. Firm growth is consistent with both the constituent and goal approach to measuring organizational effectiveness because it also reflects market acceptance. Although growth in number of employees was utilized on fewer occasions than growth in sales, it should be a less sensitive area of inquiry for the entrepreneur due to the fact that this information is likely more accessible to employees and consequently to the general public; therefore, it should not be as necessary to depict measurement units in broad categories, thus offering more precision than, say, growth in

sales, while at the same time minimizing the number of research 'credits' expended in order to obtain performance data. Number of employees is considered an objective indicator and appears to be relatively easily recalled by the entrepreneur. The author is unaware of any studies which attempt to compare the ease of recall of sales versus employee data, but this would seem to be a useful area of inquiry.

A final issue associated with the operationalization of performance concerns the selection of an information source. Research on new and small venture performance poses several unique challenges which have been well-documented (Chandler and Hanks, 1993; Dess and Robinson, 1984). The two most widely-cited problems are the inapplicability of traditional accounting measures (noted above) and the fact that access to performance data on privately held firms is often severely restricted because owners are the sole gatekeepers to such information (Dess and Robinson, 1984). In response to these obstacles, researchers of small firms have relied primarily on three data sources: self-reports, archival data and information from competitors.

In their review of 34 performance-related small business studies, Brush and Vanderwerf (1992) found that self-reports were utilized in the vast majority of research. Only a few studies used archival data as a secondary source, and competitors, customers and suppliers were reported as sources in only one instance. Archival (e.g. Dun and Bradstreet) sales data tends to be high in reliability, but in general archival data is often not available, and where data is available it is often limited in scope and detail (ibid). Competitors as a source tend to be less cooperative and can be difficult to reach. Moreover, their estimates of the performance of new ventures in past years are less accurate (ibid).

On the other hand, research designed to investigate the relative merits of differing approaches to performance measurement has indicated that self-report data possesses good accuracy and reliability (ibid; Chandler and Hanks, 1993). Using a research design based on multiple triangulation, Brush and Vanderwerf (1992) concluded that information provided by

the owner/founder is high in reliability in the case of sales, profit, employees and sales growth for recent years, with high reliability also demonstrated for past years.

#### **4.7.2 Selection of Performance Indicators**

The foregoing review and analysis suggest the following key decisions confront the small business researcher during the process of operationalizing firm performance:

- a) selection of a theoretical framework
- b) choice of a single versus multiple indicator(s)
- c) selection of objective versus subjective measure(s)
- d) choice of individual indicator(s) and categorical (i.e. nominal or ordinal) versus interval scale data
- e) selection of an information source

In the current study both the goal framework and the constituent approach were adopted to guide the operationalization of performance. This is in line with the advice of Etzioni (1960, who argued that a combination of the strengths of both approaches might be most appropriate. The goal approach would appear to apply for two reasons. First, while recognizing that not all small businesses have formal goals (Robinson, 1983), entrepreneurial vision cannot occur in the absence of any goals whatsoever, and these goals must be rooted in the vision itself. Second, the current research is grounded in concepts derived from strategic management, where goal-oriented behaviour is a fundamental premise. The constituent approach is also inextricably linked to the current study because of the social nature of entrepreneurial vision (which has been discussed at length in an earlier chapter).

Multiple indicators were utilized in the current study in order to reflect the multidimensional nature of firm performance. Specifically, four methods were used to operationalize performance, comprising two objective and two subjective indicators. This combination of measures addressed the concerns of both Robinson (1983), who argued that

multiple measures are necessary to measure an organization's effectiveness, and Downey and Ireland (1988), who maintain that for performance measures to be meaningful they must be designed to take into account individual and firm-specific goals.

### **Manifest Indicator #16: Sales Growth**

The first measure of performance consisted of the percentage increase in firm sales achieved from 1994 to 1995 (i.e. the firm's second year of operation). This objective indicator represented the results of the most recent fiscal year completed by all members of the sampling frame. The interview question provided for seven categories of response in order to minimize the problems of sensitivity and the entrepreneur's ability to recollect the information in detail; this procedure provided ordinal scale data. The wording of the question and the response categories utilized can be found in Appendix 4.6e, Phase 4 Entrepreneur Questionnaire, Demographics: Question # 12.

### **Manifest Indicator #17: Employee Growth**

The second measure also consisted of an objective unidimensional indicator: growth in number of employees. This indicator was readily obtainable and has been widely used in the literature, thus providing a strong basis for comparability. Growth in employees was calculated by subtracting the firm size in the first year of operations from the firm size in 1996; this procedure provided ratio scale data. The logarithmic function was employed to reflect firm size. Part-time and seasonal full-time jobs were assigned a weighting of 0.5 employees; seasonal part-time jobs were assigned a weighting of 0.25 employees. The precise wording of the interview questions are contained in Appendix 4.6e, Phase 4 Entrepreneur Questionnaire, Demographics: Question # 10 (a) and (b).

### **Manifest Indicator #18: Subjective Performance**

The third measure utilized consisted of a weighted index of subjective measures of performance (adapted from Gupta and Govindarajan, 1982). (Original questionnaire items are located in Appendix 4.6e, Phase 4 Entrepreneur Questionnaire, Form P4-E-P-3: Performance: Importance, and Form P4-E-P-4: Performance: Satisfaction.) Each entrepreneur was requested to rate the importance of five dimensions of performance (growth in sales, net profit, personal income, cash flow and employee satisfaction) using a five point Likert-type scale. The entrepreneur was then asked to rate the same five dimensions on a seven point Likert-type scale in terms of how satisfied s/he was with the firm's performance for the fiscal year ending in 1995. Using the data on dimensional importance as weights, a weighted average subjective performance index was obtained for each firm; this measure provided interval scale data.

### **Manifest Indicator #19: Vision Attainment**

The final measure of firm performance provided a measure of the extent to which the vision of the entrepreneur had been attained and was derived from the repertory grid data obtained from each entrepreneur. (There does not appear to be a precedent for this type of measure in the performance literature.) The calculation of this measure involved two steps. First, 12 difference scores were obtained for each entrepreneur by subtracting the 12 standardized construct ratings assigned to the fourth grid element (i.e. "my firm as it is now") from the standardized construct ratings assigned to element three (i.e. "my firm as I had imagined it would be in 10 years"). The absolute value of each difference score was utilized rather than the algebraic difference because it could not be assumed that either pole of any construct was more positive or negative than the other. As a second step, these absolute difference scores were then summated and reverse-scored. The final result was a summated

index of vision attainment based on interval scale data. Although the direction of difference could not be inferred from this index due to the use of absolute values, the reverse scoring process incorporated would assist in interpretation by assigning larger values to smaller distances (i.e. more positive or “better” results).

### Summary of Performance Indicators

The measures of performance and their attributes are summarized in the following table:

Table 4.7  
Summary Characteristics of Performance Measures Adopted

	<b>Measure # 1</b>	<b>Measure #2</b>	<b>Measure #3</b>	<b>Measure #4</b>
Indicator	Sales growth	Employee growth	Subjective index	Vision attainment
Theory	Goal & Constituent	Constituent	Goal	Goal & Constituent
Unidimensional versus Multidimensional	Unidimen.	Unidimen.	Multidimen.	Multidimen.
Objective versus Subjective	Objective	Objective	Subjective	Subjective
Scale	Ordinal	Ratio	Interval	Interval

As illustrated in the table, the measures adopted in the current study are consistent with the trends identified earlier in the review of performance measures and provide not only diversity, but also balance. It is argued that such an approach is consistent with the current circumstances of the research, where both theory and empirical knowledge appear to be in a formative stage.

### **4.7.3 Addressing Method Effects**

It must be noted that the source of data for all four measures of performance consists of self-reports of the entrepreneurs, and that a substantial portion of the measurement data for the independent variables was also obtained from the same source. Current research standards normally prescribe the use of different sources or methods for the independent versus dependent variables in order to minimize method effects (an issue of construct validity). Most methods used to obtain a measure affect scores on that measure; when measures reflecting the same method effects are analyzed together correlated errors are produced (Andrews, 1984). Correlated errors often appear in survey research because analysts examine multiple measures derived by the same method. In a seminal study using data obtained from five national studies and an organizational survey, Andrews (ibid) was able to demonstrate that a typical survey item can be expected to yield between 0-7 percent methods variance, 50-83 percent valid variance and 14-48 percent residual variance, with method effects accounting for most of the observed correlated error.

Given the foregoing, it would have been desirable in the current study to utilize different data sources for the dependent versus independent variables. Unfortunately this was largely not possible. In the case of the independent variables most measures, such as the vision grid and the composition of the entrepreneur's support system, by necessity could only be obtained from the entrepreneur him/herself. In the case of the dependent variable, performance, research on large firms often utilizes published data or performance measures obtained from other senior executives; in small firm research, it has been noted earlier that self-reports are standardly used because of the weaknesses of accounting-based measures and because the entrepreneurs themselves are usually the sole gatekeepers of the information. In the current study an effort was made to solicit the cooperation of Statistics Canada in gaining access to Revenue Canada income taxation files, but permission was denied because the parameters of the study required that the performance information be linked back to identifiable individual firms.



While it was not possible to neutralize method effects in an ideal fashion, the design of the study does incorporate features which serve to lessen the impact of method effects. The strategies adopted are in line with the recommendations of Cook and Campbell (1979) and Billings and Wroten (1984) concerning the minimizing of methods effects and are as follows:

- a) While most measures obtained from the entrepreneur were collected using a structured interview format (i.e. verbal question followed by verbal response), the questions comprising the subjective performance index were presented to the entrepreneur in written questionnaire format. The applicable pages were passed to the entrepreneur, who was requested to complete them him/herself after the instructions were explained. Although this does not provide for a total change of methods, it does provide for a significant change of both format and stimulus for the respondent. This approach to methodological variety is a form of within-methods, as opposed to between- or across-methods, triangulation (ibid).
- b) In the case of the performance construct, additional effort was made to ensure the wording of questions and response formats were substantially different between measures. For example, even in the case of the subjective performance index discussed above, the first page (importance) used a five point scale whereas the second page (satisfaction) utilized a seven point scale. The four performance measures differed considerably in terms of the number of questions asked, question wording, response type and number of categories. As an example, growth in sales was measured utilizing one question with seven categories of response, employee growth was measured utilizing two questions and a different response scale, and vision attainment was measured using grid data. In sum, an effort was made to maximize within-methods triangulation.

## 4.8 SUMMARY OF EPISTEMIC RELATIONSHIPS

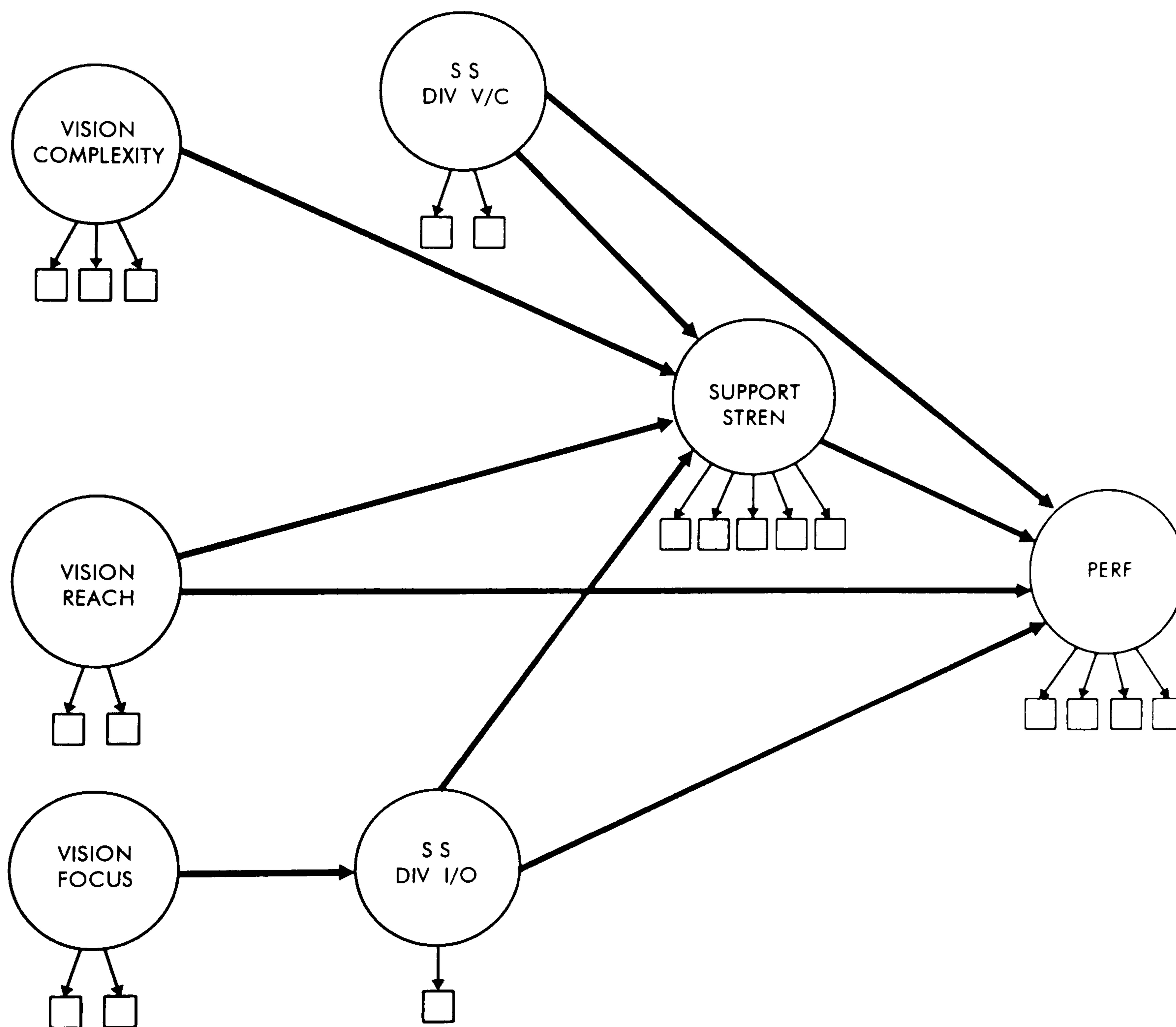
Sections 4.4 - 4.7 described the compilation of 19 manifest variables associated with the seven latent variables comprising the structural model. These associations are summarized in Table 4.8. Given the associations between the manifest indicators and their respective latent variables, it is now possible to summarize the correspondence rules or "auxiliary theory" (Blalock, Jr. and Blalock, 1968) which characterize the measurement model. This has been done in Figure 4.6, which displays both the structural and measurement models. By convention, latent variables in the diagram are represented by circles and manifest indicators are represented by squares. Arrows are used to indicate the relationships comprising the structural model, and also the relationships between latent variables and their empirical indicators (Sullivan and Feldman, 1979).

Table 4.8  
Summary of Manifest Indicators

<u>LATENT VARIABLE</u>	<u>MANIFEST INDICATOR</u>
<b>1</b> VISION STRUCTURE: COMPLEXITY	1. FIC Score 2. Intensity Score 3. $\chi^2$ Score
<b>2</b> VISION CONTENT: REACH	4. 5-Year Discrepancy 5. 10-Year Discrepancy
<b>3</b> VISION CONTENT: FOCUS	6. External Constructs Index 7. External Extremity Score Index
<b>4</b> SUPPORTER DIVERSITY: VALUE- VERSUS CONVENIENCE-BASED	8. Value/Convenience Number Index 9. Value/Convenience Score Index
<b>5</b> SUPPORTER DIVERSITY: INSIDERS VERSUS OUTSIDERS	10. Insider/Outsider Index
<b>6</b> SUPPORT STRENGTH	11. Supporter Count 12. Number of Different Relationship Types 13. Occupational Status Index 14. Average Resources per Supporter 15. Resource Scope

- 16. Sales Growth
- 17. Employee Growth
- 18. Subjective Performance
- 19. Vision Attainment

Figure 4.6  
Structural Model and Measurement Model



VISION COMPLEXITY	=	Vision Structure: Complexity
VISION REACH	=	Vision Content: Reach
VISION FOCUS	=	Vision Content: Focus — Internal/External Balance
SS DIV V/C	=	Support System Diversity: Value- versus Convenience-Based
SS DIV I/O	=	Support System Diversity: Insiders versus Outsiders
SUPPORT STREN	=	Support Strength
PERF	=	Performance

## **4.9 PHASE THREE: PILOT STUDY**

### **4.9.1 Purpose**

Phase three of the research process was a small-scale pilot study undertaken to minimize the risk of error prior to engaging in the final phase (Phase 4) of the research, which was expected to be relatively costly and labour-intensive. Specifically, the goals of phase three were:

- a) To increase the researcher's familiarity with the phenomena under investigation (Emory, 1976). In particular, information was desired concerning:
  - whether and to what extent entrepreneurs would be willing to disclose the nature of support provided by key supporters
  - the nature and scope of supporters and support categories likely to be encountered (there was considerable precedent in the literature here, but given the novelty of the method used to elicit supporters it was deemed prudent to minimize uncertainty)
- b) To investigate the effectiveness of the newly-developed grid-based measures of entrepreneurial vision (scores exhibiting minimal variance could be too insensitive to adequately differentiate between visions)
- c) To investigate the appropriateness of the intended sampling frame
- d) To gain additional facility and expertise in administering the repertory grid, particularly within the context of the research setting

### **4.9.2 Sample Description**

The sampling frame for Phase Three consisted of a list of all of the nominees for a major provincial entrepreneurship award during the five year period 1990 to 1994. The rationale for utilizing award nominees was to ensure that the sample would be sufficiently "entrepreneurial." Nominees for the annual award were solicited by the sponsoring organization using advertisements in local newspapers across the province and mail-out campaigns directed at both public sector agencies providing assistance to small business and financial institutions located within the province of Newfoundland and Labrador.

Access to the sponsoring organization's files was requested in the spring of 1995 and granted shortly thereafter. A review of the files for the five year period resulted in a list of names of 82 individual nominees representing 59 firms.<sup>9</sup> Of these, nine individuals representing seven firms were classified as problem cases and subsequently eliminated. Six of these entrepreneurs (representing five firms) were found to be untraceable, one had since moved out of the province, and one firm (with two partners) had subsequently closed.

The remaining list, however, still contained a number of duplicate entries due to some entrepreneurs having been nominated in more than one year and other nominees being nominated on more than one occasion in the context of different firms. It was therefore apparent that using either the individual or the firm as the sampling unit would be problematic if a random sample were desired. In order to deal with the problems arising from duplication, the sampling unit was defined as the entrepreneurial team (which could include as few as one individual) identified on the nominating form. After duplications were taken into account the final list comprised 43 sample elements which included 59 individuals and 54 firms. Of the 43 sample elements, 12 were entrepreneurial teams consisting of more than one individual.

A random sample of twelve sample elements was ultimately chosen for the Phase Three research process. Although this phase was only a pilot study (thus suggesting the potential for cost minimization by, say, restricting the sample to local firms), it was considered prudent to ensure a strong sampling procedure was followed in order to accomplish the study objectives. First, strong sampling was expected to minimize the risk of error (attributable to sample bias) in drawing conclusions concerning the number of supporters likely to be encountered; poor estimates here could conceal ceiling effects which

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<sup>9</sup> Although the nominating form sometimes included the names of more than one firm associated with the entrepreneur(s) being nominated, it cannot be assumed that the number of firms cited on those forms is a complete or accurate representation of the number of firms owned or started by the nominees. The figures described in this report refer only to the number of firms actually cited on the nominating forms.

could have seriously jeopardized the validity of the subsequent and final phase of the research. Second, it was apparent that the validity of any conclusions concerning the appropriateness of the intended sampling frame would only be as strong as the sample upon which those conclusions were based. Due to cost constraints, the sampling frame had to be restricted to firms located on the island portion of the province.

#### **4.9.3 Interview Procedure**

Most differences between the interview procedures utilized in Phase Three and Phase Four of the research tended to concern structure and consistency (both of which were increased in Phase 4). In order to conserve space and minimize redundancy, the reader is referred to Phase Four for a description of the interview protocol. The primary difference, as it concerns Phase Three, is that in the case of multiple ownership, all of the founding owners were interviewed. In these instances, the repertory grids were always administered separately, whereas the other portions of the interview were sometimes carried out individually and at other times as a group.

Prior to undertaking Phase Three, practice grid sessions were held with several acquaintances of the researcher. Although these practice grids did not use the entrepreneurial vision-related elements and constructs derived in earlier phases (instead, new elements and constructs were elicited as part of the practice session) and were not business-related, they did provide the opportunity to gain a base of experience in administering the grid.

Potential interviewees for Phase Three were first contacted by telephone during early May 1995 in order to inform them of the purpose of the study and request their (and where applicable, their partners') participation in a personal interview. The interviews subsequently were completed over a three week period during the latter part of May and early June 1995.

With one exception (at the request of the participant), all interviews were carried out in the entrepreneur's workplace.

## **4.10 PHASE FOUR**

### **4.10.1 Purpose**

Phase Four represented the final stage of the data collection process. Whereas Phases One and Two were used to develop the underlying methodology (specifically, to derive the grid elements and constructs which subsequently would be used to measure vision) and Phase Three was undertaken as a preliminary pilot study, Phase Four comprised the fieldwork efforts to collect the data central to the overall objectives of the research study. These data were used to accomplish the following: a) assess the reliability and validity of the empirical indicators which had been developed to measure the theoretical constructs comprising the research model); b) serve as an empirical test of the research model and the nine hypotheses it embodied; and c) assess the impact of the two control variables, location and gender.

### **4.10.2 Sampling Frame**

#### **Firm Age**

The sampling frame for Phase Four was compiled with the assistance of the Registry of Deeds and Companies, Government of Newfoundland and Labrador. Essentially, it consisted of new firms incorporated in the province during 1993. There were three reasons for choosing this time period. First, selecting firms which had started in the same time period helped to ensure that the firms were exposed to the same macroeconomic forces during their

development, thus minimizing the threat of the rival hypothesis, history (Campbell and Stanley, 1963), to the internal validity of the study.

Second, the research design was intended to maximize the potential variance of the dependent variable, firm performance. This entailed ensuring that a sufficient time period beyond start-up had elapsed such that firms had had the opportunity to move beyond the survival stage into the growth stage. Third, and standing in opposition to the second consideration, was the desire to reduce the time between start-up and the interviews in order to minimize the problem of the interviewee's ability to recall events.

Ultimately it was decided to interview firms three years after start-up. This represented a compromise between the opposing factors which guided the decision. Because the interviews were scheduled to occur in 1996, the desired three years of potential operating history were obtained by restricting the sample to firms registered in 1993. Had the intention of the study been to examine all support received by an entrepreneur, this time period would likely have been too long to have confidence in the respondent's ability to recall events. On the other hand, since the research was instead focusing only on key supporters, it was felt that this information would be still quite salient and entrepreneurs would be able to recall it with relative ease.

### **Form of Legal Organization**

Since the research model was intended to apply to independent business start-ups, it would have been desirable to include other legal forms of business organization in addition to incorporated firms in the sampling frame (Birley, 1984). Unfortunately, however, proprietorships are not required to formally register with the province, making it next-to-impossible to assemble an accurate or reliable list of all start-ups. Kalleberg et al. (1990) argue that a researcher's choice of sampling frame should depend on multiple factors. Since



replicability was an overriding concern of the current research, it was decided to restrict the scope of the study to incorporated firms. Firms which have incorporated will have, by default, demonstrated at least three of Katz and Gartner's (1988) four properties of emerging organizations: intentionality, resources and boundary. Although the fourth property, exchange, also may have been accomplished prior to the research, this was not a requirement for inclusion in the study.

### **Other Restrictions**

The original list of incorporations provided by the Registry of Companies included 1547 firms. Several additional refinements and restrictions, however, were employed subsequently to ensure the appropriateness of the sample. Forty-six firms were eliminated because they represented either existing out-of-province firms seeking to register in Newfoundland or short-term joint ventures in the construction industry created for the purpose of a specific construction project. Seventy-three firms were eliminated because they were holding companies. Seven firms were known to be existing prior to 1993 and hence were eliminated. Franchise units and not-for-profit organizations were also restricted from the sampling frame; this resulted in the elimination of two additional firms. One firm listing was deleted because it was a double-entry resulting from what appeared to be an administrative error. Finally, due to budget constraints, the sampling frame had to be restricted to the island portion of the province. As a result, 53 Labrador firms were dropped from the master list of firms.

After the foregoing adjustments had been made, the sampling frame consisted of 1365 firms. To summarize, it was desired that sampled firms met the following criteria:

- a) incorporated in the province in 1993
- b) new start-up (i.e. not operating prior to 1993)
- c) independently owned and operated
- d) operating company (i.e. not a holding company)

- e) profit-oriented (i.e. private sector)
- f) located on the island of Newfoundland, and
- g) still in existence (see below)

Once again, in the interest of replicability, it was decided to further restrict the sample to firms which were still in existence and still operating. The difficulty associated with locating and contacting firms which had ceased operations was one that would have, in all likelihood, easily resulted in a biased sample. Although the omission of non-surviving firms can be considered a significant shortcoming of the research, it also served to ensure the research was replicable. Moreover, it is argued here that while such an omission may invalidate the drawing of meaningful conclusions concerning survival versus non-survival, it does not preclude meaningful inferences concerning the subsequent performance of firms which have survived.

It was not possible to ensure that all firms on the remaining list met all of the above criteria; consequently, it was necessary adopt additional measures during the initial telephone contact with firms selected for the sample to ensure firms qualified. This process is described in Section 4.10.4.

### **4.10.3 Sampling Procedure**

Each of the firms remaining on the list was designated as a sample element and assigned a sequential number. Firms were then randomly selected for the final sample of 50 firms using a list of random numbers generated by Microsoft Excel v. 5.0 software. Given that one of the objectives of the research was to investigate potential differences between rural and urban firms, a stratified sample design was employed, with 25 firms drawn from St. John's metropolitan area (representing urban firms) and 25 firms drawn from the remainder of the island of Newfoundland (representing rural firms).<sup>10</sup>

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<sup>10</sup> For the purposes of the study, St. John's Metropolitan Area was defined as including the communities of St. John's, Mount Pearl and all communities located on the Northeast peninsula of

## Urban Versus Rural Firms

Employing a stratified sample comprised of an equal number of urban versus rural firms facilitated the statistical comparison of the two groups without unduly compromising the representativeness of the overall sample, since approximately one half of the island's population of both individuals and business establishments are located in St. John's and the Avalon Peninsula.<sup>11</sup> It can be noted that while the vast portion of the island outside the St. John's metropolitan area still contained some sizeable communities such as Corner Brook, Gander and Grand-Falls-Windsor, there were no clear guidelines in the literature as to whether these firms should still be classified as rural.

It was ultimately decided to designate all firms outside the St. John's metropolitan area as rural, for several reasons. First, the largest communities in this region are still moderately small. None exceed a population of 25,000 and even the largest are still designated as towns, rather than cities. Second, Anderson (1995) contends that rurality must be understood as both a physical and social construction, encompassing sociality, culture and identity. Within the Newfoundland context, the city of St. John's tends to be viewed by outsiders as privileged and detached from the rest of the province due to its sheer size and the unique nature of its economic base.

Until the recent collapse of the fishery, nearly all Newfoundland communities owed their existence to primary resource-based industries, particularly fishing, logging and mining. In contrast, the economy of St. John's, as the capital city of the province, tends to centre around the public sector and the support service infrastructure (including financial institutions) it attracts. Thus, although some communities outside the metropolitan area of

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the Avalon Peninsula, extending southwards along Conception Bay to the community of Avondale and along the southern shore to Ferryland. All of these communities are within commuting distance of St. John's and are within a 45 minute drive.

<sup>11</sup> There are 8088 business establishments on the Avalon Peninsula, representing 47.8% of the total of 16,914 on the island of Newfoundland (compiled from data by Statistics Canada, 1996).

St. John's might display some requisite "urban" properties, the historical and cultural context suggested that these areas still shared (and took pride in) a strong sense of separation and cultural distance from St. John's that outweighed by far any similarities amongst them.

The third reason for treating all firms outside the St. John's area as rural stemmed from the purpose of the research. Since the focus of the study was support provided to entrepreneurs, an important consideration was the potential for differing levels of formal support infrastructure in rural versus urban areas. Although branch or regional offices often existed to serve the needs of rural clients, it appeared that the St. John's area, due to its concentration of decision-making power and convenient access to resources, was endowed with unique advantages which differentiated it from other areas of the province.

#### **4.10.4 Telephone Procedure & Protocol**

Firms selected for inclusion in the sample were initially contacted by telephone to explain the purpose of the study and request their participation. In instances where there was either no answer or a message was left, three attempts were made to reach the entrepreneur. The researcher began by identifying himself and briefly explaining the purpose of the call. Then several screening questions followed, to ensure that the firm qualified for inclusion in the sample. They were:

- 1) Is the firm still active?
- 2)
  - a) Had the firm been operating before you incorporated it in 1993?
  - b) Did you start the business yourself or did you purchase the business?
  - c) Is it a franchise business?
- 3) Would you classify your business as an operating company, or instead, as an investment or holding company?

If the answers to the above questions disqualified the firm from the sample, the respondent was thanked for his/her time and the call was terminated. If the firm still qualified, the

respondent was provided with some additional background information concerning the research.<sup>12</sup>

In phase four, it was decided to interview only the lead entrepreneur, since it was discovered during phase three of the research that, even in the case of joint ownership, one person had been primarily responsible for providing the entrepreneurial drive within the organization. Consequently, the respondent also was asked to confirm that s/he was the person responsible for making the strategic decisions for the firm. The telephone conversation concluded by arranging an appointment for an interview, which was stated to require at least one hour and forty-five minutes.

#### **4.10.5 Interview Procedure**

The majority of the interviews were completed during the summer of 1996. All of the rural interviews and all but two of the St. John's area interviews were held in the entrepreneurs' workplaces. The two exceptions were held in the researcher's office at the request of the participants. Due to several cancellations on short notice and one instance where an entrepreneur failed to show up, an additional trip was made in October 1996 to complete the last few rural interviews.

In general, a semi-structured interview format was used, although the degree of structure tended to vary somewhat depending the stage of the interview. Each session began with the researcher providing some background information on the history and purpose of the research, and an overview of the interview process. Each participant was also assured of the anonymity of their responses. The interview itself was divided into four sections. This

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<sup>12</sup> Participants were told that the purpose of the study was to investigate the support that entrepreneurs received when starting their businesses and the types of relationships they had with their supporters. Additional background was also provided concerning earlier phases of the research. The term "vision" was not mentioned.

means of organizing the interview proved beneficial because it provided for distinct changes of pace, and also served to provide recognizable milestones which the entrepreneurs found helpful in gauging the progress of the interview. At the beginning of each section, the purpose and nature of the section was explained to the participant in order to stimulate interest and enhance his/her comfort with the process.

In the first stage of the interview the entrepreneur was asked to provide some background on why s/he had started the business, and whether s/he had had a mental image of the firm in mind when the firm was initiated. This section was quite unstructured in format, fairly brief in duration (lasting only 10 to 15 minutes), and generally served as an "icebreaker," in that it provided an opportunity for the entrepreneur to speak freely and informally without having to respond to specific, short-answer questions. The second section of the interview consisted of the administration of the repertory grid designed to measure the entrepreneur's vision of the firm. This section was highly structured and fairly intensive, requiring 25-45 minutes to complete. The third section consisted of the collection of the data concerning supporters and support provided. This section tended to be moderately structured (and considerably more structured than in Phase Three); although the questions and response categories had been pre-determined, there was also considerable opportunity for dialogue, and for elaboration and narrative accounts by the entrepreneur. The duration of the third section tended to vary considerably (roughly, from 15 to 60 minutes), depending on the number of supporters reported. The fourth and final section of the interview was quite structured again and required only approximately 10 minutes to complete. Performance and demographic data were collected during this portion of the interview.

Unlike phase three, no portions of the phase four interviews were tape-recorded. This decision was attributable to two reasons. First, it was found during the phase three pilot test that, even in the most successful and productive interviews, the respondent's level of comfort and candor often increased noticeably once the tape recorder was turned off

following the formal conclusion of the interview. Secondly, as a result of the phase three pilot test, there was considerably more confidence in the data collection instrument.

#### **4.10.6 Interview Protocol**

##### **Section One: Background**

This section was used as an “icebreaker” and to provide some background context concerning the start-up of the firm. First, the entrepreneur was asked to explain where the initial idea for the firm had originated and how the firm had actually “come about.” Following this, the participant was asked whether s/he had had a “mental image” of the firm in mind when s/he had decided to start up, and, if so, to describe it. The term, “vision,” was not mentioned during the questioning process nor during any part of the entire interview because it was felt that, due to media coverage, the term was inordinately loaded with positive connotations. During this portion of the interview considerable dialogue ensued, in an effort to gain rapport with the interviewee. Notes were taken during the dialogue, in plain view of the participant.

##### **Section Two: Administration of Repertory “Vision” Grid**

In this section the repertory grid designed to capture the entrepreneur’s vision of the firm was administered. The entrepreneur was told that the purpose of the exercise was to “provide a picture of how s/he viewed his/her firm — when it first began, as it is now, and how s/he pictures it in the future;” the term “vision” was not mentioned. It was further explained that the picture assembled would be useful because it would not be industry-specific, and because it was quantifiable; these qualities would facilitate later comparisons with the “pictures” obtained from other firms. The entrepreneur was shown how the

documents would be used and two hypothetical examples were provided to explain how the rating system would work. During the orientation session it was also emphasized that there were no right or wrong answers.

The list of elements used to elicit the grid data may be found in Appendix 4.6a; this list was held by the researcher during the session. Each construct pair was depicted on a single sheet of paper, along with a rating scale (see Appendix 4.6b). The first construct sheet was placed on the table in front of the entrepreneur and the researcher explained how the construct poles related to the rating scale (for example, on sheet P4-E-C-1, Appendix 4.6b, a low number would suggest a firm that had a clear-cut market niche whereas a high number would indicate a firm that had a very broad customer base). The researcher then read aloud the first element appearing on the element list and asked the respondent what rating s/he would assign to that element. The respondent's answer was recorded (see Appendix 4.6c) and the next element was read aloud. When all eight elements had been scored, the researcher took back the construct sheet and passed the respondent the next construct sheet. This process was repeated until all 12 constructs had been scored.

Missing data values were assigned a score of "4" which represented a neutral score. When the session had been completed the purpose of the grid was reiterated.

### **Section Three: Elicitation of Support System Data**

It was found during Phase Three of the research that information concerning supporters was often considered quite sensitive by entrepreneurs. By the time supporter data was required in the Phase Four interviews, nearly one hour had usually elapsed since the interview had started. This provided considerable time to establish a positive rapport between the interviewer and interviewee; during this time the interviewer had strived to project interest, professionalism, a non-judgemental attitude, and respect for confidentiality.



After providing a reasonably in-depth overview to the entrepreneur of the steps involved in the third section of the interview, the next step was to elicit the entrepreneur's network of key supporters. Weaknesses associated with network data can be avoided or minimized by ensuring that meaning is shared between the respondent and investigator and by asking questions about which respondents are knowledgeable (Marsden, 1990). Accordingly, considerable effort was made in the current study to adhere to these guidelines. In general, the first guideline was enforced through the liberal provision of illustrative examples and by having the researcher present to answer questions and provide clarification. Compliance with the second guideline was achieved by focusing on key supporters and support actually received.

Three approaches to measuring social networks dominate the social support literature. These approaches correspond with commonly used bases for operationally defining what constitutes a relationship and can be summarized as in Table 4.9 below (Van Groenou, Van Sonderen and Ormel, 1990; Van Sonderen, et al., 1990):

Table 4.9  
Approaches to Measuring Support Networks

<b>Approach</b>	<b>Operational Definition of a Relationship</b>
1. Exchange Approach	exchange transactions between subjects
2. Affective Approach	importance or affective content
3. Role-relation Approach	normative or formal aspect

Because different methods of delineating networks result in different network configurations the selection of a network measurement approach should be guided by the objectives of the study (Van Groenou, Van Sonderen and Ormel, 1990; Van Sonderen, et al., 1990). In the current study the focus was on key supporters and the support they provided to the entrepreneur. Since key supporters were determined by the entrepreneur's subjective rating of importance (the rationale for this was discussed in an earlier section) and the support they

provided represented exchange transactions, a combination of the affective and exchange approach was utilized.

Visual aids are sometimes used in the interview process to help make clear what is being asked about (Selltiz et al., 1967). The current study incorporated a visual aid adapted from a version used by Van Sonderen et al. (1990) to delineate affective network relations; a copy of the instrument may be viewed in Appendix 4.6d.<sup>13</sup> The diagram depicted on the instrument consisted of an inner circle labelled "Key Supporters" and an outer circle labelled "All People Who Provided Support." Prior research has shown that the test-retest reliability associated with inner circle results is 82%, but only 54% for outer circle results (Van Groenou, Van Sonderen and Ormel, 1990).

This latter finding warrants at least two comments. First, due to differences between the instrument used in the Van Groenou study and that used in the current study, these results cannot be generalized to apply to the current instrument without some caution. It can be noted, however, that the current instrument utilizes labelling that is more concrete and arguably superior (the labels used in the Van Groenou study were "Circle I" and "Circle II") and also incorporates concrete exchanges associated with the start-up of a firm — a unique and often momentous event. For these reasons it could be expected that reliabilities associated with the current instrument would be at least as high as those found in the original study. Second, these results concerning reliabilities tend to support the earlier contention that key supporters should be more salient to the entrepreneur and less prone to problems of memory recall.

Delineation of key supporters began by presenting the interviewee with the visual aid and explaining the meaning of the circles depicted in the diagram. The outer circle was explained first and was described as referring to all those people who had helped the entrepreneur in some way, no matter how trivial, to achieve the enterprise s/he had desired.

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<sup>13</sup> This instrument had not been utilized in Phase Three of the study.

It was explained that support could come in a variety of forms (not just from government), and could be tangible (as in the case of a financial loan) or intangible (as in the case of encouragement or advice), and trivial (as in the case of ordering cheques for a commercial bank account) or non-trivial (as in the case of landing a large customer). Support could also come from someone who was merely acting in the course of their duties (as in the case of a bank teller opening a commercial account) or someone who had gone out of their way to assist (as in the case of a neighbour who showed up with a paint brush to help renovate the premises), and could represent services that were bought and paid for (as in the case of a lawyer who draws up articles of incorporation or registers the firm) or provided at no cost (as in the case of a family member who works in the business without a wage) or at less than market value (as in the case of a friend who prepares the firm's tax return for a fraction of the true cost). As is probably evident from the foregoing description, an illustrative example was provided in each instance. To summarize, the various categories of support described were:

- tangible versus intangible
- trivial versus non-trivial
- acting in course of duty versus going out of their way to help
- purchased versus free or provided at less than market value

After reminding the interviewee that all the people who had provided any support whatsoever would be considered members of the outer circle, the interviewee was asked to now consider the inner circle, on which the remainder of the interview would focus. The inner circle was described as referring to only those people whom the entrepreneur considered to be key in helping him/her to realize his/her goals along the way once s/he had decided to start the firm. The interviewee was told that only s/he could decide who belonged in the inner circle and that the interviewer had no preconceptions as to how many, if any, should be included as a member. The interviewee was asked to begin by listing (using first-name or relationship in order to facilitate future references in the discussion) all those who should be considered key supporters. It was explained that once all the key supporters had

been identified, the interviewer would next proceed to ask specific questions concerning each supporter and the support provided. When the interviewee had finished identifying key supporters, the interviewer read the list aloud and asked if there was anyone else who should be considered.

The next step of the interview was to address each supporter individually.<sup>14</sup> Sheets four and five of the Entrepreneur Questionnaire (Appendix 4.6e) were used to guide the questioning and to record the data. Beginning with the first supporter whom had been identified, the following information was elicited: sex, location, occupation/position, organization, insider/outsider, years known, relation (kin), how known, and types of support provided. The categories used to capture the types of support provided have already been explicated in Section 4.6.3: Support Strength under the heading "Manifest Indicator #14: Average Resources Per Supporter. It should be noted that the original categories utilized on the questionnaire had been determined from a prior review of the literature and did not include the category "extraordinary labour." This category was subsequently added upon reviewing the results, based on the relatively frequent occurrence of mention.

Considerable time was spent collecting the data concerning types of support received from the supporter. The questionnaire categories were used as prompts and an example was provided by the interviewer for each category in order to assist with clarification and interpretation. It was also emphasized to the interviewee that although the categories served as a convenient checklist, they did not necessarily include all possible forms of support; the interviewee was encouraged to describe any other forms of support that did not seem to fit the categories. The interviewee was also asked to describe an example of each form of support which s/he confirmed had been received; this served to stimulate interest as well as providing a useful check that the category had been correctly interpreted and that an exchange transaction had indeed occurred. Consequently, this portion of the interview was

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<sup>14</sup> Although this portion of the interview covered much the same ground during Phase Three of the research, the Phase Three questioning tended to be less structured and more explorative.

often embellished by descriptive narratives from the entrepreneur. When all the categories of potential support had been covered the interviewee was asked if there had been any other forms of support received from this supporter that had not yet been identified.

When all of the foregoing question categories had been completed for the first supporter, the same sequence of questioning was pursued for the second supporter, and so on until all supporters had been covered. The final step of the third stage of the interview process was to determine the nature of the relationship held with each supporter: whether the relationship was value-based or convenience based, whether the tie was voluntaristic, and whether the supporter was an intimate network member. To this end the questions listed on the third sheet (labelled P4-E-V/C) of the Entrepreneur Questionnaire (Appendix 4.6e) were asked, and the responses recorded for each supporter.

#### **Section Four: Performance and Demographic Data**

Because the previous two sections of the interview had been quite intensive, it was emphasized to the interviewee that this final section was quite brief and straightforward. Documents associated with this section consist of the last four pages of the Entrepreneur Questionnaire located in Appendix 4.6e. After explaining the nature of the two performance data sheets and, in particular, the rating scales, the questionnaire booklet was passed back to the interviewee and s/he was asked to circle the appropriate responses. As noted in an earlier section concerning methodology, this procedure not only enhanced question interpretation but also served as a means of reducing method effects by providing an alternate stimulus.

When the respondent had completed the two sheets and returned the booklet to the interviewer, the interviewer proceeded to complete the final two pages concerning demographics. Questions #3 (age) and #4 (education) were considered sensitive and also

contained a substantial number of response categories (eight and six) respectively); for these questions the questionnaire booklet was passed back to the entrepreneur to mark the appropriate responses in order to facilitate interpretation by the entrepreneur and to minimize discomfort. Questions #10 (number of employees), #11 (sales) and #12 (sales growth) were also slightly complex due to the number and nature of the response categories; for these questions the questionnaire booklet was once again passed to the entrepreneur for physical completion. Upon completion of the section the interviewee was warmly thanked for his/her participation in the study and promised a summary of the results of the research.

## **CHAPTER 5**

### **FINDINGS AND ANALYSIS**

#### **Chapter Outline**

#### **5.1 Phase One Results**

**5.1.1** Survey Pre-test Results

**5.1.2** Survey Results

#### **5.2 Phase Two Results**

#### **5.3 Phase Three Results**

#### **5.4 Phase Four Results**

**5.4.1** Sample Composition

**5.4.2** A Preliminary Examination of the Data

**5.4.3** Measurement Model

**5.4.4** Structural Model

**5.4.5** Model Fit

**5.4.6** Control Variables

#### **5.1 PHASE ONE RESULTS**

##### **5.1.1 Survey Pre-test Results**

Initial feedback from the business expert indicated that the strategy descriptions were likely too complex for Newfoundland small businesses and should be simplified. It was also emphasized that pre-testing the questionnaire using actual business owners would be a necessity. It should be noted that the business expert utilized for the pre-test process had extensive experience in both commercial and academic research and was an entrepreneur himself. As a result of this initial consultation, the strategy descriptions were both simplified and shortened to one paragraph in length.

Responses were received from 9 of the 10 participants who had received a copy of the questionnaire package. All were located in St. John's, Newfoundland. Table 5.1 provides a breakdown of the sample composition based on the responses to Section II of the questionnaire dealing with individual and firm demographics. It can be seen from the

distributions contained in the table that although the sample was small it was nevertheless quite diverse, with representation occurring in nearly every potential category (e.g. five categories under both age and education were represented). Firm size ranged from 2 - 50 full-time employees and there was nearly an equal mix of male and female entrepreneurs.

Table 5.1  
Pre-Test Sample Composition

Topic	Category	Frequency (n=9)
Owner		
	Yes	7
	No	2
Senior Manager		
	Yes	9
	No	
Gender		
	Male	5
	Female	4
Age Group		
	Under 25	
	25-29 years	2
	30-34 years	1
	35-39 years	
	40-44 years	1
	45-49 years	3
	50 years or greater	2
Education		
	Did not complete high school	
	Completed high school	2
	Completed vocational/trade school	2
	University undergraduate degree	2
	University graduate degree	2
	Other	1
Industry		
	Retail	2
	Wholesale	1
	Manufacturing	1
	Primary resource-based	
	Construction	
	Service	5
# of Employees		Mean Score
	Full-time	13.6
	Part-time	2.4
	Seasonal full-time	0
	Seasonal part-time	0.1



Three versions of the survey were presented over the course of the pre-testing process. The initial version of the survey was presented to the first three participants, the second version to the next four participants and the final version to the last three participants. Interview durations for the "debriefing" process for the initial version of the questionnaire ranged from 80-135 minutes. The initial version of the questionnaire had asked respondents to identify three successful and three unsuccessful firms matching each strategy description. Feedback from this stage indicated that although entrepreneurs found it relatively easy to identify firms "making mistakes," all three found it difficult to define or identify unsuccessful firms. Two of the three entrepreneurs felt strongly that the "reference" firms they identified (as elements) for each strategy should be restricted to Newfoundland firms. Feedback also suggested reducing the number of firms to be identified under each strategy from three to two. In response to this advice, the following changes were made to the questionnaire:

- elimination of the unsuccessful firms category
- restricting acceptable elements to Newfoundland firms
- reducing the number of firms to identify for each strategy from three to two

Feedback concerning the cover letter and the questionnaire instructions tended to be positive, but some editing of the instructions was subsequently undertaken in an effort to shorten the section and improve clarity.

The next series of interviews was based on the second version of the questionnaire, which incorporated the changes listed above. This version was well received overall. The few suggestions offered tended to concern the paragraph descriptions; it was suggested that these would benefit from highlighting key words or to include descriptive titles. Accordingly, it was decided to revise the questionnaire to include descriptive headings with the strategy descriptions. Participants indicated that they often were identifying firms outside their own industry (this was considered positive). Individuals sometimes reported more difficulty identifying firms for one particular strategy, but there was no consistency across participants as to which strategy tended to be more difficult.

The final series of interviews utilized the third and final version of the questionnaire. Feedback here indicated that the questionnaire took 10 - 30 minutes to complete and that most entrepreneurs were identifying firms outside their own industry. No specific suggestions for improvement were received. A portion of each interview was spent exploring which categories were perceived as more difficult, but again no pattern could be discerned. One participant reported that most of the surveys she had completed were quick and easy whereas she had found this one quite difficult, but over the course of the pre-testing most respondents reported that the questionnaire was interesting and not unduly difficult. Since the final stage of pre-testing revealed no clear directions for further improvement, it was decided to adopt the third version of the questionnaire for subsequent use in Phase Four of the research.

### **5.1.2 Survey Results**

Of the 150 questionnaires mailed out, nine were returned by the postal service due to an incorrect or expired address and one phone call was received stating that one firm was no longer in operation; after taking these into account the potential existed for 140 completed surveys.<sup>1</sup> In the final tally, 48 responses were received, of which 45 were useable, resulting in an effective response rate of 32.1 percent. Although this cannot be considered outstanding, it is certainly in line with the response rates reported in prior research on small business, and, given the unique nature of the survey, can be considered quite satisfactory.

Table 5.2 provides a summary of the demographic characteristics of the sample. No formal test was undertaken for non-response bias because the sampling frame itself

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<sup>1</sup> It is worth noting that although the second reminder mailout included a full copy of the questionnaire (thus increasing the cost substantially), it appeared to generate few additional responses.

was not an accurate representation of the population and because this phase did not involve the estimation of population parameters using statistical procedures. It is nevertheless informative to compare the sample obtained with the broader population of Newfoundland and Atlantic Canada firms. According to a recent report by the Atlantic Canada Opportunity Agency (ACOA), self-employed women account for 22 percent of all self-employed persons in Newfoundland (ACOA, 1992). It can be seen from Table 5.2 that only 15.6 percent of the survey sample was comprised of women, suggesting that women may be under-represented in the study sample. It should be noted, however, that Statistics Canada includes all women reporting self-employment income, whether on a full- or part-time basis, as self-employed (*ibid.*); it is likely, then, that the proportion of women contained in the survey sample may not be as under-represented as it first appears if one is interested in the proportion of women employed on a full-time basis.

The under-representation of women may also be partially explained by the nature of the sampling frame, which utilized several business directories from the manufacturing and offshore industries — industries which are still predominately male. The same phenomenon appears to have skewed the industry distribution somewhat, with the manufacturing sector being over-represented, and retail and construction under-represented. In Atlantic Canada, these industries account for 20, 5 and 14 percent of small firms respectively (ACOA, 1992).<sup>2</sup>

Since the survey asked respondents to identify two well-known Newfoundland firms for each of the four strategy descriptions, the potential existed for  $2 \times 4 \times 45 = 360$  firm nominations. As is evident from the summary of responses depicted in Table 5.3, a total of 310 nominations were received. Some strategy categories received fewer nominations than others. It appears that respondents found it easier to identify firms matching the Defender and Prospector strategies, with these categories obtaining 84 and 87 nominations respectively, representing 93.3 and 96.7 percent of the 90 ( $= 2 \times 45$ ) potential responses

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<sup>2</sup> This information compiled from data contained in Table 2.10, p. 25 in ACOA, 1992.

obtainable in any particular category. In contrast, the Analyzer and Reactor categories received only 72 and 67 nominations respectively, representing 80.0 and 74.4 percent of the total available.

Table 5.2  
Phase 1 Sample Composition

Topic	Category	Frequency (n=45)*	Percent **
Owner			
	Yes	30	66.7
	No	15	33.3
Senior Manager			
	Yes	43	95.6
	No	2	4.4
Gender			
	Male	38	84.4
	Female	7	15.6
Age Group			
	Under 25	0	0
	25-29 years	2	4.4
	30-34 years	7	15.6
	35-39 years	6	13.3
	40-44 years	11	24.4
	45-49 years	14	31.1
	50 years or greater	5	11.1
Education			
	Did not complete high school	2	4.5
	Completed high school	11	25.0
	Completed vocational/trade school	7	15.9
	University undergraduate degree	15	34.1
	University graduate degree	6	13.6
	Other	3	6.8
Industry			
	Retail	6	14.0
	Wholesale	2	4.7
	Manufacturing	10	23.3
	Primary resource-based	4	9.3
	Construction	2	4.7
	Service	19	44.2
# of Employees		Mean Score	Range
	Full-time	35.5	0-300
	Part-time	8.8	0-150
	Seasonal full-time	42.6	0-1200
	Seasonal part-time	21.8	0-600

\* Totals may not equal 45 due to missing data

\*\* Totals may not equal 100 due to rounding error

Table 5.3  
Nominations by Strategy Type

<u>Strategy</u>	<u>No. of Nominations</u>	<u>No. of Distinct Firms</u>
Defender	84	61
Prospector	87	60
Analyzer	72	57
Reactor	<u>67</u>	<u>53</u>
Total	310	231*

\* Although the number of different firms has been considered within categories, this was not done across categories. Therefore the "total" number of distinct firms is misleading when considered across categories.

Table 5.3 also shows the number of unique firm names identified within each strategy. As is evident, some firm names appear more than once. This was considered desirable, since it was intended that firms receiving numerous mentions would be best-suited for use as grid elements in subsequent stages of the research. Table 5.4 provides a more in-depth analysis of the instances of firms receiving multiple citations (a multiple citation represents an instance where a particular firm has been named by more than one respondent). It can be seen that the Defender strategy received the highest proportion of multiple citations, with 37 instances (37=84-47). This represents 44 percent of the total nominations received in that category. The Prospector, Analyzer and Reactor strategies recorded 37, 26 and 22 instances of multiple citations respectively, representing 42.5, 36.1 and 33.3 percent of their respective total nominations.

It can also be seen from Table 5.4 that the Prospector category exhibited the greatest consensus across respondents concerning which firms were representative. In one instance the same firm was named by nine different respondents and in another instance one particular firm was named by eight different respondents. In contrast, the most frequently cited firm in the Reactor category was named by three different respondents.

Table 5.4  
Single and Multiple Citations by Strategy Type

Strategy	Frequency	# of citations per firm	Total
Defender	47	1	47
	8	2	16
	4	3	12
	1	4	4
	1	5	5
Total	61		84
Prospector	50	1	50
	5	2	10
	2	3	6
	1	4	4
	1	8	8
	1	9	9
Total	60		87
Analyzer	46	1	46
	8	2	16
	2	3	6
	1	4	4
	0	5	0
Total	57		72
Reactor	45	1	45
	5	2	10
	4	3	12
Total	53		67

What is not evident from the analysis thus far is that there were also instances of disagreement as to which strategy a firm represented. For example, one firm was named by two respondents as representing the Analyzer strategy and by another two respondents as representing the Reactor strategy. The presence of such complications suggested that the use of frequency as the sole criteria for selecting which firms should be used as grid elements could be ill-advised. In response, three criteria were developed to guide the decision process for selecting which firm names to use as elements:

1. frequency of mention within a strategy category
2. degree of consensus (across categories) as to which strategy the firm represented (i.e. a relative lack of disagreement)
3. degree of firm "visibility" or presence across the province (as evidenced by physical establishments, product distribution, or a long history of activity)

Two elements from each strategy category were needed to carry out the next stage (Phase Two) of the research. The rationale used to select these elements will now be described. The information needed to assess the first two criteria identified above was obtained from the analysis depicted in Table 5.5, which provides a firm-by-firm breakdown of citations within and across categories. For the criterion concerning the degree of consensus concerning strategy type it was decided to set the threshold of acceptability as requiring a firm to achieve at least twice as many citations in the selected strategy as it did in its next most frequently-cited category. For the third criterion concerning visibility it was necessary to rely on the personal knowledge of the researcher. Henceforth individual firms will be designated by firm number (as depicted in Table 5.5) out of consideration for the individual firms cited. It is important to recognize that although actual firm names were used as elements in subsequent stages of the research, the firm names were never publicly associated with strategic types.

Within the Defender category Firm#24 and Firm#19 received five and four citations respectively. Although both received citations in another category in at least one instance, both satisfied the criterion for consensus established earlier. In addition, both were manufacturing firms which had been in existence for several decades and whose products were widely available across the province. Consequently, these two firms were selected to use as grid elements. Henceforth Firm#24 will be designated Firm A (representing best choice) and Firm#19 as Firm B (representing second-best choice).

In the Prospector category the most frequently cited firms were Firm#11 and Firm#29, receiving nine and eight citations, respectively. Firm#11 was a large, primary resource-based firm that was certain to be recognized by virtually everyone in the province. It was known at the time, however, that Firm#29 was also a member of the Phase Three sampling frame. Moreover, it was a relatively young firm serving specialized markets external to the province; although the firm was well known in the St. John's area, it was far less certain that rural entrepreneurs would recognize it. In order to preserve the integrity

of the Phase Three sampling frame and because of the potential for low awareness outside the St. John's area it was decided to exclude Firm#29 from further consideration. The next most frequently-cited firm was Firm#12, with four citations. This firm was a wholesaler, possessing a history extending over several decades. In addition, this firm displayed strong consensus, receiving no citations in other strategy categories. Firm#12 was consequently selected as the second element and will now be designated as Firm D.

Table 5.5  
Analysis of Cross-Classifications\*

Nominee#	Number of Citations Received				Total
	Defender	Prospector	Analyzer	Reactor	
Firm 1				2	2
Firm 2	1			3	4
Firm 3				3	3
Firm 4	2	2	4	1	9
Firm 5	3		2		5
Firm 6		3			3
Firm 7			2		2
Firm 8	3	1	3	3	10
Firm 9			2		2
Firm 10	3			2	5
Firm 11		9		2	11
Firm 12		4			4
Firm 13	2		1		3
Firm 14			2	2	4
Firm 15		1	2	0	3
Firm 16	1		2	2	5
Firm 17		2			2
Firm 18	1		2		3
Firm 19	4		2	1	7
Firm 20	2		1		3
Firm 21	3				3
Firm 22	2	3		3	8
Firm 23		3	1		4
Firm 24	5			1	6
Firm 25	2			1	3
Firm 26	2				2
Firm 27	2		1		3
Firm 28	2		1	1	4
Firm 29		8			8
Firm 30		2			2

\* Non-Newfoundland firms have been eliminated  
Only firms with at least 2 nominations in one category appear



In the Analyzer category Firm#4 obtained the greatest number of citations, receiving four. Although this long-established manufacturing firm was also cited in other categories, it met the criterion for consensus. As well, it possessed high visibility, with its product widely available across the province. Hence, the firm was designated an element (Firm E). The firm receiving the next highest number of citations was Firm#8, with three. Unfortunately this firm also received three citations in two other strategies and therefore did not pass the test for consensus. Several firms were cited in two instances, but after applying the test for consensus the field was narrowed to four candidate firms: Firm#7, Firm#9, Firm#15 and Firm#18. Firm#9 was a retail operation possessing only one outlet in a rural community and consequently was rejected on the basis of inadequate visibility. Firms #15 and #18 both achieved an adequate degree of consensus, but not as strong as that obtained by Firm#7, which had not been cited in any other category. Firm#15 was also somewhat problematic because it was related to two other firms on the list; in the interests of conservatism these firms were kept separate to coincide with the firm names cited by respondents. In view of these considerations, Firm#7 was selected and will be designated as Firm F. This firm is a long-established wholesale and brokerage firm with locations on both the east and west coasts of the island.

In the fourth and final strategy category, the Reactor, four firms received three citations each, which was the maximum observed in the category. Two of these firms, however, did not meet the criterion for consensus, leaving Firm#2 and Firm#3 as primary candidates for selection. Firm#2 possessed a high public profile and served several locations across the province.<sup>3</sup> Firm#3 operated in several industries and had been in existence for several decades. Since both firms satisfied the selection criteria, they were adopted as grid elements. In view of its higher public profile, Firm#2 will be designated Firm G; Firm#3, representing the second choice, will be designated Firm H.

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<sup>3</sup> The industry has not been disclosed in this case in order to preserve the anonymity of the firm.

In summary, two firms were selected as grid elements from each of the four strategy categories. Of the eight firms ultimately selected, three were ranked among Newfoundland's 50 largest employers (St. John's Board of Trade, 1993-94).<sup>4</sup> It is important to note that, because the potential for unsuccessful firms had been eliminated during the pre-testing process, it was also decided to include one additional element for Phase Two, consisting of a massive and highly-publicized business failure that had recently occurred. This element was supplied by the researcher and was described in an earlier section dealing with methodology; this element will subsequently be designated Firm I.

It must also be noted that although all selections qualified according to the selection criteria that had been established, in some instances this was just barely the case. Of the three criteria utilized, perhaps the least important was the criterion for consensus, since the purpose of the exercise was to obtain a diverse pool of elements rather than to ensure that a firm truly represented a particular strategy. The most troubling criterion, instead, turned out to be frequency of citation. Due to the relatively small sample, a few firms were selected even though they had obtained only two or three citations within a category. It should be noted that, given the nature of the task and the thousands of firms in the province from which respondents could choose, obtaining any repeat citations whatsoever could be considered somewhat of a success; as few as three citations still represented 6.7 percent of the total sample of respondents. Nevertheless, it was recognized that low citation frequencies meant that one could not take for granted that all of the elements would indeed be well known to participants in subsequent stages of the research. In particular, this problem was expected to be of greatest concern in the case of second-choice elements (Firms B, D, F and H), which were only required for one subsequent phase of the research (Phase Two; in Phase 3 and 4 only four elements would be required, these being the first choices in each category).

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<sup>4</sup> This ranking includes both public and private organizations.

In response to the problem of ensuring elements would be well-known to future participants it was decided to adopt two strategies. The first strategy was to include four individual sheets, each containing one strategy description as depicted in Appendix 4.2, in the Phase 2 research instrument documents. (Because the only modification to the original sheets involved requesting the respondent to identify one firm rather than two, samples have not been included here.) These documents were not shown to Phase Two participants unless it was required; participants were instead instructed that if they were not familiar with any of the firms named as elements they should inform the interviewer, who would then supply alternate elements. The second strategy in response to the problem was to use Phase Two of the research to test whether participants would be familiar with the elements adopted for subsequent phases of the research and to determine which elements were most suitable for that purpose.

## **5.2 PHASE TWO**

Firms participating in Phase Two had been selected on a convenience basis and were believed to represent examples of successful firms, with the majority having been prior recipients of awards for entrepreneurship or exporting. Table 5.6 presents a summary of the sample composition. Of the eight males and four females interviewed, eleven were firm owners and one held the office of president. All represented established firms located in St. John's, Newfoundland; the mean firm age was 8.5 years and ranged from 2-15 years.<sup>5</sup> Interviews ranged from 20-50 minutes in duration, although it should be noted that the briefest interview (20 minutes) had to be terminated prematurely when the interviewee was called to an important meeting; typically, 30-40 minutes were required to elicit the constructs.

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<sup>5</sup> One family firm had actually been started more than 200 years earlier. Because this would have severely skewed the age distribution, it was decided to base the calculations on the year the participant assumed the presidency of the firm (1982).

Table 5.6  
Phase 2 Sample Composition

Topic	Category	Frequency (n=12)	
Owner			
	Yes	11	
	No	1	
Senior Manager			
	Yes	12	
	No	0	
Gender			
	Male	8	
	Female	4	
Age Group			
	Under 25	1	
	25-29 years	2	
	30-34 years	1	
	35-39 years	3	
	40-44 years	2	
	45-49 years	1	
	50 years or greater	2	
Education			
	Did not complete high school	0	
	Completed high school	0	
	Completed vocational/trade school	4	
	University undergraduate degree	4	
	University graduate degree	3	
	Other	1	
Industry			
	Retail	1	
	Wholesale	0	
	Manufacturing	1	
	Primary resource-based	0	
	Construction	0	
	Service	10	
# of Employees		Mean Score	Range
	Full-time	34.2	1-140
	Part-time	7.0	0-50
	Seasonal full-time	0.6	0-5
	Seasonal part-time	0.5	0-6

One purpose of the Phase Two interviews had been to check whether participants would be familiar with the firms adopted as elements in Phase One. In a vein similar to Phase One and somewhat surprisingly, three interviewees expressed discomfort or difficulty with Firm I, representing an unsuccessful firm. All were familiar with the example, yet for some reason appeared reluctant to confront it. Unfortunately, the interviewees experienced difficulty expressing their reasons for this and no potential explanations can be

offered here. In view of the fact that the notion of unsuccessful firms had been poorly received in both Phase One and Phase Two it ultimately was decided to eliminate unsuccessful firms from further consideration in future stages of the research. Nevertheless, this finding is quite interesting and might represent a worthwhile avenue for future research.

In four instances difficulties were experienced with other Phase One elements. Three interviewees reported they were unfamiliar with Firm F and one was unfamiliar with Firm D. (In each of these instances a substitution was made using the appropriate strategy description document described earlier.) Two observations can be made here. First, both of the reported firms operated in the wholesale industry. These results suggest that the use of wholesale firms as grid elements in future research should only be considered with considerable caution; it appears that wholesale firms possess inadequate visibility and public awareness beyond their own industry and customer base. Second, both of the unfamiliar firms represented second, rather than first, choices in their particular strategy categories. Because only four firm elements were required for subsequent stages of the research (one from each strategy category) and because all of the first-choice firms had been sufficiently familiar to participants, it was decided to adopt the first-tier elements (Firms A, C, E and G) for use in subsequent phases of the research. It is, perhaps, worthwhile to note that none of the firms adopted operated in the wholesale industry.

In addition to verifying the Phase One elements, an important purpose of the Phase Two stage was to obtain grid constructs for use in subsequent phases of the research. Over the course of the 12 interviews a total of 158 constructs were elicited.<sup>6</sup> The mean number of constructs elicited during one interview was 13.17, with a standard deviation of 3.59 constructs and range of 8-20 constructs.<sup>7</sup> In order to select appropriate constructs for use

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<sup>6</sup> Of these, two constructs were unipolar (i.e. the interviewees were unable to supply a contrasting pole).

<sup>7</sup> Not surprisingly, the fewest number of constructs were obtained from the interview that terminated prematurely.

in subsequent stages of the research it was necessary to first organize and categorize the constructs (recorded verbatim) according to the strategic scope they implied. This process was conducted in successive stages and will now be described, with outcomes. Table 5.7 provides some examples of elicited constructs.

The first step in organizing the constructs was to categorize them as external or internal, depending on their strategic orientation. A construct was defined as external if it referred to a firm's products or markets (this approach is consistent with strategic management theory and also the findings of Filion [1990a, 1991] concerning vision). An example of an external construct (from Table 5.7) is "clear-cut niche" versus "not set apart from competitors," since "clear-cut niche" is a reference to the firm's market breadth. In contrast, an internal construct was one which referred to the firm's organizational characteristics, such as size, finance, structure, control, etc.. Examples of internal constructs would be "financially secure" versus "scrambling," or "much bigger" versus "much smaller." When the classification process had been completed for each of the 158 constructs, it was found that 75 constructs were external, 81 constructs were internal and two constructs could not be classified within the existing framework. The mean number of external constructs elicited from an interviewee was 6.25 constructs; in the case of internal constructs the mean was 6.75. It is interesting to note that the proportions of internal and external constructs are remarkably similar. This finding is consistent with Filion's own findings concerning the nature of the entrepreneur's central vision (1990a, 1991) and also suggests that participants did not experience difficulties in considering the internal attributes of firms other than their own.

The second step in the classification process was to group the constructs within the external and internal categories according to theme/subject. Each group was subsequently provided with a descriptive label. The results of this process are summarized in Table 5.8.<sup>8</sup>

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<sup>8</sup> The fact that an equal number of groups or sub-categories appear in both the external and internal categories is merely coincidental.

Table 5.7  
Examples of Elicited Constructs

<u>Emergent Pole</u>	<u>Implicit Pole</u>
"can adapt to tough times"	"diversified to reduce impact of one market"
"much bigger"	"much smaller"
"financially secure"	"scrambling"
"clear-cut niche"	"not set apart from competitors"
"aggressive R & D"	"trying to keep up"

Table 5.8  
Summary of 2nd-Order Construct Groupings

1st-Order Category	2nd-Order Category	# of Constructs Appearing	# of Interviewees Represented
<b>EXTERNAL</b>			
	1. Market Share/Staying Power	12	8
	2. Market Breadth	3	2
	3. Product Innovation	4	3
	4. Product Scope	11	7
	5. Market Scope (Geographic)	16	10
	6. Image	6	4
	7. Customers	8	7
	8. Industry Characteristics	7	3
	9. Other	8	6
Total		75	12
<b>INTERNAL</b>			
	1. Size	5	4
	2. Employees	7	5
	3. Finance	12	9
	4. Structure	12	7
	5. Posture	15	8
	6. Ownership & Control	13	5
	7. Skills	8	4
	8. Stage of Development	3	2
	9. Other	6	5
Total		81	12

The third step in the classification process involved a further refinement of the groupings established in the previous step. Within each 2nd-order classification, constructs were once again grouped according to sub-topic, and descriptive labels provided. Although this step proved helpful in organizing the large quantity of data for subsequent analysis, the results are not required for the analysis described here. Nevertheless,

because the results are useful for interpreting the content of the extant categories, a summary is provided in Appendix 5.1.

Once all of the constructs had been organized according to topic, it remained to decide whether it would be appropriate to supply a set of common constructs for grid-based tasks in future stages of the research (i.e. all grids would employ a standard set of constructs) and, if so, to determine which constructs should be utilized. Unfortunately, the literature offered no guidelines as to the conduct of either of these tasks. On reviewing the constructs it ultimately was decided to adopt a common set of constructs, for two primary reasons. First, a substantial degree of commonality or overlap is evident from the summary contained in Table 5.8. Within the 1st-order classifications (External, Internal) and disregarding the "Other" categories, relatively few topical areas appear. In fact, only eight subject areas appear within each; this is substantially fewer than the number of subjects interviewed, which is in itself quite small. Furthermore, of the total 158 constructs elicited, 142 were classified within these categories; this represents 90.0 percent of all constructs. It also should be noted here that the sample was quite diverse in a number of respects, particularly gender, age, education, firm size and firm age.

The second observation suggesting the appropriateness of supplying common constructs was that nearly all topic areas were representative of key concepts in strategic management theory. The strategic management literature has a well-established and substantial base of empirical work from which to draw; had the results of the current study been wildly divergent, this would have added considerable uncertainty to the decision, but the agreement observed suggested that operators of businesses do share firm-relevant constructs to a considerable degree. In view of the foregoing, it was felt that the argument that entrepreneurs do not share constructs was far less compelling and involved substantially more risk than the decision adopted, which assumes that supplying a common set of task-relevant constructs to a variety of entrepreneurs is valid and, in some cases, desirable, depending on the purpose of the research.



Having decided to supply common constructs, it was necessary to determine which constructs to supply. Here several criteria were applied to guide the selection process. These include, for topic categories...

- diversity across the topic areas observed

and for individual examples of constructs within categories...

- frequency of citation
- relevance to strategic management theory
- ability to be construed as relevant to an entrepreneur's vision for the firm
- number of different interviewees represented in the topic category
- possession of (bi-polar) poles which could be construed as opposites
- clarity of wording

Because diversity across topic groups was considered important in achieving representativeness, it was decided that a topic would be represented by no more than one construct. It was decided to restrict the number of selected constructs to 12 rather than 16 (the latter was the number of topic categories observed), however, in order to ensure that the grid size did not become unmanageable; this was because it was known that interviews in subsequent phases of the research needed to cover a considerable amount of material in addition to the grid. It was also decided to include an equal number of external and internal topics as constructs. This would not only help to achieve maximum diversity, but was also consistent with the observed patterns of response described earlier.

Over and above the criteria listed above, a construct was deemed unsuitable for adoption if it was considered problematic with respect to the "permeability" of the construct. A permeable construct is one which will admit new elements to its context (Kelly, 1955). In some respects, permeability can be likened to the abstract-concrete dimension. If a construct is very permeable, it possesses a wide range of convenience and will apply to a wide range of new elements. If a concept is excessively impermeable, it may be of use in interpreting the past but will be of little use in dealing with future events. In the context of the current research, a construct had to be sufficiently permeable to apply to all of the eight elements which had been adopted in order to qualify for selection.

The constructs ultimately adopted are listed in Table 5.9. Most noticeable, perhaps, is the omission of some categories which, according to Table 5.8, appear strong candidates for selection. Within the "External" constructs, for example, although the category "Market share/Staying power" contained 12 constructs, it was decided to omit this category because nine of the constructs identified here were dependent on stage of development (e.g. "established business with established customers..." versus "a few people with an idea"). Although stage of development itself is an important strategic management concept, these constructs did not indicate how or why and it did not appear that the notion of survival alone would adequately discriminate between entrepreneurial firms. (One can also note in retrospect that since all firms in the Phase Four sample would have been started at approximately the same time and were relatively young, this construct category in all likelihood would not have exhibited sufficient variance to be useful.)

"Industry characteristics," with seven constructs appearing in the category, also appeared a likely choice for selection in view of the relatively large number of constructs and because the label "industry" suggests yet another important strategic management concept. An example of a construct in this category is "consumer-based product" versus "commercial-type product." Once again the constructs appearing here were not indicative of how or why they were important. That is, although they were correct from an observational perspective, they were merely observations. They were not based on strategic insights nor did they represent value-based judgements, making it difficult to construe how such constructs would be useful in terms of depicting entrepreneurial vision for comparative purposes.<sup>9</sup> Many of the constructs in this category were also considered excessively impermeable (e.g. contract work versus manufacturing), in that they did not

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<sup>9</sup> It can be argued that in the case of large firms, where portfolio theory and diversification become more pertinent, it may have been worthwhile to probe more deeply with interviewees into the strategic value of these industry observations. In the current research involving small firms, however, this would not have been appropriate, as it would have required "pushing" the interviewees to attribute far more meaning to the construct than had been intended.

apply to all of the grid elements. In conclusion, the category was abandoned due to its lack of relevance to both strategy and vision.

Within the Internal construct categories, both Finance and Stage of Development were dropped from consideration over the course of the analysis. The problems presented by the Finance category had not been anticipated when the initial criteria for selection were developed, but instead surfaced during the analysis itself. Virtually all of the constructs in this category referred either to cash flow or profits. Some examples are:

- financially secure versus scrambling
- financially stable versus financially unstable
- financial difficulty versus financial success
- more profitable versus less profitable

The primary reason for considering the category to be problematic was that these constructs are focused on a particular goal outcome (i.e. financial success) without consideration for a plausible alternative. Had these constructs entailed a conscious trade-off of benefits, such as opting for growth at the expense of cash flow or profits, in all likelihood they would have been judged to be informative. In the current situation, however, it was difficult to imagine anyone opting for the unsuccessful end of the spectrum. Consequently, it was judged that construct scores from this category would not discriminate adequately amongst firms in subsequent phases of the research.

“Stage of Development” was not selected because of the relatively few constructs appearing and because it was judged to be excessively impermeable. An example of a construct in this category was “mature” versus “still in growth stage.” Of the internal construct categories, Stage of Development contained only three constructs, which was the fewest observed within this first-order categorization. Additionally, because none of the stage-of-development theoretical frameworks known to the researcher possessed as few as two stages and because it was already known that the grid elements adopted could not be constricted to only two stages of development, it was also decided to eliminate this category from consideration.

Table 5.9  
Constructs Adopted for Subsequent Phases

Category	Construct	
	Pole 1	Pole 2
<b>EXTERNAL</b>		
Market breadth	clear-cut market niche	broad customer base
Product innovation	constant change in products	don't rock the boat; don't tamper with a successful product
Product scope	one-product company; singular focus	diverse portfolio of different businesses
Market scope	focus on local marketplace	global market presence
Image	public is less familiar with the firm	greater public presence
Customers	service-based relationship with the customer	price-based relationship with the customer
<b>INTERNAL</b>		
Size	like to be small	like to be large
Employees	no problem in staffing its requirements	attracting, maintaining and developing human resources is one of the biggest management issues
Structure	firm is almost totally dependent on the owner/president's skills and time	fully trusted, competent multi-level management team that can operate profitably without the owner/president
Posture	more equipped to adapt to change	less equipped to adapt to change
Ownership/Control	wholly family-owned Newfoundland business	joint venture with global connection, willing to relinquish ownership to achieve growth
Skills	strong sales and marketing skills	strong technical and production skills

Each interview concluded by showing the interview the list of constructs s/he had supplied and asking whether there were any concepts or dimensions s/he would use to describe the vision of his/her own firm that did not appear on the list. These responses are listed in Table 5.10. Eight interviewees cited a total of 18 dimensions which are listed in the table. It is quite apparent that the majority of these did in fact surface when the entire set of constructs from all 12 interviews are considered. This observation suggests that while the repertory grid process may not reliably elicit a representative set of vision-related constructs when administered to one individual, the grid's effectiveness increases substantially when administered to even a relatively small sample.

An even more stringent (than that described in the foregoing paragraph) test of the grid-based procedures utilized would involve determining to what extent the vision dimensions which were not elicited by the grid methodology are covered by the 12 "standard" constructs selected for the final phases of the research. This has been done in

column three of Table 5.10. It can be seen that of the 18 dimensions, 11 are either covered or partially covered by the 12 constructs adopted. Moreover, of the seven dimensions not covered, five are judged as being too impermeable (i.e. too firm-specific) to be of use in comparative research with a broad-based sample; only two dimensions ("customer fulfillment" and "employee fulfillment") are sufficiently broad to apply across the set of elements selected for the current research. The test, therefore, provides support for the validity of not only the grid-based interview procedure adopted, but also the analytical process used to select a set of standard constructs.

Table 5.10  
Vision Components not Elicited

<u>Interview ID#</u>	<u>Dimension Cited</u>	<u>Covered by Constructs Adopted?</u>
2	- customer fulfillment	no
	- employee fulfillment	no
	- franchisee fulfillment	no
5	- partnering	partially
6	- bigger product line	yes
	- investment as a % of sales	no
7	- branches throughout world	yes
	- higher profile in international marketplace	yes
	- specific target market focus	yes
	- joint ventures & partnerships	partially
8	- flexible	yes
	- one-stop technical shop	no
	- develop local consortiums to provide client with a turn-key operation	no
	- focus on quality & service	yes
9	- globally distributed operations & sales	yes
10	- a storefront	no
11	- move into developing products in addition to services	yes
	- revenue base a blend of service & product	yes

Two additional comments or observations warrant mention in the discussion of the Phase Two results. First, although in nearly all instances the adopted constructs are verbatim descriptions of constructs elicited during the course of the interviews, in very few cases the researcher found it necessary to modify the wording slightly to improve either the polar contrast or the clarity of a construct. It was decided to reproduce constructs in a precise fashion wherever possible in order to build and sustain the interest of the

interviewees and facilitate their identification with the research process. Secondly, it warrants mention that many interviewees voluntarily indicated that they had enjoyed the interview process (often with surprising enthusiasm) and found it interesting. This result conflicts with prior experiences cited in the literature (which is biased, admittedly, towards large firms) and is believed to be attributable in part to the overall research design (which restricted the number of elements appearing, and disassembled the grid process into component procedures completed across several phases of the research rather than requiring one participant to complete the entire repertory grid process), and the considerable effort made to ensure the interviewee understood how his/her role fit with both past and future stages of the study.<sup>10</sup>

### **5.3 PHASE 3**

In order to achieve the desired sample size of 12, 14 firms were contacted by telephone to request interviews. Although there were no outright refusals, one respondent indicated he would not be available until one month following the date of contact; the second agreed to be interviewed but subsequently did not commit to an appointment. The resultant response rate was therefore 85.7 percent. The final sample consisted of 15 individuals representing 12 firms. Two firms involved joint ownership by "equal partners;" of these, one was owned by two individuals and the second firm by three. Although all of these individuals were interviewed, it turned out that in both firms one individual provided the entrepreneurial drive for the firm. Interestingly, this is consistent with the theorizing of Mary Douglas (1978) which posits entrepreneurship as an individual activity fundamentally incompatible with egalitarian environments.

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<sup>10</sup> The entire grid procedure involves, at a minimum, construct elicitation and the supplying of rating scores for all possible grid combinations.

The geographic distribution of the firms in the sample is depicted in Appendix 5.2. Six, or 50 percent of the firms were urban (located in the St. John's metropolitan area) and six were classified as rural. All interviews were held in the entrepreneur's place of business. Of the two firms owned by equal partners, in one instance the partners were interviewed separately and in one instance the partners were interviewed as a group. In both cases, however, repertory grids were administered separately without the other partner(s) being present. Interview durations ranged from 1.25 - 3 hours, with the norm being 1.75 - 2.5 hours.

Tables 5.11 and 5.12 provide breakdowns of the sample composition by individual and by firm. It is evident from Table 5.11 that the proportion of female entrepreneurs in the sample is surprisingly high. This is mostly attributable to the presence of one firm which was jointly owned by three women. It is also notable that the younger age categories contain few entries. This may be partly explained by the fact that included in the sample is a substantial proportion of established firms; as can be seen in Table 5.12 the average firm age is 12.3 years.

Table 5.11  
Phase 3 Sample: Individual Demographics

Category	Sub-Category	Frequency (n = 15)	Percent*
Gender			
	Male	8	53.3
	Female	7	46.7
Age Group			
	Under 25	0	0.0
	25-29 years	1	6.7
	30-34 years	0	0.0
	35-39 years	1	6.7
	40-44 years	6	40.0
	45-49 years	3	20.0
	50-59 years	3	20.0
	60 years or greater	1	6.7
Education			
	Did not complete high school	0	0.0
	Completed high school	6	40.0
	Completed vocational/trade school	4	26.7
	University undergraduate degree	3	20.0
	University graduate degree	2	13.3
	Other	0	0.0
		<b>Mean</b>	<b>Std. Dev.</b>
Ownership	Percent owned	69.0	39.1

\* Totals may not equal 100 due to rounding error

Table 5.12  
Phase 3 Sample: Firm Characteristics

Topic	Category	Frequency (n=12)	Percent
Industry			
	Retail	2	16.7
	Wholesale	0	0.0
	Manufacturing	3	25.0
	Primary resource-based	1	8.3
	Construction	0	0.0
	Service	6	50.0
Legal Form			
	Proprietorship	1	8.3
	Partnership	0	0.0
	Incorporated	11	91.7
		<b>Mean Score</b>	<b>Std. Dev.</b>
Firm Age	(Years)	12.3	11.0
Firm Size	# of Employees**	30.8	32.6

\* Totals may not equal 100 due to rounding error

\*\* Calculated as described in Phase Four Methodology section

One of the objectives of Phase Three was to investigate the behaviour of the grid-based measures of entrepreneurial vision. Although the algorithms used to calculate these scores had been used in prior psychological research, it was not known whether the scores obtained in the context of the current research would exhibit sufficient variance to discriminate between entrepreneurs. Table 5.13 summarizes the results of the grid-based measures. All three measures display substantial variability, with the high scores in Intensity and FIC representing increases of approximately 100 percent above the base or lowest scores recorded. In the case of CHI, the range is even more dramatic. Although the sample was of insufficient size to permit the exploration of additional score properties (e.g. correlation tests), the measures were judged to possess sufficient variability to discriminate among individual respondents.

Table 5.13  
Grid-Based Score Results for Individuals

n=15	<u>Intensity</u>	<u>FIC</u>	<u>CHI</u>
Minimum	1527.5	9	8.1
Maximum	3153.2	18	29.7
Mean	2122.5	14.5	12.6
Standard Deviation	369.5	2.9	5.5



Before departing the subject of the repertory grid results, one unexpected and highly interesting incident that occurred during the research deserves mention. Earlier it was indicated that one of the firms in the sample was jointly owned (and founded) and by three equal partners. During the course of the administration of the repertory grids it became apparent that the grid of one of these partners was strikingly divergent from those of the other partners in that it revealed far more grandiose aspirations for the firm. Approximately two weeks following the interview, the researcher learned that the partner possessing the divergent vision had subsequently left the firm. Obviously, one such incident does not provide evidence of the validity of the grid process as a means of differentiating between entrepreneurial visions. At the same time, however, had the grid failed to reveal the divergence of visions in this particular firm, our confidence in its measurement capabilities would have been shaken considerably. To this extent, at least, the repertory grid methodology lived up to expectations.

A second objective of Phase Three was to investigate the appropriateness of the intended sampling frame. Here the results were quite unexpected. The original sampling frame consisted of nominees for a major entrepreneurship award, with the rationale underpinning this choice being to ensure that the sample would be sufficiently "entrepreneurial." At the time of the interviews, however, the firms in the sample were quite divergent in terms of both stage of development and the nature of the activities occupying management's attention.

Seven of the 12 firms could be considered mature; these firms attained a relatively stable level of performance and were not actively pursuing growth or contemplating a significant change of strategy. For this group, the most significant current project entailed the construction of a new and larger facility. For the most part, however, at the time of the interviews these firms tended to be occupied by routine day-to-day activities representing the directing and control functions of management. Two firms (operating in cyclical

industries) were pursuing strategies to achieve income stabilization, either through diversification or by a gradual transition in the nature of the business; the focus of these firms' key activities can best be described as comprising the planning and organizing functions of management. One firm was a recent start-up and still struggling for survival. This firm can be considered atypical because it was the product of a unique government program designed to facilitate business start-ups among the unemployed by providing a series of educational programs which imparted not only business knowledge, but also skills specific to an industry in which participants had no prior experience. Of the remaining two firms, one was engaged in rapid growth with the goal of becoming a world-class industry leader and one firm had been recently taken over by a new owner and was currently in a turnaround situation.

Four of the firms in the sample had also recently been engaged in extraordinary activities prior to the interviews. Three of these were recent start-ups and one had faced a crisis situation stemming from a severe environmental jolt. These firms were interviewed in both contexts (current phase and prior extraordinary phase). Table 5.14 serves to clarify firm status and interview contexts.

Table 5.14  
Firm Contexts and Interview Contexts

Firm	Age (yrs.)	Current Situation	Interview Context(s)
1	3	Mature	1. Current 2. Start-up
2	5	Income Stabilization	1. Ongoing
3	19	Mature	1. Current
4	10	Turnaround	1. Current
5	42	Income Stabilization	1. Current 2. Crisis
6	10	Mature	1. Current
7	3	Survival	1. Current 2. Start-up
8	10	Rapid Growth	1. Rapid Growth
9	13	Mature	1. Current
10	4	Mature	1. Current 2. Start-up
11	9	Mature	1. Current
12	18	Mature	1. Current

In only three instances did vision surface as a powerful driving force underlying the firm-related activities of the interviewee. In these instances, however, the richness and emotional "force" of the interviewee's vision was striking. From Table 5.14 above, the interview contexts which were characterized by entrepreneurial vision were: Firm 1, Start-up; Firm 4, Turnaround; and Firm 8, Rapid Growth. Given that all members of the sample had been nominated as outstanding examples of entrepreneurship, however, these results must be considered surprising. Although the sample is much too small to permit definitive conclusions, some attempt at interpretation and explanation is warranted.

One observation that can be drawn from the data is that vision was only an important factor in firms engaged in non-routine activities; these included start-up and the attempting of bold strategic "leaps." Firms which had stabilized and even those which were growing incrementally in a controlled, calculated manner tended to be occupied by routine tasks that fall under the domain of management rather than entrepreneurship. Assuming that the members of the sample had indeed exhibited entrepreneurial behaviour in the past, these results suggest that entrepreneurship is better associated with situational contexts than individuals. In other words, instead of asking "Who is an entrepreneur?" (Carland, Hoy and Carland, 1988) the more relevant question might be "When is an entrepreneur?". For example, Firm #1 in the sample would likely be described as a "lifestyle" firm in its current context. Such firms and their owners are seldom associated with entrepreneurial characteristics. Nevertheless, this same individual had been driven by a vivid and passionately-held vision only a few short years prior, during the start-up phase of the business.

In view of the foregoing, one is forced to conclude that although a sampling frame consisting of entrepreneurship award nominees may indeed include examples of successful entrepreneurial activity in the past, it does not ensure that entrepreneurship is currently an important activity of firms in the sample. Instead, it appears more important to look for situational contexts which are more conducive to and demanding of entrepreneurial

behaviour, and hence, vision. According to Mintzberg (1990), start-up and turnaround situations are more likely to provide such contexts. For the last phase of the research (Phase Four) it was therefore decided to sample firms which had recently experienced the start-up process.

A third objective of the Phase Three of the research was to determine the willingness of entrepreneurs to disclose their supporters and to explore the nature and scope of the support process. It was found that the entrepreneurs in the sample often considered this information to be highly sensitive, but in all cases were willing to disclose names and details of transactions once they had acquired comfort and trust in the research process. It was concluded that support was indeed capable of being investigated in depth and that the choice of personal interviews as the research methodology was appropriate.

The number of supporters reported by interviewees ranged from 2 to 14. The firm reporting 14, however, was the atypical firm described earlier (start-up context); in this instance the interviewees indicated that they considered virtually all of the teachers and various representatives of government support agencies who had been involved in their training and development program to have been "key" to the founding of their business; although this position appears reasonable in view of their unique situation, it should not be considered a normal support system. Excluding this firm from consideration, the highest number of supporters reported was nine. It can be noted that because data was collected concerning each individual supporter, the size of a support system had a considerable impact on the length of an interview.

Mature firms in stable contexts usually named the entire management team and some professional advisors such as accountant, lawyer and banker as being among their key supporters. This tendency resulted in larger support systems with a relatively high proportion of insiders. In the case of firms interviewed in more than one context it was found that there was frequently little overlap between support systems across contexts.

For example, the supporters reported by Firm #5 (Table 5.14) in the context of crisis consisted of six outsiders, none of whom appeared in the group of supporters reported in the firm's current context. This suggests that support systems of firms engaged in non-routine activities may be task-specific and temporary creations. Such an approach may provide greater flexibility and more optimal configuration and specialization than a formalized and enduring support system such as a board of directors, and may help to explain why past research has found boards of directors to be under-utilized by small firms, despite frequent testaments to their value appearing in small business textbooks.

In eight of the sixteen interview contexts representatives of government support agencies were reported by interviewees as having been key supporters. As the Phase Four results would subsequently reveal, however, this frequency of occurrence is substantially higher than that for the general small business population in the province. It appears that the Phase Three sample contains some bias towards government support which is probably attributable to a form of "self-selection," as a substantial proportion of the nominees in the sampling frame were in fact nominated by government support agencies. This suggests that caution should be exercised when designing or interpreting the results of entrepreneurship research employing samples based on award nominees and recipients.

It was also observed that firms engaged in routine activity had no trouble identifying their key supporters but their descriptions of support received tended to be quite general and the support often consisted of information or advice. In contrast, firms in non-routine contexts usually provided detailed examples of key support transactions and explained how the support was important to the development of the firm. There were no difficulties found with respect to the support categories developed for the research instrument and the categories consequently were judged to be satisfactory for usage in Phase Four of the research.

One final observation concerning the Phase Three interviews warrants mention even though it is beyond the scope of the current study. Several interviewees in rural Newfoundland expressed feeling frustrated and disappointed by the lack of community support during the start-up phase of their businesses. In these instances Newfoundland's culture and close-knit community structures appeared to be viewed as obstacles. This phenomenon appears to warrant further investigation, as it may be that these entrepreneurs were unaware of the importance of building community-based support; if so, training and information packages for prospective entrepreneurs could be revised to incorporate models emphasizing community-based support, such as that proposed by Ronstadt (1984).

## **PHASE FOUR**

### **5.4.1 Sample Composition**

Considerable time and effort were required to construct the Phase Four sample as many of the firms contained in the list of incorporations supplied by the province did not have business listings in the province's telephone directories. In these instances effort was made to locate and contact the individual who had registered the firm. Three attempts at telephone contact were made in cases where a potential candidate was located in the telephone directory.

Attempts were made to locate a total of 381 sample elements. Of these, 197 either could not be located or contacted. Of the 184 firms successfully contacted, 109 were eliminated because they did not qualify for inclusion in the sampling frame. This left a pool of 75 qualifying firms on which response rate calculations should be based. Fifty of the qualifying firms were ultimately interviewed, representing a response rate of 66.7 percent. Several factors contributed to reducing the response rate. Three outright refusals

to participate were received and three candidates failed to show up for the interview at the designated appointment time and could not be rescheduled. Two last-minute cancellations which could not be successfully rescheduled were also received. Finally, 16 firms which had indicated a willingness to participate were unable to schedule an appointment within the timeframe allotted for the research process due to prior commitments.

Although 50 firms were interviewed in Phase Four, two firms (1 rural, 1 urban) were subsequently disqualified from inclusion in the sample due to information received during the interviews. One firm was disqualified because it was learned that the owner had operated the same business for 15 years until 1989 and then restarted the business in 1993 upon retirement. The second firm excluded had been started by a well-established firm to market a new (but related) product line. Although this start-up provided the benefit of a new corporate name which better fit the product line, it did not require its own infrastructure nor did it require a new customer base. The final sample consisted of 48 firms. A summary of the sample composition is given in Table 5.15.

In research incorporating survey designs it is advisable to investigate the potential for sample bias which may arise during the process of "self-selection" in the case of non-participants. In the current study extensive testing of the potential for sample bias was hampered by the schedule conflicts (e.g. instances where the entrepreneur was out of town or ill for an extended period) and difficulties associated with making contact (e.g. telephone calls not being returned) which gave rise to the non-participation in the first place, as well as the sheer smallness of the non-respondent pool in absolute terms. Nevertheless, it was possible to test for the presence of bias in the sample composition with respect to gender and industry.

Of the total 24 non-participants (i.e. those who were successfully contacted and qualified for inclusion in the sample but were not interviewed) 15 were classified as urban and 9 as rural. It may be that the observed difference in response rate between urban and

rural firms is attributable to more frequent usage of telephone answering machines by urban firms (making these firms more difficult to contact) and by a stronger effort on the part of rural firms to cooperate out of recognition for the considerable travelling effort required by the researcher. Table 5.16 provides a breakdown of the non-participants by gender and industry.

Table 5.15  
Phase 4 Sample Composition

Category	Sub-Category	Frequency (n=48)	Percent*
Gender			
	Male	39	81.3
	Female	9	18.8
Age Group			
	≤ 29 years	3	6.3
	30-39 years	16	33.3
	40-49 years	20	41.7
	50-59 years	6	12.5
	≥ 60 years	3	6.3
Education			
	Did not complete high school	3	6.3
	Completed high school	6	12.5
	Completed vocational/trade school	19	39.6
	University undergraduate degree	6	12.5
	University graduate degree	5	10.4
	Other	9	18.8
Industry			
	Retail	8	16.7
	Manufacturing	1	2.1
	Primary resource-based	3	6.3
	Construction	6	12.5
	Service	30	62.5
		<b>Mean</b>	<b>Std. Dev.</b>
Firm Size	# of Employees (1996)	5.2	7.7
Ownership	Percent owned	80.3	26.8

\* Totals may not equal 100 due to rounding error

In the case of gender, the proportion of female non-participants is slightly lower than the proportion observed in the study sample. The chi-square test statistic can be used to evaluate the sample design by testing for independence between sample frequency distributions (Leabo, 1976). The null hypothesis is that there is no difference between the study sample distribution and the distribution of non-participants. The chi-square statistic, however, is dependent on sample size; as a rule of thumb, the chi-square distribution is



only a good approximation of the test statistic when the expected frequencies in each cell are at least five (ibid; Norusis, 1990). In cases where the expected frequencies are too small, Yate's correction for continuity is often applied. This entails adjusting the observed frequencies in each cell by 0.5 so as to reduce the computed value of chi-square. It is evident from the foregoing that while ignoring Yate's correction when cells contain too few frequencies can lead to excessive rejection of the null hypothesis, this is not a concern when the null hypothesis is accepted by the initial chi-square test (Leabo, 1976). For gender the value of the chi-square statistic is  $\chi = 0.047$  with degrees of freedom (df) = 1. The result is not significant ( $p=1.00$ ), indicating that there do not appear to be any significant (i.e. beyond those attributable to chance error) differences between the two sampling distributions.

Table 5.16  
Summary of Non-Participants

Category	Sub-Category	Freq.	%
		n=24	
Gender			
	Male	20	83.3
	Female	4	16.7
Industry*			
	Retail	4	19
	Manufacturing	1	5
	Construction	7	33
	Service	9	43

\* In three cases the industry could not be determined.

In the case of industry the proportion of construction firms in the non-participant group (33%) is visibly higher than the proportion observed in the study sample (12.5%). This may be partially attributable to the fact that most of the interviewing was done during the summer months, when the industry is usually operating at its peak and working long hours. Once again, the chi-square test statistic indicates the differences between the two distributions are not significant ( $\chi=6.084$ ,  $df=4$ ,  $p=.19$ ). It can also be noted that in 1990 12 percent of small firms in Atlantic Canada operated in the construction industry (ACOA, 1994); hence, the observed proportion of construction firms in the study sample appears to be in line with the population distribution of existing small firms.

### 5.4.2 A Preliminary Examination of the Data

Summary statistics for the 19 manifest variables utilized in the current study are presented in Table 5.17. Falk and Miller (1992) recommend that variables so small that they indicate miniscule variation and variables that are highly skewed should be replaced by more normally distributed variables. Unfortunately, the authors do not indicate what threshold values would be appropriate. On reviewing the descriptive statistics, however, the data appear to behave quite well. In all cases the standard deviations are sizeable relative to the values of their associated means. The smallest standard deviation is .24, which is associated with a mean of .28. Nearly all of the variable distributions are negatively skewed (only three are positively skewed) and in nearly all cases the degree of skewness can be considered slight. In only three instances are moderate amounts of skewness (i.e. >1) evident. None of the values exceed two, with the maximum absolute value reported being 1.21.

Table 5.17  
Descriptive Statistics: Manifest Variables

Variable	Mean	StdDev	Min	Max	Skewness	N
V1	13.15	3.84	4	20	-0.42	48
V2	-2357.25	923.4	-5668	-950	-1.2	48
V3	-12.71	5.13	-26.52	-6.031	-1.14	48
V4	15.44	8.12	0	34	0.38	48
V5	21.75	10.04	3	42	-0.13	48
V6	-1.75	1.55	-6	0	-0.83	48
V7	-1.97	1.46	-5.125	0	-0.63	48
V8	0.28	0.24	0	0.75	0.26	48
V9	1.09	0.58	0	2	-0.57	48
V10	0.75	0.39	0	1.5	-0.45	48
V11	3.83	1.97	0	6	-0.68	48
V12	2.29	1.15	0	5	-0.26	48
V13	47.99	25.29	0	87	-0.58	48
V14	2.13	1.27	0	4.5	-0.01	48
V15	5.48	2.21	0	8	-1.21	48
V16	3.10	2.01	1	6	0.23	48
V17	0.10	0.33	-0.74	1.079	-0.07	48
V18	3.98	1.3	1	6.714	-0.34	48
V19	-16.29	8.43	-40	-4	-0.84	48

### **5.4.3 Measurement Model**

#### **Introduction**

As described in an earlier section, a PLS model consists of two sub-models — a measurement model which describes the relationships between the latent constructs and their manifest indicators and a structural model describing the relationships between latent constructs. Although the PLS computer program estimates the measurement and structural parameters of the model together, the model is usually evaluated and interpreted in two stages, beginning with the assessment of the measurement model and then proceeding to the assessment of the structural model. This two-step approach helps to minimize interpretational confounding (Anderson and Gerbing, 1988) since a poorly measured construct provides an indication that the hypothesized construct has not been adequately captured (Wyse, 1992).

Measurement evaluation in structural equation models is concerned with the extent to which the manifest indicators reflect their underlying constructs. The central issue at hand here is that of construct validity, which has been defined as the validity with which we can make generalizations about higher-order constructs from research operations (Cook and Campbell, 1979). It is, as one researcher has colourfully expressed it, “where the rubber meets the road” (Schoenfeldt, 1984, p. 73). The proper assessment of construct validity requires testing for both convergence across different measures of the same “thing” and divergence between measures of related but conceptually distinct “things” (Cook and Campbell, 1979). Consequently, the process of evaluating construct validity can be decomposed into the assessment of convergent validity and the assessment of discriminant validity. The remainder of this section will describe the procedures utilized to conduct the assessment of convergent and discriminant validity and to interpret the results obtained by these procedures.

## Convergent Validity

Convergent validity has been defined as the degree to which two or more attempts to measure the same construct through maximally different methods are in agreement (Campbell and Fiske, 1959), although it is generally recognized that the requirement of “maximally different” methods represents somewhat of an ideal (Fornell, Tellis and Zinkhan, 1981). Three measures of convergent validity will be examined in order to assess the measurement model. The first two, individual item reliability and internal consistency, are measures of reliability and the third is “average variance extracted.” These measures also assess convergent validity at different levels, with the first operating at the indicator level and the latter two at the construct level.

Reliability is defined as the extent to which a measuring procedure yields the same result on repeated trials (Carmines and Zellers, 1979) and essentially is concerned with the stability of measurement. Two measures of reliability are commonly employed in the assessment of a PLS measurement model’s convergent validity: (1) individual item reliability, and (2) internal consistency, sometimes referred to as construct reliability (Fornell and Larcker, 1981). As noted above, these operate at different levels, with the first focusing on the measurement level and the second at the construct level.

### Individual Item reliability

Individual item reliability measures the convergence of each manifest indicator on its associated construct and is assessed by examining the loadings (i.e. correlations) of the measures with their respective construct.<sup>11</sup> It is denoted by  $\rho_x$  and can be expressed as

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<sup>11</sup> This discussion applies to constructs with reflective indicators, which is the case for all constructs in the current research model. When formative indicators are used, it is the weights, rather than the loadings, which are estimated.

$$\rho_x = \frac{\lambda_x^2}{\lambda_x^2 + \text{Var}(\varepsilon_x)}$$

where  $\lambda_x$  is the factor loading for manifest indicator  $x$  on its construct and  $\varepsilon$  represents the residual error. When squared, the loadings represent the amount of common variance the manifests share with each other vis-a-vis the common construct. Since the denominator in the above equation is equal to 1, the equation can be reduced to

$$\rho_x = \lambda_x^2$$

which is often referred to as the communality of  $x$ . As a rule of thumb, convergence is judged to be adequate when  $\rho_x$  is greater than 0.5 (ibid.).<sup>12</sup> When this condition has been met, the variance shared by the manifest indicator (i.e.  $\lambda^2$ ) with its construct exceeds the error variance of the manifest. Since the square root of 0.5 is 0.707 it follows that for convergence to be judged adequate, the factor loadings (i.e.  $\lambda$ 's) should be .7 or more.

Table 5.18 presents the factor loadings appearing in the measurement model. Five manifest variables do not meet the criteria set out above. This is not unusual in exploratory research where newly developed scales are utilized, however. For example, in a recent study by Barclay, Higgins and Thompson (1995) 10 of 21 scale items were "substandard" when compared to the current criteria. Several factors can contribute to low item loadings. Among them are (1) an item may simply be unreliable, (2) a low loading may result from a methods factor, where differing methods of data collection account for more of the item's shared variance than does its communality with the construct, and (3) the construct to which the indicator is linked may be multidimensional (ibid.).

When low loadings are encountered the researcher is faced with the task of deciding whether or not to revise the scales by dropping items in order to improve reliability. The first problematic manifest, MV2 (Intensity Score), is associated with the exogenous construct Vision Complexity (LV1) and has a loading of .503. In deciding on

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<sup>12</sup> Not all researchers agree here. Falk and Miller (1992), for example, recommend that loadings be  $\geq .55$ , which is considerably more liberal than the standard adopted.

the appropriate action to take it is necessary to consider the source of the problem. Multicollinearity exists when the predictor variables are correlated among themselves (Neter et. al., 1996). Since multicollinearity can contribute to low reliabilities the loading of MV2 on its associated construct was compared to its loadings on the other (predictor) latent variables in the model. The results are located in Table 5.19. The highest observed loading of MV2 is that observed on its associated construct, which is more than twice as great as any of loadings observed on the other constructs. A second check for multicollinearity consisted of comparing the correlations between MV2 and the other individual manifests associated with the same construct with the correlations between MV2 and all other individual manifests in the model. Although the results are not presented here, it was found that none of the correlations between MV2 and manifests associated with other constructs exceeded those between MV2 and the other manifests associated with Vision Complexity, except for one instance where the correlation between MV2 and MV19 (Vision Attainment) was marginally greater in absolute value. Overall there was little support for the hypothesis that multicollinearity contributed to the low loading.

Table 5.18  
Measurement Model: Factor Pattern Matrix  
(n=48)

	LV1 $\xi_1$	LV2 $\xi_2$	LV3 $\xi_3$	LV4 $\xi_4$	LV5 $\eta_1$	LV6 $\eta_2$	LV7 $\eta_3$
MV1	.710						
MV2	.503						
MV3	.937						
MV4		.974					
MV5		.978					
MV6			.923				
MV7			.926				
MV8				.877			
MV9				.795			
MV10					1.000		
MV11						.927	
MV12						.910	
MV13						.545	
MV14						.912	
MV15						.901	
MV16							.821
MV17							.662
MV18							.640
MV19							-.420

$\xi$  denotes an exogenous variable  
 $\eta$  denotes an endogenous variable  
 LV and MV labels are listed in Table 4.8, p. 237.

Table 5.19  
Loadings of Problem Manifests on All Latent Variables\*

	LV1	LV2	LV3	LV4	LV5	LV6	LV7
<b>MV2</b>	<b>.503</b>	.084	.200	-.091	-.012	-.039	.077
<b>MV13</b>	-.082	.009	-.102	.261	.041	<b>.545</b>	.081
<b>MV17</b>	-.039	.215	-.072	-.016	-.058	.310	<b>.662</b>
<b>MV18</b>	-.010	.169	-.117	-.040	.008	.156	<b>.640</b>
<b>MV19</b>	-.335	-.576	-.160	-.066	-.278	-.129	<b>-.420</b>

\* From LV Loading Structure Matrix  
LV and MV labels are listed in Table 4.8, p. 237.

A second potential explanation for the observed low loading is that the construct Vision Complexity may be multidimensional, thus violating the assumption of unidimensionality. As a check, a principal components analysis was undertaken in order to test whether the three manifests associated with Vision Complexity converged on a single construct. Principal components analysis forms  $p$  linear transformations (principal components) of a set of  $p$  variables such that the linear transformations are uncorrelated and each successive linear combination explains a progressively smaller portion of the total variance (Dunteman, 1989). In the case of the manifests comprising Vision Complexity, the principal components analysis extracted only one factor. Thus there was little support for the contention that multidimensionality contributed to the low loading of MV2.

The foregoing analysis, by a process of elimination, suggests that the most likely explanation for the weak loading is measurement error. Dropping this variable would likely result in improved reliability, but one still needs to consider whether the the information gained by reducing the amount of measurement error exceeds the information lost by eliminating this variable (Loehlin, 1992). Sullivan and Feldman (1979) and many others have strongly maintained the superiority of three indicators over two. With only two indicators, nonrandom error cannot be pinpointed but often can be located when at least some of the constructs have more than two indicators (ibid.). Since Vision Complexity was

the only exogenous construct in the measurement model to possess more than two indicators, it was decided to retain Intensity Score as a manifest indicator.

The second manifest to exhibit an unsatisfactory loading (.545) was MV13, the Occupational Status Index. This manifest is associated with the endogenous construct Support Strength (LV6). From Table 5.19 there is little support for multicollinearity as a contributing factor to the weak loading. Additional checking of correlations between all manifests revealed that, without exception, the manifests associated with Support Strength were more highly correlated with MV 13 than were all other individual manifests. A principal components analysis of the five manifests associated with Support Strength was then conducted in order to check for multidimensionality. Once again the analysis extracted only one factor, suggesting that multidimensionality was not a principal cause of the weak loading.

From the foregoing analysis it appears that measurement error is the main factor contributing to the low loading of MV13. The construct Support Strength is measured by a total of five indicators and arguably could afford to drop the problematic one in order to improve reliability. In Chapter 4, however, it was argued that there is considerable theoretical support for including this variable as an indicator of support strength. Moreover, the construct did not possess any other manifests similar to the Occupational Status Index which would have provided a proxy for social power. While it is recognized that there is a reasonable likelihood that the low loading observed is a result of multidimensionality which could be dealt with by creating a new construct (e.g. "Support Power"), the new construct would be associated with only one manifest indicator and thus require the assumption that the construct has been perfectly measured. Given the foregoing arguments, it was apparent that deleting the indicator entirely would result in considerable information loss which had been shown to be theoretically relevant, and splitting the construct into two constructs would result in a measurement situation less



desirable than the current one. Accordingly, it was decided to retain the Occupational Status Index as an indicator of Support Strength.

The final three indicators exhibiting low loadings (MV17, MV18, MV19) were all associated with the endogenous variable "Performance." Of these, MV19 (Vision Attainment) clearly displayed the poorest performance, with a loading of -.420. This value was not only the weakest of all loading values reported in the measurement model, but also displayed a sign reversal when compared to other manifests loading on the same construct. Such a disparate value could be expected to influence the loadings of the other manifests to a considerable degree and may partially explain the low loadings of the other manifests associated with the same construct.

On reviewing Table 5.19, it was found that all three indicators had the highest loadings on their associated construct. MV19, however, did show a moderate correlation (-.335) with LV1. When the correlation matrix for all manifests was checked it was further found that MV 17 and 18 both exhibited the highest correlations with other manifests associated with Performance. In contrast, MV19 was correlated more highly with five indicators associated with other constructs than it was with the Performance-related indicator with which it had the strongest correlation.

Once again, it is quite possible that the widely divergent loading of Vision Attainment may be attributable to multidimensionality. A principal components analysis of the four manifests associated with Performance was therefore undertaken. Two factors emerged, with MV16, MV17 and MV18 loading on the first component and MV19 on the second component. These factors accounted for 80.3% of the observed variance. The rotated factor matrix is presented in Table 5.20. These results suggest a likelihood that multidimensionality is indeed contributing to the poor loading observed for MV19.

Table 5.20  
Rotated Factor Matrix: Performance Manifests

	<u>FACTOR 1</u>	<u>FACTOR 2</u>
V16	.863	-.148
V17	.846	.250
V18	.826	.104
V19	.062	.984

Variable labels are listed in Table 4.8, p. 237.

When confronted with multidimensionality the researcher should choose between splitting the construct or dropping the problematic item(s) (Barclay, Higgins and Thompson, 1995). In this case splitting the construct would have entailed creating an endogenous construct with only one indicator — an undesirable situation at best, and considered unacceptable for a performance-related variable, particularly given the untested nature of the newly-developed measure. It is also acknowledged that the Vision Attainment measure is problematic because of insufficient independence between it and the measures of the vision-related predictor constructs (particularly Vision Reach). Although this is a less-than-desireable situation one might have argued that, given adequate convergence with the other manifests, Vision Attainment would not have been in a position to unduly influence the Performance construct and consequently the information concerning vision attainment gained by retaining it might outweigh the weaknesses associated with it. As a single indicator, however, Vision Attainment is clearly unacceptable due to its lack of independence. In view of the foregoing arguments it was decided to eliminate Vision Attainment (MV19) as an indicator of the Performance.

The abandonment of Vision Attainment as a measure of performance is viewed as an important loss due to its relevance to the research model. It does, however, serve to highlight the complexity and multidimensional nature of the performance construct and the difficulty associated with developing valid measures of organizational performance — a subject of growing debate in the literature (see, for example, Murphy, Trailer and Hill, 1996). It can be noted that, of the three remaining manifest indicators of performance,

two are objective and one is subjective. Fortunately, the subjective index indicator (MV18) still contains information concerning five distinct dimensions of performance.

### **Revisions to the Measurement Model**

On reviewing the single item reliabilities of the manifests it was found that five manifests exhibited loadings that were less than satisfactory. These low loadings serve to weaken the convergent validity of three of the constructs in the model. Arguments were made to retain the problematic items associated with two of the constructs. It was, however, decided to drop MV19, Vision Attainment, as an indicator of the construct Performance in an effort to improve the overall measurement model.

After eliminating MV19, the revised model contains 18 manifest variables. The construct Performance now has three indicators as opposed to the four which it possessed in the original model. The next step in the analysis involves evaluating the revised measurement model. It is important to note that all subsequent discussion will pertain to the revised model in which the Performance construct is measured by only three indicators.<sup>13</sup>

### **Convergent Validity of the Revised Measurement Model**

#### Single Item Reliability

Once again, the evaluation of the convergent validity of the measurement model begins with an examination of single item reliability. Table 5.21 displays the factor loadings associated with the revised measurement model. As expected, MV2 and MV13

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<sup>13</sup> This applies to both the Findings section and the Conclusions section.

still display low loadings but there was a substantial improvement in the loadings of the manifests associated with the construct Performance. All three remaining manifest indicators of Performance now display loadings which can be judged satisfactory.

Overall, 16 of the 18 manifest indicators meet the guideline of  $\lambda \geq .70$ . If the object of the study were to refine measurement scales, these results would suggest that further work is warranted. On the other hand, given the exploratory nature of the research and the fact that most of the indicators were newly developed for the current study, the results can be considered quite satisfactory.

Table 5.21  
Revised Measurement Model: Factor Pattern Matrix  
(n=48)

	LV1	LV2	LV3	LV4	LV5	LV6	LV7
MV1	.704						
MV2	.496						
MV3	.939						
MV4		.976					
MV5		.976					
MV6			.923				
MV7			.926				
MV8				.868			
MV9				.806			
MV10					1.000		
MV11						.922	
MV12						.909	
MV13						.562	
MV14						.910	
MV15						.904	
MV16							.866
MV17							.888
MV18							.775

LV and MV labels are listed in Table 4.8, p. 237.

### Internal Consistency

The second reliability measure to be considered in evaluating the measurement model is internal consistency, sometimes referred to as construct reliability. The formulation, offered by Fornell and Larcker (1981), is an extension of individual item reliability in that it includes all of the manifests associated with a construct. It is calculated

by dividing the sum of the individual squared loadings by the sum of the individual squared loadings plus the error terms and can be expressed as

$$\rho_{\xi} = \frac{\left( \sum_{i=1}^m \lambda_{xi} \right)^2}{\left( \sum_{i=1}^m \lambda_{xi} \right)^2 + \sum_{i=1}^m Var(\epsilon_i)}$$

where  $x_1 \dots x_m$  are the manifests associated with a construct,  $\xi$

This measure of internal consistency is similar to Cronbach's alpha except Cronbach's measure assumes that each indicator of a construct contributes equally whereas Fornell and Larcker's measure uses the item loadings estimated within the structural model. Unlike Cronbach's measure,  $\rho_{\xi}$  is not influenced by the number of indicators. Adequate reliability is achieved when  $\rho_{\xi}$  is greater than 0.50.

Table 5.22 displays the internal consistency of each scale. Although Cronbach's alpha was not utilized due to the weaknesses cited above, in view of its familiarity it is also presented for comparative purposes. All of the constructs are associated with internal consistency values greater than 0.50, indicating that reliability is adequate.

Table 5.22  
Internal Consistency

	<u>Internal Consistency</u>	<u>Cronbach's Alpha (Standardized)</u>
LV1	.608	.736
LV2	.954	.976
LV3	.864	.925
LV4	.737	.838
LV5	n/a	n/a
LV6	.755	.853
LV7	.746	.844

LV labels are listed in Table 4.8, p. 237.

### Average Variance Extracted

The final indicator of convergent validity, average variance extracted, has been proposed by Fornell and Larcker (1981) as a more conservative test of convergent validity. It measures the amount of variance captured by the construct in relation to the amount of variance attributable to measurement error, and can be expressed as

$$\rho_{AVG} = \frac{\sum_{i=1}^m \lambda_{x_i}^2}{\sum_{i=1}^m \lambda_{x_i}^2 + \sum_{i=1}^m Var(\varepsilon_i)}$$

which can be reduced to

$$\rho_{AVG} = \frac{\sum_{i=1}^m \lambda_{x_i}^2}{m}$$

According to Fornell and Larcker, this measure is more conservative than the internal consistency of a construct since the researcher may conclude, on the basis of the latter alone, that the convergent validity of the construct is adequate even though more than 50% of the variance is attributable to error. The convergent validity of the construct is judged to be adequate when  $\rho_{AVG}$  is  $\geq 0.50$ . When this condition has been met the variance captured by the construct exceeds the variance due to measurement error. The average variance extracted for each construct is reported in Table 5.23. Since the average variance extracted exceeds 0.50 for all constructs the convergent validity of the model is considered adequate.

Table 5.23  
Average Variance Extracted

	<u>LV1</u>	<u>LV2</u>	<u>LV3</u>	<u>LV4</u>	<u>LV5</u>	<u>LV6</u>	<u>LV7</u>
$\rho_{AVG}$	.541	.953	.855	.702	n/a	.726	.713

LV labels are listed in Table 4.8, p. 237.

## Discriminant Validity

Discriminant validity refers to the extent to which a given construct differs from other constructs. In evaluating the discriminant validity of the measurement model, the analysis is once again conducted at both the indicator level and the construct level. With respect to a criterion at the measurement, or indicator, level, Barclay, Higgins and Thompson (1995) have suggested that no manifest should load more highly on another construct than it does on the construct it intends to measure. Table 5.24 presents the Factor Structure matrix generated by PLS. Values inside the boxes represent the loadings for the hypothesized relationships between the construct and its measures. Values outside the boxes represent cross-loadings (i.e. loadings associated with unhypothesized relationships between indicators and constructs). Analysis of the table values reveals discriminant validity to be satisfactory according to the guideline described above.

Table 5.24  
Factor Structure Matrix: Loadings and Cross-Loadings

	<u>LV1</u>	<u>LV2</u>	<u>LV3</u>	<u>LV4</u>	<u>LV5</u>	<u>LV6</u>	<u>LV7</u>
MV1	.704	.276	.211	.078	.179	.131	-.063
MV2	.496	.082	.200	-.092	-.012	-.040	-.176
MV3	.939	-.058	.118	.054	.243	.231	.020
MV4	-.027	.976	-.224	.239	.254	.370	.322
MV5	.157	.976	-.179	.239	.339	.405	.277
MV6	.149	-.227	.923	-.241	-.307	-.256	-.094
MV7	.151	-.155	.926	-.160	-.314	-.196	.025
MV8	.264	.252	-.035	.868	.336	.531	.185
MV9	-.147	.150	-.357	.806	.420	.473	-.110
MV10	.277	.303	-.336	.446	1.000	.484	.022
MV11	.236	.488	-.168	.442	.431	.922	.485
MV12	.258	.370	-.177	.579	.413	.909	.201
MV13	-.081	.009	-.102	.265	.041	.562	.207
MV14	.258	.341	-.263	.513	.392	.910	.361
MV15	.235	.317	-.291	.680	.594	.904	.214
MV16	.071	.366	.062	.181	.104	.369	.866
MV17	-.037	.215	-.072	-.021	-.058	.311	.888
MV18	-.008	.170	-.117	-.042	.008	.158	.775

LV and MV labels are listed in Table 4.8, p. 237.

Fornell, Tellis and Zinkhan (1982) have proposed that discriminant validity is adequate at the construct level when the variance shared between a construct and any other construct in the model is less than the variance that construct shares with its measures. The variance shared by any two constructs is obtained by squaring the correlation between the two constructs. The variance shared between a construct and its measures corresponds to average variance extracted, which was introduced earlier. In the current study discriminant validity was assessed by comparing the square root of the average variance extracted for a given construct with the correlations between that construct and all other constructs. Table 5.25 shows the correlation matrix for the constructs. The diagonal elements (normally having the value 1.00) have been replaced by the square roots of the average variance extracted. For discriminant validity to be judged adequate, the diagonal elements should be greater than the off-diagonal elements in the corresponding rows and columns. It can be seen that discriminant validity is satisfactory in the case of all constructs.

Table 5.25  
Correlations Between Constructs

	LV1	LV2	LV3	LV4	LV5	LV6	LV7
LV1	<b><u>.736</u></b>						
LV2	.067	<b><u>.976</u></b>					
LV3	.162	-.206	<b><u>.925</u></b>				
LV4	.091	.245	-.217	<b><u>.838</u></b>			
LV5	.277	.303	-.336	.446	<b><u>1.000</u></b>		
LV6	.249	.397	-.244	.601	.484	<b><u>.853</u></b>	
LV7	.012	.307	-.037	.060	.022	.350	<b><u>.844</u></b>

LV labels are listed in Table 4.8, p. 237.

### Summary

Several measures were utilized to evaluate the convergent validity and discriminant validity of the measurement model. It was found that the individual item reliability of the



measurement model as originally hypothesized was somewhat weak, with five of the 19 manifests exhibiting low loadings. Additional analyses were undertaken to investigate the source of these low loadings and based on these findings a decision was made to drop one of the problematic indicators (Vision Attainment) associated with the construct Performance. Subsequent analysis indicated considerable improvement in the revised measurement model, which now consists of 18 manifest indicators.

Two manifest indicators in the revised model still exhibit low loadings. Thus, the single item reliability of the measurement model must be considered fair rather than good, and suggests that future research is needed to improve the measurement model. The revised model was satisfactory in terms of internal consistency, convergent validity and discriminant validity. In sum, assessment of the measurement model suggests room for improvement, but given the context of the current research, which is exploratory in nature and includes a considerable number of newly-developed measures, the overall conclusion must be that the measurement model is reasonably good.<sup>14</sup>

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<sup>14</sup> As Loehlin (1992) has noted, there is no mandate in exploratory work that *all* (emphasis in original) measurement problems must be resolved completely before proceeding to the evaluation of the structural model.

#### **5.4.4 Structural Model**

##### **Introduction**

The structural model comprises the hypothesized relationships between the latent constructs in the research model. Nine hypotheses (or paths) concerning relations between constructs were postulated in Chapter Three. Given the limitations of PLS and the cross-sectional nature of the research design, the focus of the analysis must be restricted to the examination of covariation rather than the existence of causal relations. Covariation is a necessary, but insufficient condition for causality.<sup>1</sup>

Two validity issues will be addressed in establishing the existence of covariation, or relationships, between constructs. The first, and primary concern at this stage of the research model (Wyse, 1992) is statistical conclusion validity, which Cook and Campbell describe as the validity of drawing conclusions concerning the existence of covariation on the basis of statistical evidence (1979). The second validity-related issue to be examined is that of nomological validity, which Fornell, Tellis and Zinkhan (1982) refer to as "the degree to which predictions of constructs in the model are verified" (p.2). The next two sections will examine and assess the structural model within the context of these two validity-related concerns. A third section will evaluate model fit.

##### **Statistical Conclusion Validity**

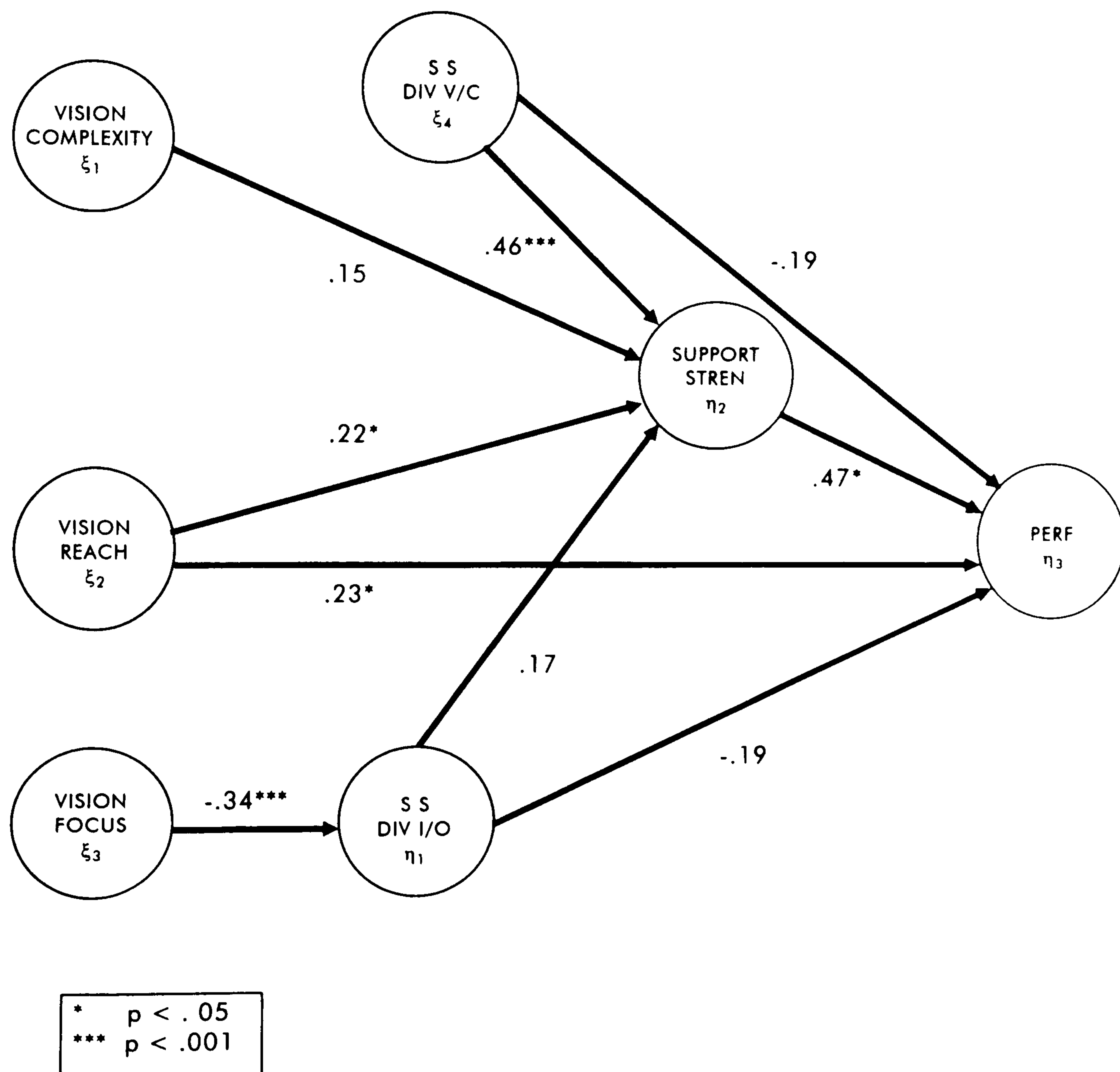
Statistical conclusion validity was assessed by invoking a test of the null hypothesis for each of the path coefficients associated with hypothesized relationships between constructs. The path coefficients obtained by the current study are presented in Figure

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<sup>1</sup> The other two conditions for causality are temporal ordering and isolation (i.e. the elimination of other possible causal factors) (Asher, 1983; Bollen, 1989).

5.1. The fact that three of these coefficients are negative is of considerable interest but discussion of these phenomena will be deferred until a later section. General discussion and interpretation of the path coefficients will be presented following an analysis of the total, direct and indirect effects.

Figure 5.1  
Path Coefficients



As can be seen in Figure 5.1 the path coefficients range from -.34 to .47. In view of the distribution-free nature of PLS, traditional *t*-tests could not be used to test the significance of the parameter estimates obtained. Instead, the jackknife procedure was

employed. Jackknifing, originally developed by Quenouille (1949), has been shown to be a useful technique for reducing bias in estimates of statistics based on small sample sizes and for robust interval estimation (Miller, 1974; Mooney and Duval, 1993). In the current study the jackknife was adopted because it enables one to apply significance tests in situations where the usual assumptions for these tests are violated (i.e. where predictors are not multivariate normal) (Fenwick, 1979).

Jackknifing examines the variability of a statistic by examining the variability within the sample. The essence of the jackknife procedure is to systematically drop subsets (of equal size) of the data one at a time and then re-estimate the parameter (e.g. path coefficients) based on the remaining subsample data. The subset is then replaced and the next subset is dropped, the parameter re-estimated (using PLS), and so on. The number of cases to be dropped in each "run" of the data is arbitrary but is often set at  $h=1$ , where  $h$  is equal to the number of cases in the subset (i.e. the number of cases dropped). Although subset sizes other than one may be useful for complex resampling situations,  $h=1$  is generally considered the best form of the jackknife (Miller, 1974) and results in the number of subsamples being equal to the number of elements in the sample.

The use of jackknifing in robust significance testing entails the calculation of "pseudovalues,"  $P(\hat{p})$ , by applying the jackknife formula for each  $\hat{p}$ :

$$P(\hat{p}_i) = N_{\hat{p}_{all}} - (N - 1)\hat{p}_i$$

where  $N$  = the number of subsamples  
 $\hat{p}_i$  = the parameter estimate based on the  $i$ th subsample, and  
 $\hat{p}_{all}$  = the original parameter estimate based on the entire sample

These pseudovalues have approximate independent normal distributions for linear estimators such as means, product-moment correlations and linear regression coefficients (Miller, 1974; Mooney and Duval, 1993).

The jackknife estimator,  $J(\hat{p})$ , is the mean of the pseudovalues and can be regarded as a sample mean. Similarly, the standard deviation of the pseudovalues,  $S_p$ , can be regarded as a sample standard deviation, giving the following  $t$ -statistic (Fenwick 1981):

$$t_{jack} = \frac{J(\hat{p}) - p}{S_p / \sqrt{N}}$$

This robust jackknifed  $t$ -statistic has  $N-1$  degrees of freedom and can be used to test the value of  $J(\hat{p})$  in relation to some other parameter level,  $p$ . In the current study the path coefficients were tested by setting  $p=0$  to correspond to the null hypothesis. The jackknife procedure was performed using software developed by Fornell and Barclay (1983).<sup>2</sup> Forty-eight subsamples were utilized, with  $h=1$ . Table 5.26 presents the  $t$ -values obtained.

Table 5.26  
Jackknifed  $t$ -values for Path Coefficients

Path		Path Coefficient	$t$ -value	Signif.*
Antecedent Construct	Endogenous Construct	$\beta$		$\alpha$
Vision Focus	Support System Diversity: I/O	-.34	4.779	.001
Vision Complexity	Support Strength	.15	0.455	n.s.
Vision Reach	Support Strength	.22	2.360	.05
Support System Diversity: V/C	Support Strength	.46	4.588	.001
Support System Diversity: I/O	Support Strength	.17	1.514	n.s.
Vision Reach	Performance	.23	2.390	.05
Support System Diversity: V/C	Performance	-.19	0.891	n.s.
Support System Diversity: I/O	Performance	-.19	1.139	n.s.
Support Strength	Performance	.47	2.055	.05

\* two-tailed test

\* n.s. denotes not significant

In cases where the path coefficient is statistically significant, the null hypothesis that the path coefficient in the population is zero must be rejected on the grounds that, if the null hypothesis is true, the odds of obtaining a coefficient with a magnitude this large or

<sup>2</sup> Calculations of  $t_{jack}$  were done using Microsoft Excel 5.0 software. Spreadsheet algorithms were validated by replicating the results of a published example (Mooney and Duval, 1993, p. 26) and by achieving convergence of results between the Fenwick formulation used here and the alternate formulation given by Mooney and Duval (ibid.).

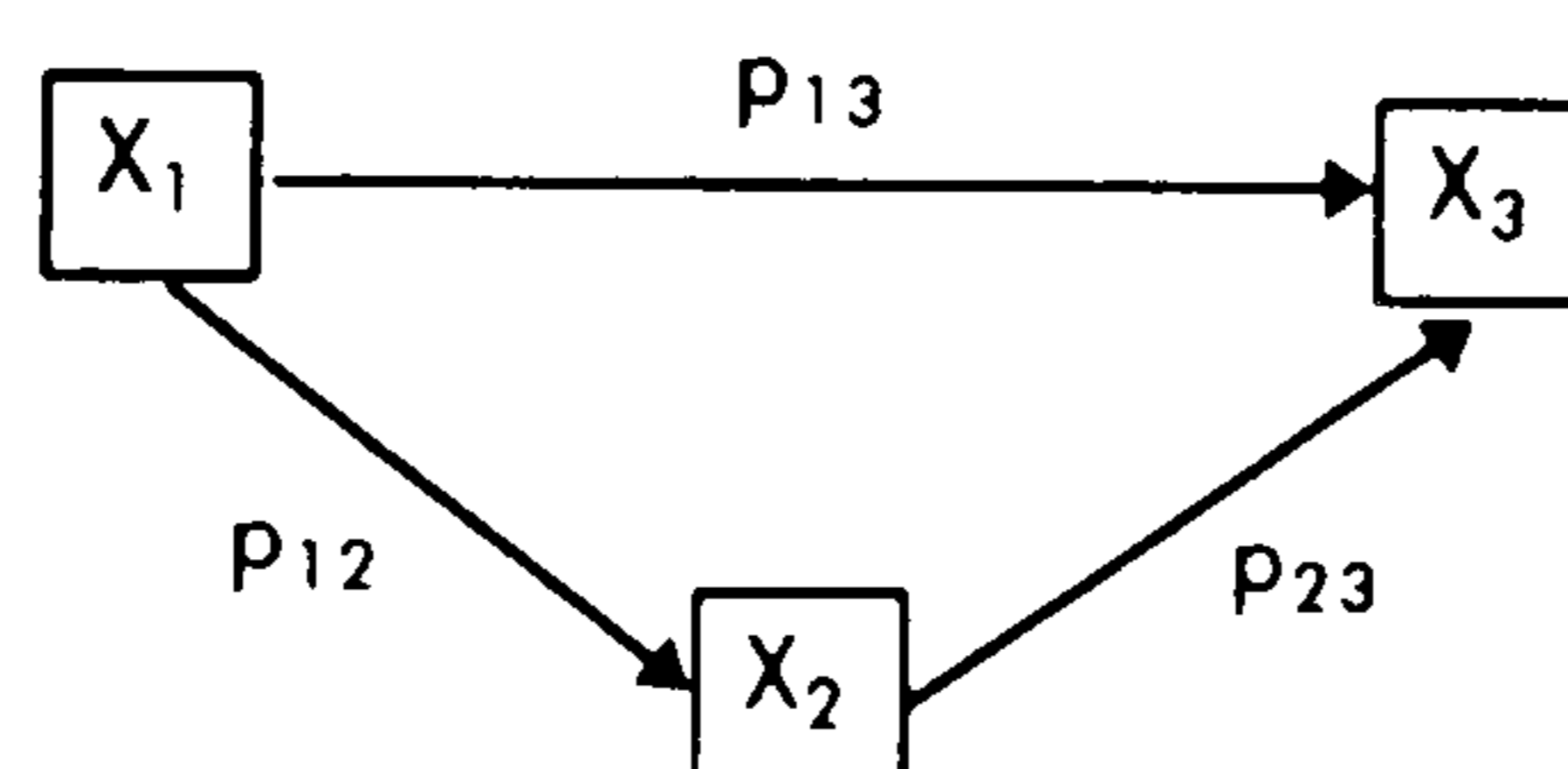
larger in a particular sample are only 1 in 20, and therefore too small to constitute a satisfactory explanation for the result. From Table 5.26 five of the nine path coefficients are statistically significant at  $\alpha = .05$  or less (utilizing two-tailed tests), providing support for five of the nine hypotheses outlined in Chapter Three (although in one case the direction of the relationship is opposite to what had been hypothesized; more will be said about this later). Of the paths leading from the vision-related exogenous constructs, statistical support was found for all hypotheses concerning Vision Content, but the single path coefficient associated with Vision Structure (Vision Complexity) was not statistically significant. Of the four paths leading from the two Support System Diversity constructs, only one path coefficient achieved statistical significance — this was the path leading from Value- versus Convenience-based Support System Diversity to Support Strength. The single path coefficient associated with the path leading from Support Strength to Performance was also statistically significant. Finally, it can be noted that all three endogenous constructs are associated with at least one statistically significant predictor.

#### Interpretation of Path Coefficients

Path coefficients in recursive models (i.e. models which do not employ feedback loops) are standardized regression coefficients and therefore may be interpreted as the fraction by which the standard deviation of the dependent variable is changed in response to a change of one standard deviation in the predictor variable, with other predictor variables held constant (Pedhazur, 1982; Asher, 1983). Asher (ibid.) has cautioned that to consider a variable “directly responsible” for accounting for change may be misleading in some cases due to the potential for indirect effects and situations where multicollinearity exists. As a consequence, Asher recommends that the most useful interpretation of path coefficients involves a comparison of the relative magnitudes of the coefficients and the contention that a specified change in one variable produces a specified change in the other.

The values of the path coefficients reported above represent estimates of the direct effects of predictor variables on the dependent variables they attempt to explain. The research model, however, also incorporates indirect relationships where the change in the value of a dependent variable may depend not only on the direct influence of a predictor variable, but also on the indirect influence of that predictor acting on an endogenous (mediator) variable which itself serves as a predictor of the dependent variable. A hypothetical example of an indirect relationship is diagrammed in Figure 5.2.

Figure 5.2  
Direct and Indirect Effects



In this example the path coefficient  $p_{13}$  represents the direct effect of  $X_1$  on  $X_3$ . The indirect effect of  $X_1$  on  $X_3$  is represented by the compound path  $X_1$  to  $X_2$  to  $X_3$  and the magnitude of this effect is given by the product of the coefficients  $p_{12}$  and  $p_{23}$ .

One of the main advantages of path analysis over regression is the ability to examine indirect and total effects in addition to direct effects. PLS includes in its output estimates of both direct effects and total effects, thereby allowing the easy calculation of an indirect effect by subtracting the direct effect from the total effect.<sup>3</sup> Direct, indirect and total effects are summarized in Table 5.27.

The research model included only one path leading to the endogenous variable Support System Diversity: Insiders versus Outsiders ( $\eta_1$ ). The results suggest that the sole predictor of  $\eta_1$ , Vision Focus ( $\xi_3$ ), is an important one as evidenced by the magnitude of the

<sup>3</sup> Total effects reported by PLS are based solely on the correlations associated with hypothesized relations and do not include spurious or non-interpretable effects.

path coefficient (-.34), which was significant at  $\alpha=.001$ . This was the third largest effect size in the structural model. (The path coefficient also indicates that the relationship is negative, which is not consistent with the original hypothesis.) There are no indirect effects on  $\eta_1$ . Interestingly,  $\xi_3$  also has a negative, though weaker, indirect effect on Support Strength ( $\eta_2$ ), resulting in a slight, positive indirect effect on the dependent variable Performance ( $\eta_3$ ).

Table 5.27  
Direct, Indirect and Total Effects Sizes

Relation	Direct Effect	Indirect Effect	Total Effect
$\xi_3 \rightarrow \eta_1$	-.34	0	-.34
$\xi_1 \rightarrow \eta_2$	.15	0	.15
$\xi_2 \rightarrow \eta_2$	.22	0	.22
$\xi_3 \rightarrow \eta_2$	0	-.06	-.06
$\xi_4 \rightarrow \eta_2$	.46	0	.46
$\eta_1 \rightarrow \eta_2$	.17	0	.17
$\xi_1 \rightarrow \eta_3$	0	.07	.07
$\xi_2 \rightarrow \eta_3$	.23	.10	.33
$\xi_3 \rightarrow \eta_3$	0	.04	.04
$\xi_4 \rightarrow \eta_3$	-.19	.21	.02
$\eta_1 \rightarrow \eta_3$	-.19	.08	-.11
$\eta_2 \rightarrow \eta_3$	.47	0	.47

LV labels are listed in Table 4.8, p. 237.

There are four direct effects and one indirect effect having impact on the endogenous variable Support Strength ( $\eta_2$ ). The most important predictor of Support Strength is Value versus Convenience-Based Support System Diversity ( $\xi_4$ ); the magnitude of this coefficient is .46, which is more than twice as great as the next most important predictor, Vision Reach ( $\xi_2$ ), with a path coefficient of .22. Both coefficients are statistically significant. Of moderate importance as predictors of Support Strength are Insider/Outsider Support System Diversity ( $\gamma=.17$ ) and Vision Complexity ( $\gamma=.15$ ); neither of these coefficients was found to be statistically significant, however. Finally, the indirect effect of Vision Focus on Support Strength was slight, and negative ( $\gamma=-.06$ ).



Two variables are particularly important in predicting the dependent variable Performance ( $\eta_3$ ); in both cases the path coefficients were statistically significant. The first variable is Support Strength, which operates on Performance solely through its direct effect ( $\gamma=.47$ ). The second most important predictor of Performance is Vision Reach, with a direct effect of .23 and a total effect of .33. Both Support System diversity-related constructs ( $\xi_4$ ,  $\eta_1$ ) have moderate, negative and statistically insignificant direct effects but positive indirect effects. In the case of Value-versus Convenience-based diversity, the indirect effect is also quite substantial (.21), exceeding even its direct effect and resulting in a slightly positive total effect. The indirect effects of Vision Complexity ( $\xi_1$ ) and Vision Focus ( $\xi_3$ ) on Performance were moderately weak.

Although it appears that a formal test of the significance of indirect effects has not been developed, Cohen and Cohen (1983) suggest that a sufficient condition would be achieved when the effects being multiplied to produce the indirect effect are statistically significant. Applying this criterion, there are two indirect effects that can be considered statistically significant. The first is the compound path leading from Vision Reach (through Support Strength) to Performance. The second significant indirect effect is the compound path from Value- versus Convenience-Based Support System Diversity (again through Support Strength) to Performance.

The consideration of direct, indirect and total effects was also used to assess the relative importance of each explanatory variable in the overall structural model.<sup>4</sup> This was done by summing the absolute values of all direct and indirect effects associated with a particular variable and comparing the totals. Table 5.28 presents the results of the analysis. Two conclusions can be drawn from the results. First, the relative importance of the individual constructs comprising the model is apparent and does not require

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<sup>4</sup> The author is unaware of prior studies which have employed such a strategy; nevertheless, the information derived from this analysis was considered useful in assessing the structural model, and particularly so in the context of an exploratory study.

elaboration. Second, it can be safely said that none of the constructs can be judged to be trivial in terms of their contribution to the model.

Table 5.28  
Relative Magnitude of Explanatory Variable Effects  
in Overall Model

<u>LV</u>	<u>Direct Effects*</u>	<u>Indirect Effects*</u>	<u>Total Effect*</u>	<u>Rank (Importance)</u>
$\xi_1$	.15	.07	.22	6
$\xi_2$	.22 + .23	.10	.55	2
$\xi_3$	.34	.06 + .04	.44	4
$\xi_4$	.46 + .19	.21	.86	1
$\eta_1$	.17 + .19	.08	.44	4
$\eta_2$	.47	0	.47	3

\* absolute value  
LV labels are listed in Table 4.8, p. 237.

### Model Trimming

When some path coefficients are found to be statistically non-significant, researchers sometimes proceed to delete the non-significant paths ("theory trimming") in an attempt to achieve a more "satisfactory" or parsimonious model. Considerable caution must be exercised here, however. Statistical significance is a function of the power of the test, which is in turn a function of sample size. Given a sufficiently large sample, for example, even meaningless path coefficients may be found to be statistically significant. In reaction, some researchers have invoked the additional criterion of "meaningfulness" which is usually set (somewhat arbitrarily) by requiring the magnitude of a path coefficient to be retained in the model to be at least .05 (Pedhazur, 1982; Billings and Wroten, 1984).

In the current study all of the hypothesized direct effects easily exceed the criterion for meaningfulness. Not all of the effects, however, are statistically significant, resulting in a somewhat ambiguous situation. It was ultimately decided not to delete non-significant paths, and this decision was not a difficult one in view of the circumstances. First, it was stated in an earlier section that when reflective indicators (which were chosen in the current

study to give preference to the measurement model) are used the estimates of the structural coefficients are biased downwards. Consequently, the estimates of effect size should be regarded as understated and conservative. Second, it must be emphasized that a failure to reject the null hypothesis does not prove the null hypothesis is correct, nor does it require one to accept the null hypothesis unless there is sufficient a priori reason to do so (Duncan, 1975). Finally, in the current study resource constraints dictated that the sample size be small; the statistical power of the significance test (i.e. its ability to correctly reject a null hypothesis) is therefore low. Where sample size is small Loehlin (1992) specifically recommends that non-significant paths that were theoretically justified in the first place be retained in exploratory models.

#### Negative Path Coefficients

As noted earlier, three of the coefficients associated with hypothesized paths between constructs are negative. These results are inconsistent with the theoretical arguments made in support of the research model and warrant further consideration. A variety of factors can give rise to negative coefficients. Among the most important are multicollinearity, suppressor effects, redundancy, and random variation (Bollen, 1989; Falk and Miller, 1992). The first three sources can occur whenever there are several paths leading to an endogenous variable. In addition to the foregoing explanations, of course, it may be that the true relationship between the constructs is indeed negative. Since understanding the cause of a negative coefficient is crucial to the proper interpretation of that variable's effect in the model, the plausibility of these potential sources of explanation will now be explored.

One of the most common causes of coefficients with wrong signs is multicollinearity, which occurs when high correlations exist among the independent variables. Multicollinearity results in larger standard errors of the coefficients of the collinear variables; consequently, estimates based on other samples drawn from the same

population may be substantially different (Asher, 1983). Collinearity can be seen to pose a threat to establishing concomitant variation or association between variables, since it is difficult to estimate the unique effect of a variable if it always moves in conjunction with other variables in the model (Bollen, 1989). Table 5.29 presents the correlations among the exogenous variables in the model.

Table 5.29  
Intercorrelations Among Exogenous Constructs

		<u><math>\xi_1</math></u>	<u><math>\xi_2</math></u>	<u><math>\xi_3</math></u>	<u><math>\xi_4</math></u>
Vision Complexity	$\xi_1$	1.000			
Vision Reach	$\xi_2$	.067	1.000		
Support System Diversity: V/C	$\xi_3$	.162	-.206	1.000	
Support System Diversity: I/O	$\xi_4$	.091	.245	-.217	1.000

Although there is no automatic level where collinearity becomes a problem (Asher, 1983) most researchers agree that the degree of correlation between independent variables must be quite substantial. Hair et. al. (1992) suggest that multicollinearity may be a problem when correlations exceed .80 or .90. Asher observed that researchers generally set the level of concern at .70 or .80. By any of these rules of thumb, the correlations depicted in Table 5.29 do not indicate multicollinearity to be a problem in the current study, since the largest observed correlation is .245.

A second potential source of negative path coefficients is redundancy, which occurs when two or more constructs in the model contain the same information. Falk and Miller (1992) suggest that the path coefficients and the correlations between latent variables be checked for consistency, since inconsistency (i.e. one positive, one negative or vice versa) is indicative of the presence of redundancy, a suppressor effect or random variation. Table 5.30 summarizes the results of the analysis involving consistency of sign.

Table 5.30  
Consistency of Sign:  
LV Correlations & Path Coefficients

<u>Path</u>	<u>LV Correlation</u>	<u>Path Coefficient</u>
$\xi_3 \rightarrow \eta_1$	-	-
$\xi_1 \rightarrow \eta_2$	+	+
$\xi_2 \rightarrow \eta_2$	+	+
$\xi_4 \rightarrow \eta_2$	+	+
$\eta_1 \rightarrow \eta_2$	+	+
$\xi_2 \rightarrow \eta_3$	+	+
$\xi_4 \rightarrow \eta_3$	-	-
$\eta_1 \rightarrow \eta_3$	+	-
$\eta_2 \rightarrow \eta_3$	+	+

LV labels are listed in Table 4.8, p. 237.

The analysis summarized in Table 5.30 reveals only one instance of an inconsistency of sign — specifically, the path leading from  $\eta_1$  (Insider/Outsider Support System Diversity) to  $\eta_3$  (Performance). This suggests that redundancy, suppressor effects and random variation can be ruled out as potential causes of the negative coefficients associated with  $\xi_3$  (Vision Focus) and  $\xi_4$  (Value- versus Convenience-based Diversity).<sup>5</sup> These phenomena, though, still remain potential explanations of the negative coefficient associated with the path leading from  $\eta_1$  to  $\eta_3$ .

Redundancy can be investigated by systematically eliminating paths elsewhere in the model (Falk and Miller, 1992). If the elimination of a path results in a change in sign of the coefficient and does not reduce the amount of variation ( $R^2$ ) explained in the endogenous variable, the path can be considered redundant and the arrow eliminated. In order to investigate the negative paths leading from the diversity-related constructs to the dependent variable Performance the following paths were deleted in separate trials:

- a)  $\xi_4 \rightarrow \eta_3$
- b)  $\eta_1 \rightarrow \eta_3$
- c)  $\xi_4 \rightarrow \eta_3$  and  $\eta_1 \rightarrow \eta_3$
- d)  $\eta_1 \rightarrow \eta_2$

In all trials involving the elimination of only one path (i.e. trials a, b, d) the remaining path from a diversity-related construct to Performance was still negative. In all trials the

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<sup>5</sup> Redundancy can be ruled out automatically as a potential contributor to the negative path leading from Vision Focus because there are no other predictors of  $\eta_1$  (Insider/Outsider Support System Diversity).

variance explained in the endogenous variable was reduced. These results suggest redundancy is not causing the negative coefficient associated with  $\eta_1$ .

A third potential cause of negative path coefficients is termed a “suppressor effect,” which occurs when a predictor variable has been omitted from the research model. Such situations are common in structural equation models encompassing multiple constructs (Bollen, 1989; Falk and Miller, 1992). Suppressor effects make it difficult to infer causation because they violate the assumption of pseudo-isolation (i.e. the dependent variable is isolated from all influences except the predictor variable) (Bollen, 1989).

Although suppressor effects are common, the problems associated with suppressor effects are not easy to diagnose or resolve. In the current study, the literature review did not suggest other potential candidates as constructs for inclusion in a study where vision and support were the focus of the investigation. Nevertheless, it may be that reverse causation exists, whereby increases in Performance are accompanied particularly by increases in the proportion of insiders. A similar phenomenon surfaced during Phase Three of the research, where it was observed that established firms tended to include their management staff as key supporters. It remains difficult to infer, however, why, if the latter were true, reverse causation similarly would not be associated with Value- versus Convenience-based Diversity (where suppressor effects had been ruled out as a potential cause of the negative coefficient). Unfortunately, PLS is not equipped to deal with non-recursive models encompassing reverse causation. According to Falk and Miller, when a suppressor effect exists the correct sign interpretation is that given by the path coefficient.

Despite the fact that the results of the analysis of sign inconsistency recommended by Falk and Miller suggested that suppressor relations could be ruled out for the negative path leading from  $\xi_4$  to  $\eta_3$ , Bollen (1989) states that when the direct and indirect effects are of opposite signs but similar magnitudes, a suppressor effect may be present due to the

omission of an intervening variable.<sup>6</sup> From Table 5.27 it can be seen that  $\xi_4$  has a direct effect of  $-.19$  and an indirect effect of  $.21$  on  $\eta_3$ . Therefore, suppressor effects cannot be ruled out as also contributing to the negative path leading from  $\xi_4$ .

On reviewing the path coefficient estimates provided by PLS it is apparent that the paths leading from both diversity-related constructs to Performance are negative and of similar magnitudes. One is tempted to assume, therefore, that similar explanations would apply. Perhaps the most interesting aspect of the analysis thus far has been to show that even if suppressor effects are contributing to these results, the nature of these effects are likely different for each construct. It appears that the nature of the relationship between support system diversity and firm performance may be more complex than existing theory suggests.

According to Falk and Miller, a fourth potential cause of the negative path  $\eta_1 \rightarrow \eta_3$  is that the relationship between the variables is so close to zero that the difference in signs merely reflects random variation about zero. Although there appears to be no absolute threshold, the authors state that the correlations between latent variables should be small and close to zero for this explanation to hold true. In the current case the correlation between  $\eta_1$  and  $\eta_3$  is  $.022$ , which can be considered small and relatively close to zero. On the other hand, the magnitude of the path coefficient ( $-.19$ ) cannot be considered small, but is not statistically significant.<sup>7</sup> Overall, the situation is somewhat ambiguous but suggests that random variation cannot be ruled out as a potential cause.

Thus far the analysis has focused primarily on the negative paths associated with the two diversity-related constructs. It has been shown that suppressor effects cannot be ruled out as causing the negative paths of both variables. If suppressor are in fact

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<sup>6</sup> According to Bollen, this is a less serious situation than the omission of a variable that is the common cause of the explanatory and dependent variables.

<sup>7</sup> Falk and Miller do not discuss the implications of the path coefficient magnitude in assessing the potential for random variation.

responsible for the current findings, it has been argued that the nature of these effects are considerably more complex than current theory allows. Random variation is also a potential explanation of the negative path associated with  $\eta_1$ . Finally, it must be remembered that both path coefficients were statistically insignificant and thus may be a function of the sample characteristics.

It is also possible that the relationship between  $\xi_4$  and  $\eta_3$  is indeed negative. Unfortunately, the conditions of the current study and the limitations of PLS do not permit definitive conclusions concerning these various interpretations. Further investigation does appear warranted, but must occur in a study designed to explore these specific effects with greater precision. It can be noted that the finding of negative relationships between diversity and performance is indeed consistent with earlier empirical work (see the literature review concerning research on networks) even though the current study was intended to overcome methodological problems which could have contributed to earlier findings. Overall, the results suggest that exploratory research is sorely needed to refine the theory associated with diversity, which appears to be more complex than the theoretical approaches developed to date would suggest.

Although little mention of the negative coefficient associated with  $\xi_3$  (Vision Focus) was made during the foregoing analysis, it was shown that the four confounding factors reviewed could be ruled out as potential explanations. The coefficient associated with  $\xi_3$  is of considerable magnitude (-.34) and was found to be statistically significant ( $\alpha=.001$ ). In addition, the sign of the coefficient is consistent with the sign of the correlation between  $\xi_3$  and  $\eta_1$  (Insider/Outsider Diversity). In this case it appears that the correct interpretation is that the relationship between the variables is negative.

Explaining this counter-intuitive finding is not a simple task. It may be, for example, that early visions of start-up entrepreneurs which place equal emphasis on



internal and external dimensions of the firm are likely to be “spread too thinly” to be effective in marshalling a diverse base of support. If so, entrepreneurs may be better off developing visions that are more focused (the model does not indicate whether one particular area of focus may be better than the other). This finding is interesting in light of the results of an exploratory study by Filion (1991). Filion concluded that firms in which either the internal or external component was less developed tended to perform more poorly. In the current study balanced visions do have a slight positive indirect effect on performance but focused visions are associated with increases in Insider/Outsider Diversity, which in turn is associated with increased Support Strength. Compounding the problem of interpretation is the fact that  $\eta_1$  is measured with only one manifest indicator, thus requiring an assumption of zero measurement error (this problem is also active in the foregoing analysis concerning the path leading from  $\eta_1$  to  $\eta_3$ ). The current circumstances suggest that these results should be interpreted with caution until future research both develops better measures and replicates the results.

### Nomological Validity

Nomological validity, or the extent to which predictions of the constructs of the model are verified, is concerned with the explanatory power of the model. This can be assessed by examining the  $R^2$  (i.e. the squared multiple correlation coefficient) value for the endogenous constructs, since  $R^2$  indicates the amount of variance in the endogenous construct accounted for or predicted by the variance in the exogenous constructs. The  $R^2$  values for the endogenous constructs are reported in Table 5.31.

Table 5.31  
 $R^2$ : Endogenous Constructs

	Support Sys. Diversity: I/O $\eta_1$	Support Strength $\eta_2$	Performance $\eta_3$
$R^2$	.113	.482	.216

Falk and Miller (1992) recommend that  $R^2$  values be at least .10 in order to be judged adequate. By this criterion all of the  $R^2$  values indicate satisfactory nomological validity. Despite this, it can be seen that in the case of  $\eta_1$  the variance explained is relatively low. This is likely attributable to the presence of only one predictor in the model, pointing to a need for further theory development. In the case of  $\eta_2$  (Support Strength) the model performs well, accounting for nearly half of the observed variance. In the case of  $\eta_3$  (Firm Performance) the model can also be judged to perform quite well. Given the parsimony of the model and the large number of factors which can affect the performance of a firm, the fact that the model accounts for more than one-fifth of the variance in firm performance can be considered a successful outcome. In this respect the model compares favourably to other empirical studies designed to explain new venture performance.

#### **5.4.5 Model Fit**

Unlike LISREL, the object of PLS is not to achieve the best fit of the overall model, but rather the maximization of explained variance by minimization of the residuals. Consequently, traditional measures designed to evaluate goodness-of-fit in structural equation models, such as the likelihood chi-square statistic, are inappropriate. Nevertheless, Lohmöller (1989) provides some guidelines for assessing model fit in PLS. Specifically, Lohmöller suggests that four residual covariance matrices be examined in order to assess the fit of the outer (measurement) model, the inner (structural) model and the overall model. The examination of these residual covariance matrices is the subject of the remainder of this section. It is worthwhile noting during the evaluation that sample residuals are affected by sampling error and tend to be smaller in larger samples. When judging residuals in small samples such as the current one, we therefore should expect

larger residuals than when examining residuals in large samples, when the model is true in both samples (Bollen, 1989).

### Outer Model Fit

Lohmöller suggests three steps in the examination of residual covariances in order to evaluate the fit of the outer model. As a first criterion, he states that the fit of the outer model can be judged satisfactory “if [the outer] residual covariances are low enough” (1989, p. 55). Table 5.32 presents the outer residual covariance matrix. For the present, the boxes depicted in the table can be ignored.

There is no automatic level at which residuals can be judged to be low enough. Three residuals in Table 5.32, however, are noticeably large, exceeding .20 in absolute value. These are the covariances between the residuals of MV1 and MV2, MV2 and MV3, and MV8 and MV9. MV1 (FIC Score), MV2 (Intensity Score) and MV3 ( $\chi^2$  Score) are all indicators of Vision Complexity. This was one of the latent variables where individual item reliability was shown to be weak in an earlier analysis. The other large residual covariance is associated with MV8 (Value/Convenience Number Index) and MV9 (Value/Convenience Score Index), which are both indicators of the latent variable Value- versus Convenience-Based Diversity.

Nine other covariances in the table are between .10 and .20 and can be considered moderate. All of the remaining covariances are less than .10 in magnitude. The root-mean-square (RMS) for the matrix of outer residual covariance values is .059. Overall these results suggest that the fit of the outer model can be judged to be moderate, with weaknesses particularly apparent in the cases of  $\xi_1$  (Vision Complexity) and  $\xi_4$  (Value-/Convenience-Based Diversity).

Table 5.32  
Outer Residual Covariance Matrix

Values x 10<sup>-3</sup>

	<u>MV1</u>	<u>MV2</u>	<u>MV3</u>	<u>MV4</u>	<u>MV5</u>	<u>MV6</u>	<u>MV7</u>	<u>MV8</u>	<u>MV9</u>	<u>MV10</u>	<u>MV11</u>	<u>MV12</u>	<u>MV13</u>	<u>MV14</u>	<u>MV15</u>	<u>MV16</u>	<u>MV17</u>	<u>MV18</u>	
<u>MV1</u>																			
<u>MV2</u>	334																		
<u>MV3</u>	-227	-57																	
<u>MV4</u>	-40	-28	18																
<u>MV5</u>	40	28	-18	-48															
<u>MV6</u>	38	-6	-23	8	-8														
<u>MV7</u>	-38	6	22	-8	8	-145													
<u>MV8</u>	-32	-54	9	-10	10	-34	34												
<u>MV9</u>	38	65	-10	11	-11	41	-40	-294											
<u>MV10</u>	0	0	0	0	0	0	0	0	0										
<u>MV11</u>	-3	-37	-5	-5	5	-25	25	57	-68	0									
<u>MV12</u>	-11	18	9	8	-8	-6	6	18	-22	0	-17								
<u>MV13</u>	-29	54	26	31	-31	41	-40	-94	111	0	-130	-4							
<u>MV14</u>	0	11	2	-8	8	18	-18	-21	25	0	13	-86	-142						
<u>MV15</u>	22	-7	-14	-5	5	0	0	-24	28	0	-103	-57	43	-49					
<u>MV16</u>	5	43	5	8	-8	-7	7	25	-29	0	-11	1	-159	34	30				
<u>MV17</u>	33	9	-17	-6	6	18	-18	1	-1	0	20	14	93	-23	-41	-163			
<u>MV18</u>	-67	-89	22	-3	3	-21	20	-43	52	0	-17	-25	105	-18	22	-136			-96

MV labels are listed in Table 4.8, p. 237.

As a second step in examining the outer model fit, Lohmöller suggests that the fit can be judged satisfactory if the residual covariances between blocks are near zero. The between-block covariances are highlighted by the boxes depicted in Table 5.32. If the blocks have been defined correctly in the model the between-block covariances correlations (i.e. those inside the boxes) should be low. Although Lohmöller does not indicate an acceptable threshold, Falk and Miller (1992) state that if several correlations are .20 or greater the blocks are not distinctly defined. Applying this criterion to the values in Table 5.32, the fit can be judged satisfactory since only two between-block values exceed .10 and none meet or exceed .20 in magnitude.

As a third step in evaluating outer model fit, Lohmöller recommends that the fit can be judged satisfactory if the covariances between outer residuals and the latent variables are near zero. The covariances between the outer residuals and the latent variables are presented in Table 5.33. Three values are greater than .20 in magnitude. Once again, these are associated with constructs where earlier analyses have already indicated problems: Vision Complexity, Value-/Convenience-Based Diversity, and the manifest indicator Occupational Status associated with the construct Support Strength. The results provide another indication that the fit of the outer model is weaker for these three constructs. The RMS for the matrix values is .082, suggesting a moderate fit.

In summary, three separate analyses were conducted to assess the fit of the outer model. These involved the examination of two residual matrices: the outer residual covariances, and the covariances between the outer residuals and the latent variables. Taken together the results indicate that the fit of the outer model is less than ideal, with a weaker fit particularly evident in the case of three latent variables: Vision Complexity, Value-/Convenience-Based Diversity, and Support Strength. Overall the fit of the outer model might best be described as "moderate."

Table 5.33  
Covariances Between Outer Residuals and Latent Variables

Values x 10<sup>-3</sup>

	$\xi_1$	$\xi_2$	$\xi_3$	$\xi_4$	$\eta_1$	$\eta_2$	$\eta_3$
MV1	0	229	97	14	-16	-45	-72
MV2	0	49	120	-138	-149	-164	-182
MV3	0	-121	-34	-32	-17	-3	9
MV4	-92	0	-22	0	-42	-17	22
MV5	92	0	22	0	42	17	-22
MV6	-1	-37	0	-41	3	-31	-60
MV7	1	36	0	41	-3	30	59
MV8	185	40	154	0	-51	10	133
MV9	-220	-47	-183	0	61	-12	-158
MV10	0	0	0	0	0	0	0
MV11	5	122	57	-113	-15	0	163
MV12	31	9	45	32	-27	0	-116
MV13	-222	-214	36	-73	-231	0	10
MV14	31	-20	-41	-33	-48	0	43
MV15	10	-42	-71	137	157	0	-102
MV16	60	100	93	129	85	66	0
MV17	-48	-57	-39	-74	-77	1	0
MV18	-17	-68	-89	-89	-9	-113	0

LV and MV labels are listed in Table 4.8, p. 237.

### Inner Model Fit

To assess the fit of the inner, or structural, model Lohmöller suggests that the residual covariance between endogenous variables be examined. Here, Lohmöller provides a clear guideline for assessment: in order for the fit of the inner model to be judged satisfactory no single residual covariance between endogenous variables should be higher than a path coefficient. Table 5.34 presents the residual covariance between endogenous variables. Recalling that the magnitude of the smallest path coefficient in the inner model was .15 ( $\xi_1 \rightarrow \eta_2$ ) it can be seen that all of the values contained in Table 5.34 are well below the threshold. Consequently, the fit of the inner model can be judged to be satisfactory.

Table 5.34  
Residual Covariance Between Endogenous Variables  
Values x 10<sup>-3</sup>

	<u><math>\eta_1</math></u>	<u><math>\eta_2</math></u>
$\eta_2$	-22	
$\eta_3$	7	7

LV labels are listed in Table 4.8, p. 237.

### Total Model Fit

Table 5.35 provides the matrix of inner and outer residual covariances. Lohmöller states that the fit of the total model can be considered satisfactory if the covariances of the inner and outer residuals are low enough. Once again, there appears to be no commonly adopted convention concerning an acceptable threshold. It can be observed that the covariances of manifests with their associated constructs are all zero; this is a definitional artifact of principal component extraction (Wyse, 1992). Also noticeable are the zero covariances associated with the single indicator of  $\eta_1$ . Once again, this is a definitional outcome, since constructs with only one indicator are assumed to be perfectly measured, resulting in a zero residual.

On reviewing the values in the table, five are greater than .20 in magnitude, with the largest being .229. The areas of weaker fit involve the same constructs where weaknesses in the fit of the measurement model have already been identified. The RMS of the matrix values is .080. Overall, the fit of the overall model appears to be moderate, with some weaknesses apparent which are attributable to the measurement model.

Table 5.35  
Inner and Outer Residual Covariances

Values x 10<sup>-3</sup>

	$\xi_1$	$\xi_2$	$\xi_3$	$\xi_4$	$\eta_1$	$\eta_2$	$\eta_3$
MV1	0	229	97	14	17	-100	-103
MV2	0	49	120	-138	-109	-87	-171
MV3	0	-121	-34	-32	-28	41	28
MV4	-92	0	-22	0	-50	3	23
MV5	92	0	22	0	50	-3	-23
MV6	-1	-37	0	-41	3	-4	-45
MV7	1	36	0	41	-3	4	44
MV8	185	40	154	0	0	-17	110
MV9	-220	-47	-183	0	-1	20	-131
MV10	0	0	0	0	0	0	0
MV11	5	122	57	-113	4	26	111
MV12	31	9	45	32	-12	-17	-117
MV13	-222	-214	36	-73	-219	153	2
MV14	31	-20	-41	-33	-62	23	33
MV15	10	-42	-71	137	133	-82	-37
MV16	60	100	93	129	117	-39	-13
MV17	-48	-57	-39	-74	-91	67	-16
MV18	-17	-68	-89	-89	-38	-53	49

LV and MV labels are listed in Table 4.8, p. 237.

### Summary

Although PLS does not attempt to maximize model fit, examination of residual covariances can provide some indication of how well the model fits the data. Four residual covariance matrices were examined in order to assess the fit of the outer model, the inner model and the total model. The results suggest the fit of the inner model is reasonably good, although some areas of weaker fit were evident in the outer model and the total model. These areas of poorer fit tend to be associated with Vision Complexity, Value-/Convenience-Based Diversity and Support Strength and are attributable to measurement weaknesses.



It should also be remembered that residuals tend to be larger in small samples. Bollen provides an example where a random subset of 60 of 138 original cases displayed a 17% increase in the mean residual size over that of the original sample (1989, p. 262). Since the sample size in the current study is quite small, this is likely an additional factor contributing to the weaknesses observed. Overall it is concluded that the models are of moderate to satisfactory fit.

#### **5.4.6 Control Variables**

The term “control variables” in the context of the current study is used to refer to extraneous variables which were identified during the literature review as having the potential to confound the relationship between predictor variables and endogenous variables. Such variables may be held constant in certain research designs or, as in the case of the current study, may be analyzed separately (Emory, 1976). Two factors were identified in the literature review as candidates for separate analysis; these were location (urban versus rural) and gender.

The design of the current study was deliberately intended to facilitate the analysis of the effects of location; this was accomplished by the incorporation of a stratified sample design which gave equal emphasis to rural and urban entrepreneurs without unduly compromising the representativeness of the overall sample. Nevertheless, the relatively small size of the total sample (dictated by financial and practical constraints) results in subgroup sizes that are less than desirable. In the case of women this was especially true, as the total sample included only nine women. As a result of these limitations, combined with limitations associated with PLS, the analytic techniques adopted to examine the impact of the control variables were not as sophisticated or powerful as they might have been under ideal conditions.

Different techniques were employed to assess the impact of location versus gender in view of the substantial differences in the sizes of the subgroups. Gender, given the small number of females, was assessed using descriptive measures not entirely appropriate for the task. It is important to recognize that the goal of these analyses in the context of the current (exploratory) study is not an explicit test of a theoretical framework but rather to investigate and explore the data in order to obtain insights which might serve to guide future research. In all cases an attempt was made to ensure the form of the analysis was reasonable, informative and useful but any inferences derived from the analysis still must

be understood in the context of the limitations of the data and therefore should be considered tentative at best.

### **Location**

PLS was the analytic method employed to assess the impact of location. The primary benefit of adopting PLS was that it provided maximum comparability with the main results of Phase Four and thus a strong context within which to interpret the results. The selection of PLS, however, raised three key issues which warrant elaboration.

The first issue concerns the sample size required by PLS. Earlier, in the Methodology section, it was stated that the conservative rule of thumb for regression sample size requirements was 10 cases per predictor (Falk and Miller, 1992). In the context of the current study, this resulted in a minimum acceptable sample size of 40 cases, since the maximum number of paths leading to any one endogenous variable was four. In order to assess location subgroups, however, the sample size of each group is restricted to 24 cases, giving 6 cases per predictor. Thus, the subgroup sizes do not meet the standard achieved during the testing of the research model hypotheses and should not be considered conservative. It can be noted, however, that there is no hard and fast rule concerning the number of cases required, so long as the the number of cases is greater than  $K+1$  where  $K$  is the number of predictors (Hays, 1988). Falk and Miller observed that liberal statisticians recommend as few as two cases per predictor and many respected authorities such as Hair et. al. suggest five cases as a minimum. Thus, from this perspective the subgroup sizes utilized for the present analysis appear acceptable, though not necessarily conservative.

The second issue raised by the adoption of PLS concerns the usage of standardized path coefficients in making comparisons across groups. Because the magnitudes of standardized coefficients are affected by the different variances of the variables in the two groups (Asher, 1983), differences observed between the coefficients across groups may be

attributable to differences in a variable's standard deviations for the two groups (Bollen, 1989). Consequently, Bollen recommends that across-group comparisons be done using unstandardized coefficients; PLS, unfortunately, is not equipped provide unstandardized coefficients. Although it is inadvisable to compare magnitudes of standardized coefficients across groups, Asher has pointed out that standardized coefficients are to be preferred for making comparisons concerning the relative importance of variables within groups. It is therefore appropriate to compare the within-group rank order of coefficients across groups (ibid.). This was the approach adopted in the current study.

The third and final issue warranting mention is the "level" or nature of the analysis itself. As Bollen has argued, comparability (or invariance) in models should be regarded as a continuum including both model form and similarity of parameter values. Issues concerning form may involve, for example, whether the models possess the same number of latent variables and whether the manifest indicators load on the same constructs. Issues concerning parameter similarity may include comparisons between the magnitudes of path coefficients and between the measurement model loadings across groups.

The sequential order of the investigation can be determined by the researcher's substantive interest (ibid.). In the current case, the primary area of interest is the extent to which the relative importance of predictor variables differs across groups. Consequently, the investigation begins with the comparison of the path coefficients and  $R^2$  values of the structural model. This is followed by a comparison of loadings and average variance explained for the measurement model. The model form specified for both subgroups was fixed, consisting of the same form (consisting of 7 latent variables, 18 manifests and 9 hypothesized paths) discussed in the main findings.

## Structural Model

The path coefficients obtained for the two location subgroups are listed in Table 5.36. Substantive differences are readily apparent between the two groups. Beginning with the predictors of support strength ( $\eta_2$ ) it can be seen that Insider/Outsider Diversity ( $\xi_4$ ) is the most important predictor for both groups; in terms of relative magnitudes within groups, however (i.e. as compared to the magnitude of the second most important predictor coefficient within each group),  $\xi_4$  is a more important predictor of support strength for rural firms than for urban. Whereas Vision Complexity ( $\xi_1$ ) is the second most important predictor of Support Strength in the case of rural firms, it is the least important in urban firms. Vision Reach ( $\xi_2$ ) ranks third in predictive importance in both groups. Finally, it appears that Value-/Convenience-Based Diversity is not a meaningful predictor for rural firms, yet is a moderately important (ranking second) for urban firms.

In the case of Firm Performance ( $\eta_3$ ), which is also associated with four predictor variables, the disparity between groups is even more striking. For rural firms Support Strength is by far the most important predictor, with a coefficient magnitude nearly 350% greater than the next most important predictor. In comparison, Vision Complexity and the two Diversity-based predictors are all of relatively minor importance. In the case of urban firms it is Vision Reach that is most important in predicting Performance. Support Strength, interestingly, ranks a fairly distant third. Value- versus Convenience-Based Diversity is second in importance (although the sign direction is negative) and Insider/Outsider Diversity lowest in importance.

In order to compare the explanatory power of the models across groups it was decided to examine the  $R^2$  values obtained for the endogenous variables. Table 5.37 presents these values. It can be seen that the predictive power of the model is generally improved in the case of both groups. The sole exception is the  $R^2$  value for

Table 5.36  
Path Coefficients by Location

Relation	Path Coefficient Values		Rank	
	Rural	Urban	Rural	Urban
$\xi_3 \rightarrow \eta_1$	-.221	-.467		
$\xi_1 \rightarrow \eta_2$	.320	.196	2	4
$\xi_2 \rightarrow \eta_2$	.234	.209	3	3
$\xi_4 \rightarrow \eta_2$	.489	.349	1	1
$\eta_1 \rightarrow \eta_2$	.029	.314	4	2
$\xi_2 \rightarrow \eta_3$	.155	.416	3	1
$\xi_4 \rightarrow \eta_3$	-.097	-.332	4	2
$\eta_1 \rightarrow \eta_3$	-.164	-.138	2	4
$\eta_2 \rightarrow \eta_3$	.566	.236	1	3

LV labels are listed in Table 4.8, p. 237.

Insider/Outsider Diversity in the case of rural firms, which is near zero. On the other hand, the variance explained for this same variable in the case of urban firms is nearly double that observed for the total sample. It appears that the somewhat low  $R^2$  value obtained for the entire sample is somewhat of an average of these two highly disparate values.

Given that the research model only posits one predictor of Insider/Outsider Diversity, the model appears to possess useful predictive power in the case of urban firms — this finding sheds considerable light on the weaknesses observed earlier when the model was applied to the total sample. On the other hand, the results indicate the model has not identified useful predictors of I/O Diversity for rural firms. In view of the fact that the earlier analysis revealed that I/O Diversity was almost inconsequential in terms of predicting Support Strength, and of relatively minor importance as predictor of Performance, the value of further research involving I/O Diversity in rural firms is suspect. Such research might be better directed at identifying other potential contributors to Support Strength and Performance in rural firms.

Table 5.37  
Comparison of R<sup>2</sup> Values

	Insider/Outsider Diversity	Support Strength	Performance
	$\eta_1$	$\eta_2$	$\eta_3$
Rural	.049	.626	.274
Urban	.218	.554	.244
Total Sample	.113	.482	.216

#### Measurement Model

Because PLS estimates the measurement and structural model parameters simultaneously, it would be misleading to compare changes in path coefficients and R<sup>2</sup> values without examining changes in the measurement parameters. Table 5.38 presents the loadings of the manifest variables on their respective constructs for each group.

Three constructs or latent variables exhibit noticeable discrepancies in the loading patterns observed. First, the factor loading patterns associated with Vision Complexity appear markedly different across the groups. In the case of rural firms, the construct is almost entirely defined by MV3, the  $\chi^2$  score. In contrast, Vision Complexity in urban firms exhibits high loadings on MV1 (FIC Score) and MV2 (Intensity Score). These findings may partially explain the low reliability scores associated with this construct during the evaluation of the measurement model for the total sample.

The second construct indicating a discrepancy in loadings is Support Strength — another construct where the measurement model for the total sample exhibited low validity. Here it can be seen that MV13: Occupational Status loads quite strongly (i.e. indicating adequate inter-item reliability) on the construct Support Strength in the case of rural firms, but extraordinarily weakly (only .333) on the same construct in the case of urban firms. Once again differences between the subgroups appear to account for a

substantial portion of the low reliability of the indicator witnessed during the evaluation of the model for the total sample.

Table 5.38  
Manifest Loadings by Location

	<u>Urban</u>	<u>Rural</u>
MV1	.097	.963
MV2	.118	.804
MV3	.916	.604
MV4	.977	.978
MV5	.957	.986
MV6	.919	.917
MV7	.941	.912
MV8	.864	.898
MV9	.882	.707
MV10	1.000	1.000
MV11	.932	.905
MV12	.957	.856
MV13	.717	.333
MV14	.906	.911
MV15	.915	.893
MV16	.870	.920
MV17	.901	.858
MV18	.850	.684

MV labels are listed in Table 4.8, p. 237.

The final construct revealing a noticeable difference between groups is Performance. Here the loading of MV18 (Subjective Performance) appears somewhat lower (.684) in the case of urban firms versus rural firms (.850). The magnitude of the difference, however, is not as substantial as the differences noted on the previous two constructs.

The final measurement model comparison across groups involved the average variance extracted for the endogenous constructs. These values are presented in Table 5.39. Most noticeable is the extremely low value associated with  $\xi_1$  (Vision Complexity) in the case of rural firms. This result suggests that the measurement model is likely not appropriate for rural firms in the case of Vision Complexity. In all other cases the values



exceed .50, suggesting an adequate degree of convergent validity. Although rural firms display a slightly lower value for  $\xi_2$ , in general the measurement model appears to perform better for rural firms on the remainder of the constructs.

Table 5.39  
Average Variance Extracted by Location

	$\xi_1$	$\xi_2$	$\xi_3$	$\xi_4$	$\eta_1$	$\eta_2$	$\eta_3$
Rural	.287	.935	.865	.762	n/a	.791	.764
Urban	.646	.964	.836	.653	n/a	.658	.683

LV labels are listed in Table 4.8, p. 237.

### Summary

Several comparisons involving the structural and measurement models were made in order to investigate the impact of location. It was found that location did indeed account for important differences in the sample. In the case of the structural model, it was observed that the relative importance of predictors of both Support Strength and Performance varies according to location. In particular, Support Strength is by far the most important predictor of firm performance (in the context of the given model) for rural firms. Differences in the measurement model were also apparent across groups. Here the results helped to explain some of the measurement model weaknesses observed in original tests involving the total sample. Taken together, these findings suggest that important improvements in both the structural and measurement models can be achieved by taking location into account. The issues surrounding the measurement model are complex, however, and will require further research in order for meaningful refinements to be achieved.

## Gender

As noted earlier the sample only included nine women. The analysis of the potential for gender effects is consequently quite limited in both scope and power. Table 5.40 presents the means and standard deviations of the manifest scores for the two subgroups. Interpretation of the differences between groups, particularly across variables, is somewhat difficult due to differences in the variances between groups. It was decided to use the *t*-ratio in order to summarize the magnitude of the differences in means between groups. Inferences based on *t*-values can be misleading when the assumption of homogeneity of variance is violated, however. One way to address this would be to conduct a separate test for homogeneity of variance (say, an *F*-test) prior to calculating the *t*-ratios. Unfortunately, tests for homogeneity tend to perform poorest in small samples, where they are usually needed the most (Hays, 1988).

In situations such as the current one, where one cannot assume equal population variances and samples are of different size, Hays recommends applying a correction factor to the value of the degrees of freedom. In this situation the *t*-ratio is calculated using the separate standard errors from each sample. Consequently, the values depicted in the last column of Table 5.40 represent separate variance estimates. The absence of the reporting of significance levels is deliberate and emphasizes that the concern here is not the testing of experimental hypotheses but rather the information concerning relative magnitudes of differences between means that is conveyed by the ratio itself. Since testing for significance would have entailed 18 separate tests and one group includes only nine cases, it was clear that significance testing was entirely inappropriate.

The magnitudes of the *t*-values in Table 5.40 are noticeably larger in the case of the last two groups of manifests, which are associated with constructs Support Strength and Performance. In the case of Support Strength, the difference in MV11 (Supporter Count)

across groups indicates that female entrepreneurs utilize more key supporters than do male entrepreneurs (5.22 versus 3.51). This represents an increase of 1.71 supporters or 49% over the number of key supporters reported by males. Females also obtain more support from each supporter than males, receiving 2.94 units of support per supporter versus 1.94 units for males. Although the differences between groups on the other manifests associated with Support Strength are less substantial, it is interesting to note that the values are consistently higher in the case of females.

Table 5.40  
Manifest Scores by Gender

	<u>Mean Score</u>		<u>Standard Deviation</u>		<u>t-value</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	
MV1	13.33	12.33	4.07	2.69	.90
MV2	-2299.38	-2608.00	960.74	733.49	1.07
MV3	-12.41	-14.01	4.96	5.96	.75
MV4	14.31	20.33	7.16	10.51	-1.63
MV5	20.77	26.00	9.69	11.02	-1.31
MV6	-1.69	-2.00	1.61	1.32	.60
MV7	-1.84	-2.56	1.54	0.94	1.80
MV8	0.26	0.36	0.24	0.21	-1.31
MV9	1.11	1.04	0.58	0.59	.32
MV10	0.76	0.72	0.41	0.29	.29
MV11	3.51	5.22	2.02	0.83	-4.00
MV12	2.21	2.67	1.22	0.71	-1.51
MV13	46.87	52.84	26.25	21.28	-.72
MV14	1.94	2.94	1.25	1.06	-2.48
MV15	5.33	6.11	2.40	0.93	-1.58
MV16	2.82	4.33	2.01	1.58	-2.45
MV17	0.06	0.31	0.34	0.18	-3.15
MV18	3.82	4.66	1.33	0.92	-2.24

MV labels are listed in Table 4.8, p. 237.

The mean values on all three Performance-related manifests are also consistently and substantially higher for females. This trend is consistent with the hypotheses posited by the research model, although it is not clear to what extent it is directly attributable to the higher Support Strength reported by females. This finding, however, appears to have

important implications and certainly warrants further research. Future efforts will need to utilize a larger sample of females and a design which is capable of assessing the moderating effect of gender in order to properly assess the extent to which the higher performance reported by females is attributable to Support Strength.

In summary, the analysis of the potential for gender effects suggests that there may be important differences between male and female entrepreneurs concerning both the building of support and ultimate performance. These differences appear consistent with the research model hypothesized. Until such results can be verified by a larger sample, however, these conclusions must be regarded as quite tentative.

## **CHAPTER SIX**

### **CONCLUSIONS**

#### **Chapter Outline**

#### **6.1 Introduction**

#### **6.2 Summary of Major Findings**

**6.2.1** Findings from Preliminary Phases

**6.2.2** Findings Concerning the Research Model

#### **6.3 Limitations**

#### **6.4 Contribution**

**6.4.1** Implications for Theory

**6.4.2** Implications for Practitioners

**6.4.3** Implications for Future Research

#### **6.5 Conclusion**

#### **6.1 INTRODUCTION**

In seeking to understand the factors underlying the differential performance of entrepreneurs the research in this dissertation investigated the influence of entrepreneurial vision and support on the performance of new venture start-ups. Following a critical and broad-based analysis of the literature, a testable theoretical model was developed. This model hypothesized nine relationships amongst three vision-related constructs, three support-related constructs and one performance-related construct. With the exception of the performance construct, new measures of these theoretical constructs were developed either in the absence of existing measures or to overcome demonstrated weaknesses associated with pre-existing measures.

Four phases of data collection were utilized; the first three phases were used to develop and pilot the research instrumentation and sample design while the fourth phase was utilized to collect the data for the testing of the empirical model. As might be

expected in an exploratory study involving multiple stages, the nature of the methods and particularly the analyses tended to change from a qualitative emphasis in the early stages to an increasingly quantitative emphasis towards the end.

## **6.2 SUMMARY OF MAJOR FINDINGS**

Several findings were described and discussed during the course of the multi-stage investigation. Those of greatest consequence are summarized here and are organized according to the stage of the research process. All must be understood in the context of the limitations of the study, which are described in the next section.

### **6.2.1 Findings from Preliminary Phases**

Phase Two of the study generated two findings of considerable interest. First, it was found that the grid repertory procedure tended to elicit roughly equal proportions of external and internal constructs. This result is consistent with Filion's earlier findings that entrepreneur's central visions tend to contain an internal and external component (1990a, 1991). The current study, while not constituting a replication, does provide support for his conclusions concerning the nature and scope of vision content. To the author's knowledge Filion's results have not received any confirmation whatsoever from other sources despite its status (in the author's opinion) as the most important study of entrepreneurial vision to date.

A second important finding from Phase Two was that the majority of content-related dimensions of visions could be represented by a relatively small number (i.e. 12-16) of constructs. Moreover, while the repertory grid process is unlikely to elicit a representative set of vision constructs when administered to one individual, a

representative set can be derived from the administration of the grid to a relatively small sample (e.g. n=10-20) of individuals. Research on vision (leadership, entrepreneurial and other forms) has been hampered by the lack of a suitable methodology for capturing vision. Consequently, the literature tends to be characterized by an over-abundance of theory and a shortage of empirical substance. The results of the current study suggest that the development of a practical instrument to measure vision content should be a feasible and worthwhile undertaking.

In Phase Three of the research it was found that entrepreneurship is only an important activity in certain non-routine firm contexts. Examples of such contexts include start-up and turnaround situations. This finding is consistent with the theorizing of Mintzberg, who argued that certain environments are more supportive and demanding of entrepreneurial behaviour. It also supports the contention of Gartner (1988) that behavioural approaches to entrepreneurship are more productive than trait approaches. Rather than asking "Who is an entrepreneur?" we should be more concerned with "When is an entrepreneur?". This finding goes right to the heart of the debate concerning an appropriate definition of entrepreneurship and suggests that although the debate may have grown tiresome, it remains as relevant as ever. Overall, the issue has profound implications concerning the selection of research populations, and in the case of the current study ultimately determined the sampling frame selected to test the research model in Phase Four.

### **6.2.2 Findings Concerning the Research Model**

#### **Validity of the Measurement Model**

In general the measurement model possesses adequate construct validity, particularly in light of the exploratory nature of the research and the fact that most

measurement indicators were newly developed for this study. Important weaknesses were found, however, with respect to the single item reliabilities associated with two constructs: Vision Complexity and Support Strength, suggesting opportunities for further refinement. All constructs obtained satisfactory ratings on the remaining two indications of convergent validity: internal consistency and average variance extracted. The average variance extracted for all constructs measured by multiple indicators was .75. The measurement model also displayed adequate discriminant validity at both the indicator and construct levels.

### **Hypothesis Tests**

Five of nine hypothesized structural relationships were found to be statistically significant. Statistically significant relationships were associated with two of three vision-related predictor variables and two of three support-related predictor variables. Both constructs concerning vision content (Reach and Focus) were statistically significant predictors whereas Vision Complexity was not. The most important predictors of Support Strength were Value-/Convenience-based Diversity, followed by Vision Reach. In the case of Performance the most important predictors were Support Strength, followed by Vision Reach.

A statistically significant negative relationship was also found between Vision Focus and Insider/Outsider Diversity. This latter finding was unexpected and interesting in light of prior research by Filion (1991), which found that firms where either the internal or external component of vision was less developed tended to perform more poorly.<sup>1</sup> The results of the current study indicate that while balanced visions do have a small, but

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<sup>1</sup> Filion's conclusion, however, was based on a qualitative analysis and did not appear to involve direct tests of differences in performance.



positive indirect effect on Performance, focused visions tend to result in greater Insider/Outsider Diversity, which is positively related to Support Strength.

The four path coefficients not statistically significant were all non-trivial in magnitude, with the smallest being .15 in value. Given the low power resulting from the small sample size, it is unwise to rule these out as unworthy of further research. Surprisingly, the relationships between both diversity-related constructs and firm performance were negative. Subsequent analysis revealed several potential explanations and suggested that the relationship between diversity and performance may be considerably more complex than current theory allows.

### **Concomitant Variation**

The extent to which the study provided evidence of covariation between the predictors and the endogenous variables of the research model is indicated by  $R^2$  values of 11%, 48% and 22% for Insider/Outsider Diversity, Support Strength and Performance, respectively. Subsequent analysis revealed that the relatively low value obtained in the first instance was nearly twice as great in the case of urban entrepreneurs, but approached zero in the case of rural entrepreneurs. The strong value obtained for Support Strength indicates that the model performs well here, accounting for nearly half of the variation in this variable. This is a useful result with important implications for the education of entrepreneurs. The final value obtained for Performance is not impressive in overall magnitude, but given the large number of factors which can affect the performance of a firm, can be considered quite substantial for such a parsimonious research model.

## **Control Variables**

Location was found to have considerable impact on the research model, with substantial differences in the relative importance of predictor variables evident across groups. In the case of rural firms, Support Strength is by far the most important predictor (in the model) of Performance; the other predictors appear relatively minor in comparison. For urban firms Vision Reach is the most important predictor of Performance, followed by Value/Convenience-Based Supporter Diversity. Differences in the measurement model parameters across groups appeared to contribute to the reliability weaknesses observed in the tests involving the entire sample.

Some differences were also observed between male and female entrepreneurs. In particular, females exhibited consistently higher scores on all indicators of Support Strength and Performance. These findings do not appear to be inconsistent with the research model, however.

### **6.3 LIMITATIONS**

The conclusions drawn from the results of the current study should only be understood within the context of the limitations of the methodology and data set. As with any research study, several limitations exist. The most important of these are described in this section.

The first limitation deserving mention is sample size. Small samples restrict the power of significance tests, giving us less confidence in our ability to correctly reject the null hypothesis. In the current study four paths did not achieve statistical significance; their status and must remain ambiguous given the relatively low power of the test. (On the other hand, our confidence in cases where the null hypothesis is rejected is increased as a

result of the low power.) The use of one-tailed tests would have resulted in increased power, but it was decided to use two-tailed tests for two reasons. First, two-tailed tests are more appropriate in exploratory research. Second, one-tailed tests using the  $t$ -distribution are better suited for use in large samples (Hays, 1988). The use of a small sample also restricted the scope and power of the subsequent analysis of subgroups. Finally, in the case of the samples utilized in the first three stages of the research, representativeness may be a concern due to selection processes and sample size.

A second limitation of the study is that neither the statistical procedures associated with the analytic technique PLS nor the cross-sectional design of the study supports claims of causation. Instead, an important objective of the study was the demonstration of concomitant variation among the variables. It was stated earlier that concomitant variation is a necessary but insufficient condition for causation.

A third limitation concerns the measures utilized. The analysis of the measurement model revealed the validity of the model was suspect in certain instances. Subsequent analysis of the control variables suggested these problems may be attributable in part to the omission of variables or relationships due to the inadequacy of current theory. Other factors contributing to the potential for measurement error include the reliance on one source of information (i.e. the entrepreneur), the use of retrospective data as a substitute for objective indicators (particularly a concern in the case of vision), the assumption of zero measurement error in the case of the construct measured by a single manifest, and the low number of indicators available for several of the exogenous variables.

A final limitation is the limited generalizability associated with the regional nature of the study sample. The (Phase Four) sample itself was confined to the island portion of the province of Newfoundland. The isolation and separation afforded by Newfoundland's island status has served to protect and preserve a culture which is in some ways quite unique as compared to other developed regions. Community structures, for example, tend

to be considerably more closely-knit than in most other places. It is therefore unclear to what extent the results can be generalized to other geographic regions. There is, however, some evidence that Inc. 500 founders utilized a system of supporters during start-up (Case, 1989).

#### **6.4 CONTRIBUTION**

This study makes several contributions of significance. The first contribution is the creation of a testable, parsimonious theoretical model which makes explicit the linkages between vision, support and performance. The results of the research indicate that the model possesses useful predictive power.

The second major contribution is a methodological one. Many of the indicators of the theoretical constructs in the research model were newly developed for the purposes of this study, either in the absence of pre-existing measures or in reaction to demonstrated problems associated with existing measures. Others were adapted from diverse disciplines, including clinical psychology and social support. In addition, most of the indicators represented either indexes or "objective" quantities (e.g. supporter count) rather than individual Likert-type questionnaire items. Consequently, they contained more information than typical indicators (see Cohen et. al., 1990). The results of the study indicate the presence of some measurement-related weaknesses which need to be addressed, but overall the measurement model possesses relatively good validity and constitutes a substantial base upon which further advancements can be made. This is important because difficulties associated with measuring vision have acted as a barrier to empirical research.

The third contribution the study makes is that it provides compelling support for the propositions concerning the linkages between vision, support and performance. Such empirical support has largely been absent in the literature. Remarkably few empirical

studies of vision exist due to the methodological difficulties mentioned above; a recent research dissertation was only able to locate one empirical study concerning vision (Baum, 1994). In the case of support there are substantially more studies available, including studies of the importance of support for small businesses and network-analytic approaches to support. In the literature review it was shown that, taken together, this body of work is inconclusive at best and contrary to expectations at worst. The results of the current study provide support for the contention that the lack of empirical confirmation of the importance of support is attributable to theoretical inconsistencies and methodological shortcomings. Rather than abandoning support in favour of the null hypothesis, we need to instead refine our theories and methodologies.

#### **6.4.1 Implications for Theory**

According to Amit, Glosten and Muller (1993) one of the main challenges facing a theory of entrepreneurship is that of identifying most of the variations in the performance of entrepreneurs and their ventures. The review of performance-related studies undertaken in Chapter 1 revealed a lack of success in this respect, which was attributed partly to a frequent absence of theory underlying the selection of variables. Amit, Glosten and Muller do offer some advice as to how research should proceed, however:

Our conclusion suggests that it may be too ambitious to expect a complete and robust theory due to the interdisciplinary nature of entrepreneurship. However, we show that by integrating perspectives and by applying analytic, empirical and experimental tools from a range of fields, some of the fundamental questions can be answered.  
(p. 815)

The research model developed for this study model merged theories concerning both leadership and resource dependence, and the methodology incorporated techniques from a variety of fields, including clinical and cognitive psychology, social support and social networks. In general, the study found strong support for the importance of both vision and support. This has several implications for theory.

At the broadest level of interpretation, the results are interesting because they support both the "choice" and "determinism" perspectives of organizational success. Whereas resource dependence emphasizes the external control of organizations by the environment (Pfeffer and Salancik, 1978), vision provides for the influence of the individual on firm performance. This reinforces the argument of Amit, Glosten and Muller that no single perspective is ideally suited to account for entrepreneurial performance.

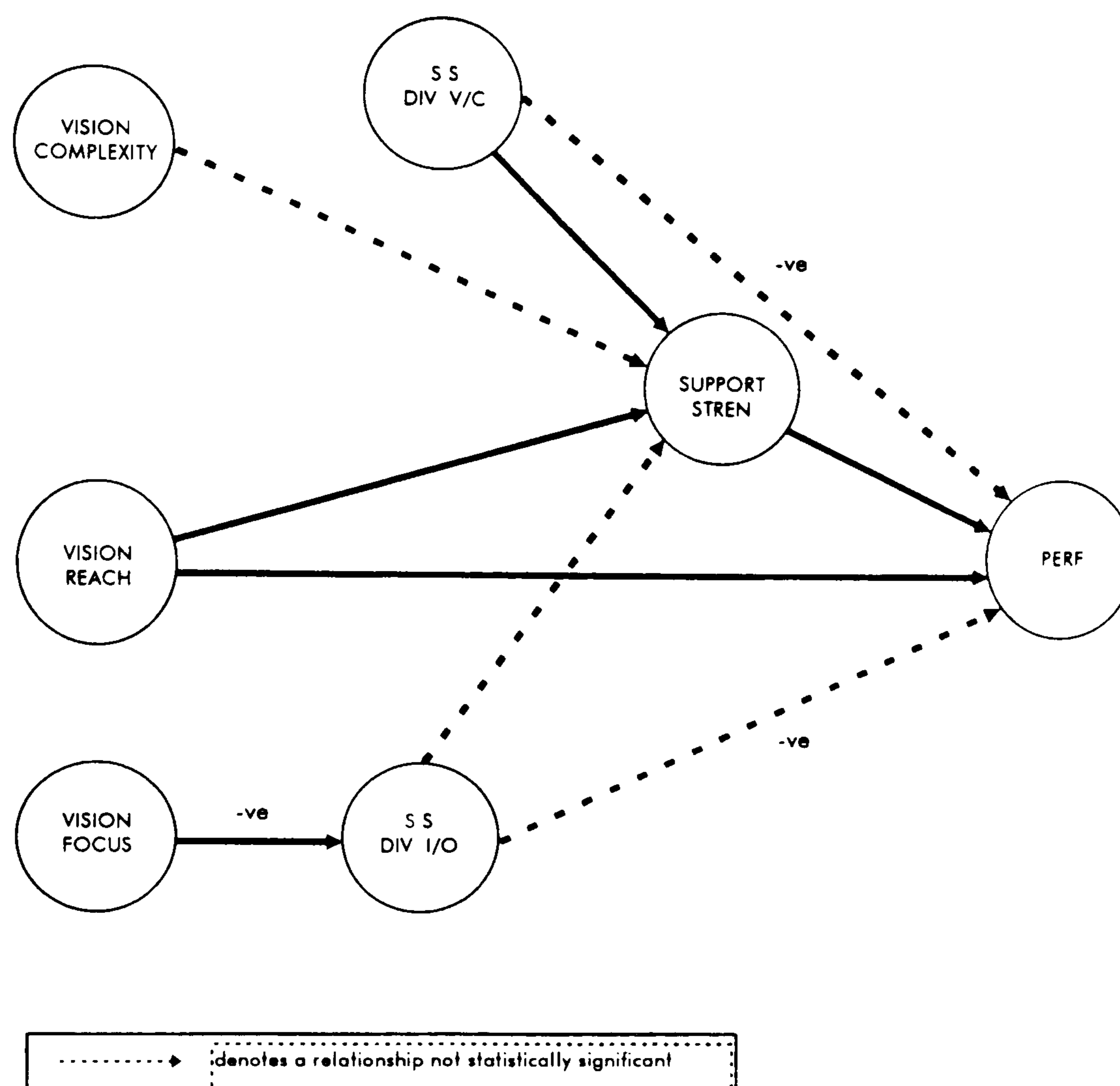
A second issue that emerges from the study is the nature of the relationships between vision, support and performance. These are summarized in Figure 6.1.<sup>2</sup> It appears that vision reach is an important predictor of both the strength of received support and firm performance. In the former instance an ambitious vision not only provides greater motivation for supporters but also reflects a need for more resources and a higher degree of leveraged support on the part of growth-oriented firms. The positive impact of vision reach on performance emphasizes that the preferences and aspirations of the entrepreneur must be taken into account in order to develop meaningful theories of entrepreneurial processes.

The finding that support strength is enhanced considerably by value- and convenience-based supporter diversity highlights the importance of value-based support and convenience-based support in the venture initiation process. To date, the contribution of value-based support has been recognized in the literature, but has only received casual mention. The results of this study indicate the need for its role to be modeled explicitly. The importance of convenience-based support to the overall strength of support and the positive relationship between support strength and performance both highlight the need for theory to take into account not only the quantity of support, but also the quality of support received. This appears to be a major failing of network "theory."

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<sup>2</sup> Nonsignificant paths have also been included as subsequent analysis showed that location reduced considerably the value of the path coefficients in some instances.

Figure 6.1  
Structural Model



A third issue emerging from the study is that the relations between vision, diversity and performance appear to be more complex than existing theory has recognized. It appears that visions with either an external or internal focus are more effective in achieving diversity amongst Insider/Outsider supporters than “balanced” visions which emphasize both dimensions. It may be that limiting the scope of vision facilitates the development of vision in greater depth and clarity, ultimately providing more compelling motivation for a wide range of supporters; more research, however, is needed to analyze this phenomenon.

Although not statistically significant, the negative correlations between supporter diversity and performance are also potentially important. Previous research on the personal networks of entrepreneurs has indicated a negative relationship between network

diversity and performance (Aldrich, Rosen and Woodward, 1987) but researchers (e.g. Johannisson, 1995; Sandberg and Logan, 1997) subsequently have either discounted or ignored this counter-intuitive finding in concluding that network measures are unrelated to performance. The finding of this study, however, is consistent with that of Aldrich, Rosen and Woodward and is very interesting in light of a recent study by Wagner, Stimpert and Fubara (1998), in which the performance of large firms was (surprisingly) found to be enhanced by the greater relative presence of either inside or outside directors. A number of plausible reasons for the existence of a homogeneity effect can be found in the literature (*ibid.*), most of which attribute the benefits of homogeneity to improved communication, cohesion and consensus. All of these factors can be seen to be associated with more effective implementation. Taken together, these results suggest that the effect of diversity may indeed be more complex than originally thought, contributing positively to support strength yet making implementation more difficult.

A fourth issue that emerges is the apparent “contingency” nature of the relative importance of the predictors of performance. Rather than assuming that support is more important than vision in influencing performance, it appears that the relative importance of predictor constructs depends on environmental attributes — in this case, location. Whereas support was by far the most important predictor of performance in the case of rural firms, vision reach was more important where firms were located in an urban environment. More research is needed to understand the role of the environment in moderating the influence of vision and support on performance.

Finally, the results of the study suggest that treating vision as a discrete or “all or none” concept (i.e. one either has a vision or does not have a vision) is misguided. Disassembling the construct of vision gave rise to three component constructs (structure, reach and focus) reflecting attributes of vision which can vary in degree. This approach emphasizes that most entrepreneurs do not proceed without any direction whatsoever,



particularly in the absence of a formal plan. Therefore, instead of asking whether or not an entrepreneur has or had a vision, the more appropriate question is “to what extent?”

On a concluding note, it is worth reflecting on what this research has told us about Sooklal’s (1991) work concerning vision and support. In a sense, Sooklal was right. The study has confirmed that vision and support are both significant predictors of performance. The model developed for this study, however, goes beyond Sooklal’s model in its effort to disassemble several key constructs and examine the inter-relationships between them. In doing so, it has shown that the relationships between vision, support and performance are more complex than those depicted in the original Sooklal model. Our understanding of vision, support and performance is enhanced by greater recognition of this complexity as it concerns both the constructs themselves and the relationships between them. To this end, it should be noted that this more sophisticated understanding was in part achieved through the use of PLS as an analytic technique due to its ability to model inter-relationships amongst constructs and measurement error; neither of these capabilities is available in first generation statistical methods.

#### **6.4.2 Implications for Practitioners**

If we assume that the results of the current study are replicated and the existence of causal relations, then the implications for practitioners are both clear and severalfold. In the case of entrepreneurs, effort should be devoted to planning not only the business but the start-up process as well. Entrepreneurs should spend time envisaging what form they want their businesses to take five and ten years down the road, focusing initially on either external or internal dimensions. Clearer visions can be more clearly communicated and are therefore more effective in marshalling support. Focused visions are more effective for attracting a diverse range of supporters (e.g. beyond employees and family members), which contributes to greater support strength. They should also recognize the importance

of attracting and building support for their businesses. They should make an effort to obtain support at no cost and at below market value, but also need to recognize that the strongest support systems requires allocating funds to purchase key support as well. Finally, to entrepreneurs who want their businesses to grow, our advice is to "aim high," since vision reach has a positive impact on both support strength and ultimate performance.

Funding institutions, agencies and potential investors should broaden their traditional criteria for evaluating new venture applications for funding. Traditionally the evaluation of new business clients has centered on the three "C's": the character of the principals, the capacity of the business to repay the loan (as evidenced by the financial projections and business plan) and the quality and availability of collateral. But our predictive abilities have not been strong, as evidenced by the high failure rates of young businesses and the reluctance of banks to lend to start-ups. The results of this study suggest that predictive power can be enhanced by placing increased emphasis on the start-up process. In particular, a variety of properties of support systems (such as size, scope, diversity) should be amenable to assessment at low cost. The consideration of such factors should lead to better and more accurate decision-making and a more efficient use of funds.

In a similar vein, educators also need to place more emphasis on other aspects of the start-up process in addition to the business plan. Recognizing that the start-up process itself can benefit from planning would constitute an important first step. Such planning might include the identification of forms of support that are critical to the firm and forms of support that would be beneficial to the firm, along with potential sources. Resource planning would also constitute an important part of the start-up plan, since a diversity of free and purchased support contributes to the overall strength of support received. There also needs to be more time and consideration given to the development of a vision. Business plans currently tend to be driven by the size of the opportunity and are frequently

(particularly the market analysis and financial projections) completed by outside consultants, with little regard for the original goals and vision of the entrepreneur.

### **6.4.3 Implications for Future Research**

#### **Structural Model**

Several implications and directions for future research stem from the structural portion of the research model. No one study, no matter how carefully designed and executed, can be considered definitive. Consequently, the results must be viewed as preliminary until replication is achieved. Replication in other geographic regions is also needed to establish the generalizability of the results.

Larger samples are needed to increase the power of the tests and will also permit the use of more powerful analytic techniques such as LISREL. These traditional approaches to structural equation modeling are also better suited to address issues of causation and can be used to model and test for the presence of feedback loops and reverse causation which the current study revealed as potential concerns. Longitudinal studies would also be useful for establishing causal relationships and provide important insights concerning the underlying processes at work.

Further exploratory work is also needed for theory development as well. The relationship between diversity and performance was revealed to be considerably more complex than had been originally thought; both value-/convenience-based diversity and insider/outsider diversity require additional study and theory development. The results of the study also suggest that the predictive power of the model can be increased by the inclusion of other contingent factors such as location (there appear to be measurement issues which need to be resolved first, however). Moreover, support is only one aspect of

vision implementation. Research is required to determine the impact and contribution of other aspects of implementation, such as communication of the vision. Additional research is also needed to examine the relative importance of different types of support, and whether these vary by context. Sandberg and Logan (1997), for example, recently found that the importance of specific networked resources depends on the competitive strategy of the firm. Finally, the scope of the model itself can be broadened in two respects. The first involves incorporating other aspects of the start-up process (e.g. business planning); the inclusion of such variables can be expected to result in a change in the parameters of the model. The second direction involves the examination of the model across other entrepreneurial contexts such as crisis and turnaround.

A final implication which should serve to guide future research on entrepreneurship concerns the selection of an appropriate population and sampling frame. It was found in the current study that entrepreneurial activity can be surprisingly low or absent in samples where we expect it to be strongly present. The results suggest that looking for appropriate situational contexts should generally result in stronger samples than looking for persons.

### **Measurement Model**

The presence of measurement error (or the assumption of none) and the less-than-satisfactory convergent validity of Vision Complexity and Support Strength all point to the desirability of further refinement of the measures. Further work is needed to explore the changes in measurement model parameters observed between rural and urban firms on these two constructs, and to make appropriate adjustments to the measurement model. It may also be worthwhile to explore the potential for adopting a Likert-item approach rather than repertory grid for the measurement of vision content-related constructs in order to reduce the time and labour required for data collection. The experience of this research has confirmed the labour-intensive nature of the grid process, a problem that has rendered

it unsuitable for use with large samples. Although the abandonment of grid methodology in favour of a Likert approach would likely sacrifice the ability to incorporate vision structure as an element of analysis, the extent to which vision structure contributes to the research model is not yet clear due to the measurement problems cited above. This is not to discount the power of repertory grid, however. If grid methodology had not been employed in Phase 2 to derive the vision constructs (where it was found that entrepreneurs do tend to employ similar constructs), it is unlikely that we would have the same degree of confidence in the validity of Likert-based indicators.

In addition to the above problems, several constructs still have fewer than three indicators, suggesting a need for more measures of existing constructs. Existing measures may also be refined or replaced by better indicators. Finally, there is also a need to collect data from different sources (say, from the perspective of supporters) in order to cross-validate the accuracy of the data and examine the impact of methods effects.

## **6.5 CONCLUSION**

The growing international trend of government cutbacks and shrinking budgets will no doubt make it increasingly important to ensure that scarce resources for research are utilized even more wisely and efficiently in the future. Exploratory studies can serve an important function in this regard by helping to ensure that vast amounts of resources are not squandered in the pursuit of unproductive "dead-ends." In order to be effective these exploratory studies will need to achieve a successful yet delicate and often elusive balance between credibility and confidence in the conclusions and what would constitute a "reasonable" resource commitment for an initial investigation.

Several strategies can help to offset the problem of small study size resulting from resource constraints. Successful studies will likely be characterized by the adoption of a

strong theoretical framework, innovative approaches to research design, thoughtful attention to the problem of measurement, and powerful analytical techniques. It is hoped that, in providing a compelling case for the importance of vision and support to entrepreneurial performance, this study will serve as yet another signpost that such research can be achieved.

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**APPENDIX 1.1**

**SUMMARY OF EMPIRICAL STUDIES ON  
SMALL FIRM PERFORMANCE**

### Empirical Studies of Factors Related to Small Business Performance<sup>1</sup>

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
1	Aldrich et al. (1987)	North Carolina; multiple	165	Median 3 yrs.	LS	-profit vs. no profit	FIRM AGE < 3 YRS. -hrs. per week maintaining network contacts -network density -strength of network ties  FIRM AGE > 3 YRS. -network size	-hrs. per week developing network contacts -contacts per week with core network members
2	Ballantine et al. (1992)	U.S.; multiple	814	NR	LS	-profits	-fixed asset ratio (-ve) -short and long term debt ratios (-ve) -advertising intensity (-ve) (significant in 1 yr. only)	-highly dependent on industry sector and year of analysis
3	Begley & Boyd (1987)	New England; multiple	239	Varied	CS	-ROA -sales growth -current ratio (liquidity)	ROA: -tolerance for ambiguity  LIQUIDITY: -locus of control (-ve) -risk-taking (-ve) -need for achievement	-type A behaviour
4	Boyd & Begley (1987)	New England; multiple	231	NR	CS	-ROA -sales growth -current ratio (liquidity)		-job stress
5	Bruno & Leidecker (1987)	California; high-tech	22	NR	CS	FAILURE: bankruptcy	FAILURE: -mgt. team problems -entrepreneur shortcomings -strategic planning problems -finance function weaknesses -operating problems -market problems	-dependent on year of study (1960's vs. 1980's)
6	Brush (1990)	Massachusetts; manufacturing	66	4-6 yrs.	CS	-sales growth -profit growth -growth relative to competition		-market scanning frequency -scanning behaviour (information type, personal/impersonal sources)
7	Carsrud et al. (1987)	Texas; multiple	197	Most ≤ 3 yrs.	CS	-revenue per employee	-had a mentor during development of business (-ve)	-use of networks in developing business venture

<sup>1</sup> NR = Not Reported  
CS = Cross-sectional  
LS = Longitudinal

#	Study	Location; Industry	Sample Size	Firm Age .	Method ..	Measure of Success	Significant Factors Contributing to Success	Not Significant
8	Carsrud et al. (1989)	South & South- west U.S.; retail building supply	96	NR	CS	-productivity -market share	Productivity: -interaction of motivational factors and minority ownership (1-49%)	
9	Chaganli (1987)	Saskatchewan; manufacturing	192	NR	CS	-ROA	-industry growth -interaction of industry growth and strategy	
10	Chaganli et al. (1989)	Saskatchewan; manufacturing	192	Median 10 yrs.	CS	-ROA	LOW INTENSITY PRICE & PROMOTION COMPETITIVE ENVIRONMENT -product scope PRICE COMPETITIVE ENVIRONMENT -product scope PROMOTION COMPETITIVE ENVIRONMENT -quality image orientation HIGH-INTENSITY PRICE % PROMOTION COMPETITIVE ENVIRONMENT -innovativeness (-ve) -product scope	-cost leadership
11	Chambers et al. (1988)	Michigan; multiple	100	Maximum 5 yrs.	CS	Subjective: -technical product development -overall performance	TECHNICAL PRODUCT DEVELOPMENT -previous experience in an established firm	-prior start-up experience among founding team members
12	Chandler & Jansen (1992)	Utah; mfg., restaurants, plumbing, rest homes, security systems	134	2-25 yrs.	CS	Profitability: -sales -earnings Growth: -sales -market share	PROFITABILITY -managerial experience -technical experience -self-assessed managerial competence -holding at least a bachelor's degree in business -self-assessed ability to recognize opportunity GROWTH -holding at least a bachelor's degree in business -self-assessed ability to recognize opportunity -business similarity -self-assessed drive -task similarity	

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
13	Cooper et al. (1988)	U.S.; multiple	2994	Avg. 11 mos.	LS	-3-yr. survival	<ul style="list-style-type: none"> <li>-education level</li> <li>-age</li> <li>-# of F/T previous jobs (-ve)</li> <li>-gender (male)</li> <li>-(goal orientation: craftsman)</li> <li>-negative reason for leaving previous job (-ve)</li> <li>-purchase versus start</li> <li>-full-time partners</li> <li>-accountant considered important source of info.</li> <li>-had outside job in 1st yr. (-ve)</li> <li>-size</li> <li>-initial capital</li> <li>-products similar to previous organization</li> <li>-customers similar to prev. org.</li> <li>-suppliers similar to prev. org.</li> <li>-industry (retail: -ve)</li> </ul>	<ul style="list-style-type: none"> <li>-previous mgt. experience</li> <li>-previous ownership experience</li> <li>-type of previous org.</li> <li>-# of business courses</li> <li>-parents owned business</li> <li>-hrs. worked per week</li> <li>-source of initial funds</li> <li>-franchisees</li> </ul>
14	Covin & Covin (1990)	Western Pennsylvania; manufacturing	344	Avg. 28.7 yrs.	CS	-subjective: weighted avg. composite measure	<ul style="list-style-type: none"> <li>-environmental hostility (-ve)</li> <li>-moderating effects of age and size</li> </ul>	<ul style="list-style-type: none"> <li>-competitiveness</li> <li>-aggressiveness</li> <li>-environmental technological sophistication</li> </ul>
15	Cragg & King (1988)	East Midlands, UK; metal goods manufacturing	179	Median 15 yrs.	CS	<ul style="list-style-type: none"> <li>-1-yr growth in sales</li> <li>-5-yr growth in sales</li> <li>-ROS</li> <li>-1-yr growth in profit</li> </ul>	<ul style="list-style-type: none"> <li>-age of firm</li> <li>-age of owner/mgr.</li> <li>-business plan (-ve)</li> <li>-# of mktg/sales staff (-ve)</li> </ul>	<ul style="list-style-type: none"> <li>-dependent on performance measure, but included:</li> <li>-monthly sales forecasts</li> <li>-monthly bad debts forecasts</li> <li>-monthly profit forecasts</li> <li>-monthly cashflow forecasts</li> <li>-monthly material requirements forecasts</li> <li>-new products</li> <li>-goals/motivation</li> </ul>
16	Daily & Dalton (1992)	U.S.; multiple	186	NR	CS	-P/E ratio -ROA -ROE		-CEO type (founder vs. professional mgr.)

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
17	Davidsson (1991)	Sweden; metal products mfg, electronic products mfg., repair services, retail clothing & home equip.	322	NR	CS	-growth in sales -growth in # of employees	-education -experience -age of mgr. (-ve) -firm size (-ve) -industry rate of innovation -market growth rate -industry concentration (-ve) -customer concentration -geographic mkt. dispersion (-ve)	
18	Doutriaux (1991)	Western Canada, Ont., Quebec; high-tech	68	Avg. 10.6 yrs.	LS	-sales	-large start-ups benefit from a joint R&D and mktg. orientation -small start-ups benefit from a single R&D or mktg. orientation or no specialization at all	
19	Doutriaux & Simyar (1987)	Western Canada, Ont., Quebec; high-tech	73	Avg. 10.8 yrs.	CS	-sales	-amount of start-up capital -mktg. experience at start-up -public sector sales in 1st yr. -prior start-up experience	-outside capital at start-up -finance experience at start-up -market similar to previous employer's -technology similar to previous employer's -founded by a team
20	Duchesneau & Gartner (1988)	U.S.; orange juice distributors	26	Max. 7 yrs.	CS	-discontinuance -return on net worth (profit + salary)	-entrepreneurial parents -education -mgt. experience -breadth of mgt. skills -start-up experience -less likely to purchase firm -risk averse -clear + broad business idea -planning time (start-up) -market research -used professionals -breadth of planning -less employee specialization -low personal command -joint ownership -participative decision-making -higher capital investment (in later stages) -LE communication effective + receptive (vs. guarded) -low costs -broad markets	-locus of control -firm age

#	Study	Location; Industry	Sample Size	Firm Age •	Method ••	Measure of Success	Significant Factors Contributing to Success	Not Significant
21	Dunkelberg et al. (1987)	U.S.; Multiple	1178	Median 12 mos.; Maximum 17 mos.	LS	-employment growth -sales growth -personal satisfaction	<b>PERFORMANCE</b> -previous mgt. experience (-ve) -source of idea -mode of entry -% ownership -source of start-up assistance -industry -source of new funds -source of assistance -type of changes instituted -time allocation  <b>SATISFACTION</b> -race -mode of entry -capital invested (-ve)	-education -previous organization -reason for leaving -goals when starting -initial capitalization -source of initial funds -gender
22	Egge (1987)	Minnesota; Multiple	143	Median 18 mos.	CS	-shortfalls in expectations	-business plan -prior experience in accounting & finance -size of firm (-ve) -mgt. experience -hrs. worked per wk. -mentor -3 or more planned venture	
23	Feeser & Willard (1989)	U.S.; computer equipment	42	NR; young & age- matched	CS	-sales growth	-relatedness of incubator's product/mkts. -size of incubator: employees -incubator publicly held vs. privately held	-size of incubator: sales -proximity to incubator
24	Fredriksen et al. (1989)	Sweden; technology- based	20	NR	CS	-fast growth vs slow growth. Defined by 3rd yr sales level	-current assets -current liabilities	-15 accounting measures

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
25	Hand et al. (1987)	U.S. (Region NR); gasoline service stations	112	NR	CS	-gasoline sales -TBA sales	<p><b>SUCCESSFUL</b></p> <ul style="list-style-type: none"> <li>-priority: time spent with customer</li> <li>-hrs. spent at station</li> <li>-prior sales estimates (-ve)</li> <li>-time spent planning (-ve)</li> <li>-degree to which attendants attempt upsell (-ve)</li> <li>-degree to which mechanics attempt upsell (-ve)</li> <li>-problems with employee performance (-ve)</li> <li>-location traffic volume (-ve)</li> </ul> <p><b>UNSUCCESSFUL</b></p> <ul style="list-style-type: none"> <li>-priority: supervising employees</li> <li>-priority: idle time</li> <li>-# of yrs. as dealer</li> <li>-planning time (general)</li> <li>-% equity owned by dealer</li> </ul>	
26	Hay & Ross (1989)	Kansas (non-urban); multiple. All clients of a bus. development centre.	165	Minimum 3 yrs.	LS	Potentially Successful: -current on LTD -non-trivial ROA -non-trivial ROE versus "Troubled" & "Failed" firms	<ul style="list-style-type: none"> <li>-college degree</li> <li>-debt/equity ratio (absolute and industry-adjusted)</li> <li>-outside advisors</li> </ul>	<ul style="list-style-type: none"> <li>-total assets</li> <li>-# of employees</li> </ul>
27	Hills & Narayana (1989)	Chicago; multiple	63	Varied	CS	-small business award recipient	<ul style="list-style-type: none"> <li>-high quality product</li> <li>-good customer reputation</li> <li>-respond to customer desires</li> <li>-hard work &amp; devotion</li> <li>-high employee devotion/spirit</li> <li>-good mgt./employee relations</li> </ul>	
28	Ibrahim & Ellis (1987)	Montreal & Toronto; multiple	85	Varied	CS	-ROI > opportunity cost (study focus on failure)	<ul style="list-style-type: none"> <li>-experience</li> <li>-accounting knowledge</li> <li>-cash flow</li> <li>-mktg. skills</li> <li>-education</li> <li>-strategic planning &amp; goals</li> <li>-judgment</li> <li>-entrepreneurial values</li> <li>-attitude toward risk</li> </ul>	<ul style="list-style-type: none"> <li>-government regulations</li> <li>-taxes</li> <li>-interest rates</li> <li>-recession</li> <li>-competition</li> </ul>
29	Jorillo (1989)	U.S.; multiple	1902	Varied	LS	-sales growth	<ul style="list-style-type: none"> <li>-use of external resources</li> </ul>	



#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
30	Lorrain & Dussault (1988)	Quebec; manufacturing	70	Avg. 5 mos.	LS	-2-yr. survival	-business & managerial ideology -production behaviour -finance behaviour -business knowledge before start-up	-7 managerial & administrative behaviours -age -education -12 psychological characteristics (incl. risk, achievement, locus of control)
31	McCann (1991)	Southeast U.S.; high-tech	46	Median 8 yrs.	CS	-sales growth	-internal R&D for product breakthroughs -age of firm -sales scope (national/intnl. vs. local/regional)	-development stage /strategy choice -product category -ownership (public vs. private) -# of businesses
32	McDougall & Robinson (1988)	U.S.; computer & communications mfrs.	247	NR	CS	-ROI -mkt. share growth	-strategy -industry structure -interaction of strategy and industry structure	
33	Meritz (1989)	U.S.; process control instrument mfrs.	121	NR	CS	-employment growth vs. shrinkage	dependence on: -banks (-ve) -federal govt. agencies -parent/holding company -accounting function -engineering/R&D function -marketing function -public relations function	Varied according to statistical test, but included dependence on: -joint venture partners -industrial/commercial customers -suppliers -dealers/distributors -personnel/staffing function -production function
34	Miskin & Rose (1990)	Washington; multiple	346	NR	CS	-survival -profit level	<b>SURVIVAL</b> -experience in large business -self-perception as entrepreneurial type -familiarity with mkt. -product stage of development <b>PROFIT LEVEL</b> -experience in small business -previous ownership -self-perception -familiarity with mkt. -family support -friends' support	-experience in non-profit -personal life changes -business life changes -finance life changes -community support -perception of available financing -product type -proven market

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
35	Miskin & Rose (1990)	Washington; multiple	346	NR	CS	-profit level	MALE -previous ownership experience -self-perception as entrepreneurial type -familiar with mkt. -support from family  FEMALE -support from friends	
36	O'Farrell (1990)	Nova Scotia & New England; manufacturing	60	N.S. median 13 yrs.; N.E. 19 yrs.	CS	-sales per person -net output per person -ROS	-product/mkt. strategy -quality control -plant productivity -R&D commitment -managerial, supervisory & production personnel skills -# of local competitors	-transportation costs -degree of customer concentration -labour costs -formal qualifications
37	Ostgaard & Birley (1992)	England (2 counties); manufacturing, engineering, software development	159	Avg. 6 yrs.	CS	-sales growth -growth in # of employees -profit growth	-Some variables identified, but conceptual problems present.	
38	Potts (1990)	Washington; multiple	92	NR	CS	-survival > 5 years	-employment of accounting personnel (-ve) -use of accounting information -reliance on accountants' information	
39	Reynolds (1987)	Minnesota; multiple	551	Avg. 4 yrs.	LS	-social contribution (sales, exports, jobs) -survival	SOCIAL -firm development pattern -industry sector -start-up personnel problems  SURVIVAL -firm age -mgt. emphasis on finance -industry (retail only, -ve) -emphasis on implementing strategy	

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
40	Reynolds & Miller (1989)	Minnesota; multiple	550	5-10 yrs.	LS	-survival	-retail industry (-ve) -legal form (proprietorship, -ve) -higher first yr. sales -mgt. emphasis on finance -low price emphasis (-ve) -customized products emphasis -hrs. worked per week	-all other industries -urban context -financial support -gestation events prior to first sales -sales growth rates -start-up problems -age of principal -education -nature of career change to new firm -# of new firms started
41	Sandberg & Hofer (1987)	U.S.; multiple	17	NR	CS	-survival -ROI	-interaction of strategy and industry structure -industry structure	-entrepreneur characteristics
42	Slevin & Covin (1987)	Pittsburgh; manufacturing & service	79	Max. 5 yrs.	CS	-weighted-average subjective	HI-TECH INDUSTRIES -cash flow emphasis -frequent advertising -widespread advertising -extensive customer service/support -cost reduction emphasis -product scope  LO-TECH INDUSTRIES -new product development -large inventories of finished goods -attract/retain competent top mgrs. -reward employees based on performance	HI-TECH INDUSTRIES -44 competitive strategy variables  LO-TECH INDUSTRIES -46 competitive strategy variables
43	Smallbone (1990)	Outer London; multiple; (counselling recipients)	33	Min. 15 mos.; Max. 27 mos.	LS	-1-year survival	-founder unemployed at time of start-up (-ve)	
44	Smith et al. (1987)	U.S.; technology-based. (All gov't grant applicants)	159	NR	CS	-growth in # of employees -growth in # of employees/age -sales growth -sales growth/year -ROS -entrepreneur's annual income	-task motivation: -self-achievement -risk avoidance -feedback of results -personal innovation -planning for the future -firm type (adaptable vs. rigid)	-entrepreneur type (opportunistic vs. craftsman)
45	Smith et al (1988)	U.S.; electronic mfrs.	28	NR	CS	Subjective: (ROS, ROA, sales growth, overall perf.)	-decision comprehensiveness	

#	Study	Location; Industry	Sample Size	Firm Age	Method	Measure of Success	Significant Factors Contributing to Success	Not Significant
46	Sonfield & Moore (1990)	Long Island, N.Y.; multiple private firms	29	2-72 yrs.	CS	-size by sales	-self-reported strategic change	
47	Stuart & Abetti (1987)	NY state incubator; technical	24	Median 2 yrs.; Maximum 7 yrs.	CS	-Quantified (avg. of 6 measures) -Subjective (avg. of 5 measures)	QUANTIFIED -mkt. attractiveness (-ve) -entrepreneurship  SUBJECTIVE -R&D intensity (-ve) -compatibility -organic emphasis (-ve) -entrepreneurship	-mkt. dynamics -innovation uniqueness -gross margin -strategic aggressiveness
48	Stuart & Abetti (1988)	NY state, New England; technical	150	Varied.	CS	-Quantified: composite of 4, based on sales growth, employment growth, profitability, productivity  -Subjective: composite of 6: meeting plan, employee satisfaction, overall progress, survivability, ability to attract capital, cashflow	-education (-ve) -entrepreneurial, managerial, & financial experience (i.e. type of experience)	-strategy -organization -product life cycle -entrepreneurial type (opportunistic vs. craftsman) -personality -age of entrepreneur -amount of experience
49	VanderWerf (1991)	U.S. (& Japan); gallium arsenide digital integrated circuits	12	Max. 7 yrs.	CS	-sales level	-serving more mkt. segments -broader product range -less skilled workers -larger # of customers -more capital from outside investment -enter mkt on larger scale with greater growth goals	-experience outside the industry -more extensive customer support -developing name recognition more -using more channels of distribution
50	Willard et al. (1990)	U.S.; manufacturing (INC. 100)	126	NR	LS	-sales growth -sales per employee -return to investors		-founder-managed versus professionally managed
51	Williams et al. (1991)	U.S.; multiple	82	4 yrs.	LS	-mkt. share	-firm image -interaction of image with aggressive promotion, pricing & quality strategies	

## **APPENDIX 1.2**

### **SUMMARY OF RESULTS OF STUDIES LISTED IN APPENDIX 1.1 INVESTIGATING SUCCESS FACTORS (Organized by Type of Independent Variable)**

NOTE: + denotes positive relationship  
 - denotes negative relationship  
 \* denotes no relationship (i.e. not significant)

Studies are identified by the number assigned in Appendix 1.1, column 1.

PERSONAL CHARACTERISTICS

**INDEPENDENT VARIABLE**

**STUDY #**

PSYCHOLOGICAL CHARACTERISTICS

→ tolerance for ambiguity	3+
→ locus of control	3-, 20*, 30*
→ risk-taking	3-, 20-, 28-, 30*, 43-
→ achievement	3+, 30*, 43+
→ drive	12+
→ planning for future oriented	44+
→ personal innovation	44+
→ stress	4*
→ Type A	3*
→ personality	48*

AGE/EDUCATION/EXPERIENCE

→ previous experience in established firm	11+, 17+, 28+, 34+
→ managerial experience	12+, 13*, 20+, 21-, 22+, 48+, 41*
→ technical experience	12+
→ B.Comm. minimum (Ed. type)	12+
→ education level	13+, 17+, 20+, 21*, 26+, 28+, 30*, 36*, 48-, 41*
→ age	13+, 15+, 17-, 30*, 40*, 48*, 41*
→ # of F/T previous jobs	13-
→ start-up experience	11*, 19+, 20+, 40*, 48+, 41*
→ ownership experience	13*, 34+, 35+
→ marketing experience at start	19+
→ finance exp. at start	19*, 48+, 22+
→ type of previous organization	21*, 34+, 34*
→ amount of experience	48*
→ experience outside the industry	49*

ROLE MODELS

→ mentor	7-, 22+
→ entrepreneurial parents	20

SKILLS

→ entrepreneur's shortcomings	5+
→ competence	12+
→ ability to recognize opportunity	12+
→ breadth of mgt. skills	20+
→ business knowledge before start	30+
→ accounting knowledge	28+
→ marketing skills	28+
→ judgement	28+
→ entrepreneurial values	28+, 35+, 34+, 47+
→ familiar with the market	34+, 35+

## DEMOGRAPHICS

→ gender	13+, 21*
→ CEO type: founder vs. prof. mgr.	16*, 50*
→ race	21

## MOTIVATION/GOALS

→ goal oriented (craftsman)	13+, 44*, 48*
→ negative reason for leaving job	13+, 21*, 40*
→ goals/motivation	15*
→ goals when starting	21
→ business ideology	30+
→ founder unemployed @ start-up	43-

## MISCELLANEOUS

→ entrepreneur characteristics	41*
→ personal, business, finance life changes	34*

## FIRM CHARACTERISTICS & BEHAVIOUR

### MARKETING

→ advertising	2-, 42+
→ # mktg/sales staff	15-
→ mkt. research	20+
→ priority: time w/ customer	25+
→ mktg. function	33+
→ dealers/distributors	33*, 49*
→ develop name recognition	49*

### PRODUCTION

→ low costs	20+, 42+
→ production behaviour	30+, 33*, 36+
→ transportation costs	36*
→ labour costs	36*

### STRATEGY

→ product scope	10+, 42+, 49+
→ quality image	10+
→ innovativeness	10+
→ competitiveness/aggressiveness	14*
→ new products	15*, 42+
→ mode of entry	21+, 40+, 49+
→ high quality product	27+, 36+
→ good customer reputation	27+, 49*, 50+
→ strategic changes	46+, 44+
→ R&D	18+, 31+, 33+, 36+, 47-
→ cost leadership	10*, 40-
→ product category	31*, 34*
→ strategy	32+, 36+, 48*
→ joint venture partners	33*
→ product stage of development	34+, 48*
→ firm development pattern	39+
→ emphasis on implementing strategy	39+
→ customized products emphasis	40+
→ extensive customer service/support	42+, 49*

### PLANNING

→ strategic planning	5+, 28+
→ business plan	15-, 22+
→ monthly sales forecasts	15*, 25-

→ monthly bad debt forecasts	15*
→ monthly profit forecasts	15*
→ monthly cashflow forecasts	15*
→ monthly material requirements forecasts	15*
→ breadth of planning	20+
→ time spent planning	25-
→ decision comprehensiveness	45+

### FINANCE

→ finance function	5+, 39+, 40+
→ higher capital investment	20+, 21-
→ source of new funds	21+
→ D/E ratio	26+
→ cash flow	28+, 42+
→ fin. behaviour	30+
→ dependence on banks	33-
→ acctg. function	33+
→ financial support	40*
→ more capital from outside	49+

### START-UP

→ purchase vs. start	13+, 20-
→ outside job in 1st year	13-
→ initial capital	13+, 19+, 21*
→ outside capital	19*, 21*
→ founded by team	19*, 22+
→ clear & broad business idea	20+
→ planning time	20+
→ source of idea	21+
→ source of start-up assistance	21+
→ gestation events prior to start-up	40*
→ start-up problems	40*
→ formal vs. informal capital	40*

### OWNERSHIP

→ joint ownership	20+, 13+
→ % ownership	21+, (see 8), 25-
→ public vs. private	31*
→ parent/holding company	33
→ legal form (proprietorship)	40-

### INFORMATION

→ accountant important	13+, 38+, 38-
→ used professionals	20+
→ source of assistance	21+
→ outside advisors	26+

### DEMOGRAPHICS

→ size	13+, 17-, 22-, 26*
→ age	15+, 20*, 25-, 30+, 39+, 31+
→ total assets (size)	26*
→ higher 1st year sales	40+, 49+
→ sales growth rate	40*

### INCUBATOR

→ products similar	13+, 23+
→ customers similar	13+, 19*, 34+, 35+
→ suppliers similar	13+
→ business similar	12+
→ task similar	12+, 19+



→ size (employees)	23+
→ incubator publicly held	23+
→ size (sales)	23*
→ physical proximity	23*

#### EMPLOYEES

→ less specialization	20+
→ low personal command	20+
→ participative decision-making	20+
→ LE communication effective & assertive	20+
→ problems w/ employee performance	25-, 39+
→ high employee devotion/spirit	27+
→ good mgt/employee relations	27+
→ H/R function	33*
→ managerial, supervisory, production personnel skills	36+
→ ability to attract & retain competent top managers	42+
→ rewards based on performance	42+
→ firm type (adapt vs. rigid)	44+
→ organic emphasis	47-
→ less skilled workforce	49+
→ management team problems	5+ (failure)

#### MISCELLANEOUS

→ type of changes instituted	21+
→ time allocation	21+, 25+
→ hours worked	22+, 25+, 40+, 13*
→ hard work & devotion	27+
→ operating problems	5+ (failure)
→ F/A ratio	2+
→ short & LTD	2+
→ current assets	24+
→ current liabilities	24+
→ IS accounting measures	24*
→ attendants upsell	25-
→ mechanics upsell	25-
→ large inventory of finished goods	42+
→ number of businesses (single vs. multiple)	31*
→ compatibility (image, culture, skills)	47+
→ organization (formal, simple, organic)	48*

### ENVIRONMENTAL CHARACTERISTICS

#### NETWORKS

→ hours maintaining contacts	1+
→ density	1+
→ strength of ties	1+
→ size	1+
→ hours developing contacts	1*
→ contact frequency w/ core	1*
→ use of networks	7*

### SCANNING

- scanning frequency 6\*
- scanning behaviour (personal/impersonal sources) 6\*

### INDUSTRY

- growth 9+
- retail 13-, 39-, 40-
- concentration 17-
- competition 28\*, 36+
- structure 32+, 41+
- sector 39\*, 40\*, 21+

### QUALITIES (INDUSTRY)

- hostility 14-
- technological sophistication 14\*
- role of innovation 17+

### MARKET

- growth 17+
- customer concentration 17+, 36\*
- geographic dispersion 17-, 31+
- public sector sales in 1st year 19+
- broad markets 20+, 49+
- commercial customers 33\*
- proven market 34\*
- transportation costs 36\*
- urban context 40\*
- market attractiveness 47-
- larger # of customers 49+
- market problems 5+ (failure)

### MACRO

- government regulations 28\*
- taxes 28\*
- interest rates 28\*
- recession 28\*
- community support 34\*

### SUPPORT

- use of external resources 29+
- dependence on federal government agencies 33+
- family support 34+, 35+
- friends support 34+, 35+
- perception of available financing 34\*

### MISCELLANEOUS

- public relations function 33+
- suppliers 33\*
- location traffic volume 25-

### INTERACTIONS

- industry growth & strategy 9+
- motivation & minority ownership 8+
- development stage & strategy choice 31\*
- industry structure & strategy 32+, 41+
- image w/ promo/price & quality strategies 51+

**APPENDIX 1.3**

**REFERENCE LIST FOR APPENDIX 1.1**

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**APPENDIX 4**

**PHASE ONE PRE-TEST DOCUMENTATION**



**APPENDIX 4.1a**

**ORIGINAL STRATEGY DESCRIPTIONS  
PRIOR TO PHASE I PRE-TESTING**

## THE DEFENDER

The Defender attempts to locate and maintain a secure niche in a relatively stable product or service area. It does this by developing a single-core technology that is highly cost-efficient, with the aim of cornering a narrow segment of the market. The organization tends to offer a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, and so forth. There is little scanning of the environment for new opportunities. The administrative system is concerned mainly with intensive planning, cost-efficiency, and centralized control.

## THE PROSPECTOR

The Prospector is an organization which almost continually searches for market opportunities, and it regularly experiments with potential responses to emerging market trends. Thus, this organization often is the creator of change and uncertainty to which its competitors must respond. However, because of its strong concern for product innovation and market innovation, the Prospector firm usually is not completely efficient. The organization values being "first in" in new product and market areas even if not all of these efforts prove to be highly profitable. The firm tends toward low formalization and decentralized control to retain flexibility.

## THE ANALYZER

The word that best describes the Analyzer's adaptive approach is balance; in seeking to minimize risk while maximizing the opportunity for profits, this organization combines the strategies of the Defender and Prospector. It maintains a stable base of traditional products and customers but also monitors its competitors and markets very closely for new ideas and opportunities. The Analyzer is rarely the first to try a new product or market; it tends to be a follower and it can be very quick to imitate a successful product or follow a competitor into an attractive market. While this firm strives to be efficient in the production of its core products, it must adopt a structure which balances the need for efficiency with the need for flexibility so that it can respond to new opportunities. In this type of firm, marketing, engineering and production play an important role.

## THE REACTOR

The Reactor is an organization in which top managers frequently perceive change and uncertainty occurring in their organizational environments but are unable to respond consistently or effectively. The organization is usually not as aggressive in maintaining established products and markets as some of its competitors, nor is it willing to take as many risks as other companies. It tends to respond to the environment only when forced to do so.

The instability and frequent poor performance of the Reactor arises from its inability to respond appropriately to its environment. This situation might have been created by the absence of a clearly-defined strategy, an inability to shape its structure and processes to fit the chosen strategy, or by clinging to a strategy which is inappropriate to a changed environment.

**APPENDIX 4.1b**

**SAMPLE LETTER SENT TO PHASE I  
QUESTIONNAIRE PRE-TEST  
PARTICIPANTS**

*Name, Title*  
*Firm Name*  
*Address #1*  
*Address #2*  
*City, NF, Postal Code*

June 28, 1994

Dear *Name*:

RE: RESEARCH QUESTIONNAIRE PRE-TEST

Here is a copy of the questionnaire I mentioned in our telephone conversation today. Although I would ask that you try to complete as much of the questionnaire as possible, I'd like to emphasize that the only section I will ask you to return to me is Section II (i.e. the last two pages of the questionnaire). I will not see your answers to Section I (you may keep or destroy this Section), so you can be assured that those responses will remain known only to you.

When we discuss the survey, I won't ask you what businesses you identified. Instead, I am more interested in whether you found it difficult to think of businesses that match the descriptions. Were the descriptions clear or vague? Realistic? Were some descriptions more difficult than others? Etc..

Thank you for taking the time to complete the questionnaire. I'll call you tomorrow to discuss the results or arrange a meeting. In the meantime, please feel free to call me at 737-8507 (w) or 895-3504 (h) if you have any questions.

Sincerely,

---

Dennis Hanlon

**APPENDIX 4.1c**

**QUESTIONS UTILIZED TO ELICIT FEEDBACK  
DURING QUESTIONNAIRE PRE-TEST**

Was the purpose of the study clear?

Were the instructions clear?

How many businesses were you able to identify? Were you missing any categories?

Were all of the firms in St. John's?

Were they small or large?

Were they in different industries?

Were any of the firms your... competitors?  
... suppliers?  
... customers?

Did you name firms with which you personally deal as a private consumer?

Were any of the descriptions particularly difficult?

Did the descriptions seem realistic?

Were the labels such as "defender" and "prospector" helpful? Should they be included?

How long did it take you to complete the questionnaire?

Any other observations, comments?

**APPENDIX 4.2**

**PHASE ONE MAIL SURVEY  
COVER LETTER,  
QUESTIONNAIRE,  
AND  
FOLLOW-UP LETTERS**

Date

« 1»

« 2»

Dear « 1»:

During the period 1980-89 small businesses created 90% of the new jobs in Atlantic Canada and about 87% of new jobs in all of Canada. Since the contribution of these businesses is so vital to our economic development, it is hardly surprising that "why small firms succeed" is considered the central question of small business research.

To address this question, the P. J. Gardiner Institute for Small Business is currently conducting a three-stage research project on the personal and professional relationships an entrepreneur establishes in order to convert a business idea into a successful venture. Your business is one of a small number of firms which are being asked to provide information for **Phase I** of this research project. The goal of this Phase I survey is to compile a short list of businesses that are well-known to most Newfoundland entrepreneurs.

We understand that as a small business owner/manager, your time is very limited. Your participation is therefore being requested for Phase I only. For the later stages of the study a different group of entrepreneurs will be selected. An important part of the later phases of the study will involve asking the next group of entrepreneurs to compare their businesses to several of the most well-known businesses identified during Phase I.

Because only a small number of businesses are being surveyed during Phase I, it is important that each questionnaire be completed and returned. The questionnaire is very brief and should only take 15 minutes or so to complete. All responses will be treated in strictest confidence and will remain completely anonymous.

With your assistance we hope to be in a better position to assist small business owners in meeting the challenges that lie ahead. If you would like to receive a summary of the results, simply write "send results" on the back of the return envelope and print your name and address below it.

I will gladly answer any questions you might have, so please feel free to call or write. My telephone number is 737-8507.

Thank you for your assistance.

Sincerely,

---

Dennis J. Hanlon  
Project Director



VENTURE SUPPORT SYSTEMS RESEARCH PROJECT  
PHASE ONE

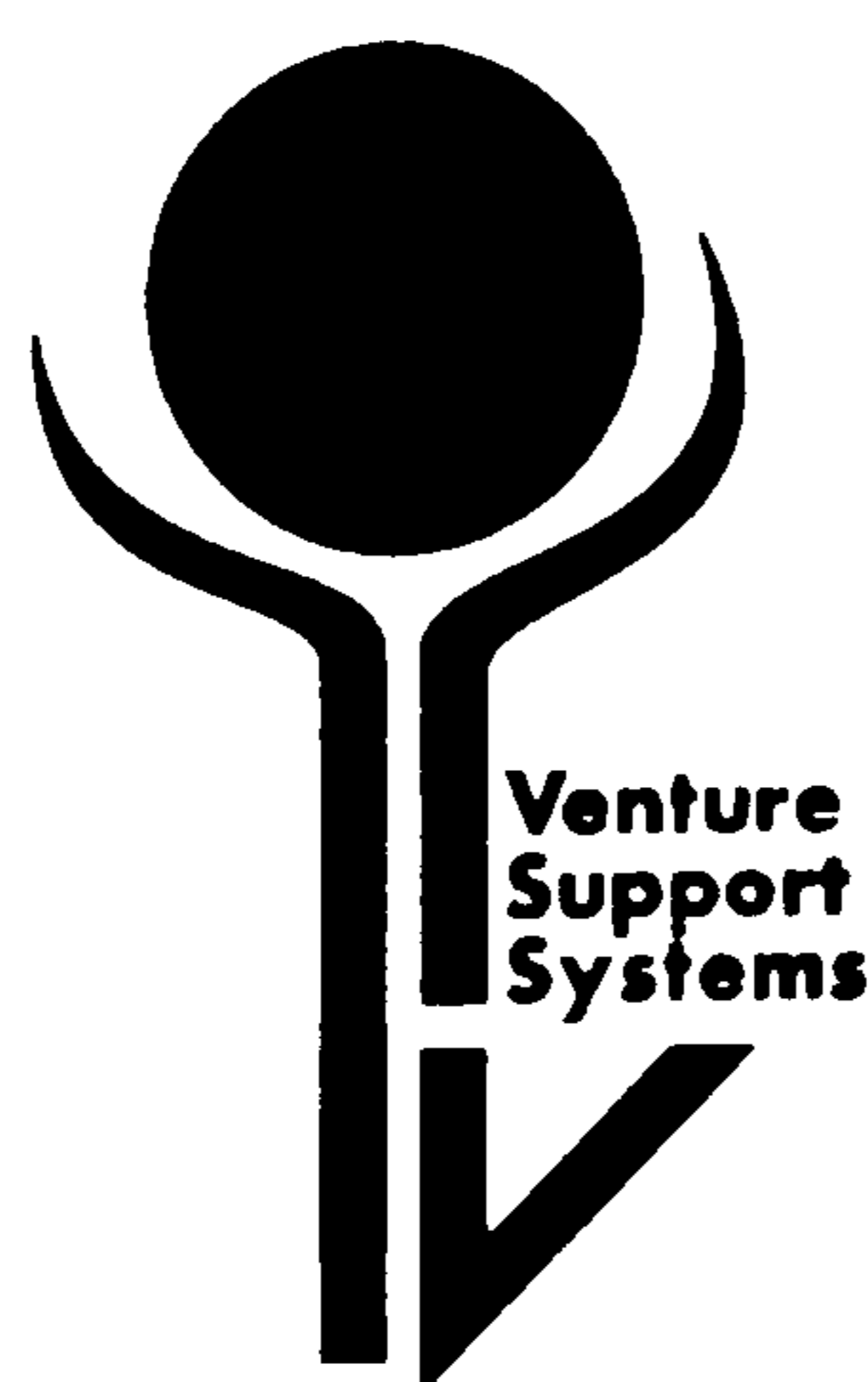
THE IDENTIFICATION OF WELL-KNOWN BUSINESSES  
REPRESENTING GENERIC STRATEGIES

SMALL BUSINESS OWNER/MANAGER QUESTIONNAIRE

Dennis J. Hanlon  
Project Director  
Tel: (709) 737-8507  
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email: dhanlon@kean.ucs.mun.ca

P. J. Gardiner Institute for Small Business Studies  
Faculty of Business Administration  
Memorial University of Newfoundland  
St. John's, Newfoundland  
A1B 3X5

July 1994



# PHASE ONE QUESTIONNAIRE

## Project Description

This questionnaire is the first phase of a three-stage research project designed to investigate the supportive relationships entrepreneurs establish in order to translate business ideas into successful ventures. The purpose of the Phase One Questionnaire is to generate a list of businesses which are well known to most Newfoundland entrepreneurs, and which represent the different strategies commonly adopted by business firms.

## Instructions

### **IMPORTANT: PLEASE READ BEFORE COMPLETING QUESTIONNAIRE**

The questionnaire should be filled out by the owner or general manager of your firm. It is divided into two short sections. The first section includes four short paragraphs describing different types of businesses. After reading each paragraph, you are asked to list the names of two firms which you feel fit the description and which you also believe would be well known to most entrepreneurs here in Newfoundland.

The profiles provided are not intended to suggest good or bad management practices. The businesses you name can be of any size (large or small) and can come from any industry. All of the businesses should be located in the province of Newfoundland and Labrador. Please try to provide the names of two businesses for each description. In a case where you are only able to name one or no businesses, simply leave the remaining space(s) blank and proceed to the next category or question.

In deciding whether or not a particular firm matches a description, you should try to consider the firm's behaviour over the past 5-10 years or so. There are no right or wrong answers. Instead, we are interested in your perceptions of the firms.

Please try to answer all of the questions as honestly and as completely as possible, and do not proceed to the next description until you are finished the section you are working on. All responses will be treated in strictest confidence and all participants are assured of complete anonymity.

If you have any questions, please feel free to call.

*Thank you for your help.*

PLEASE PRINT YOUR ANSWERS

SECTION I

The following four paragraphs describe different types of businesses. Please read each description carefully. For each description provided, please name two Newfoundland businesses that you feel match the description and are well known to most Newfoundland entrepreneurs.

DESCRIPTION #1

THE DEFENDER FIRM

We attempt to maintain and increase demand for our existing products and services by continually developing such things as higher quality, superior services, and lower prices. We are not actively trying to develop a larger product line or new services nor are we actively searching for new markets. We stick to what we know how to do and do it as well as or better than anyone else.

In my opinion, the following are two examples of well-known Newfoundland firms that fit the above description:

1.
2.

DESCRIPTION #2

THE PROSPECTOR FIRM

We continually extend or broaden our product line with new products, services, or product improvements. We emphasize the importance of being the first to offer new or improved products to our customers. We feel that we can be leaders in the industry in our area, and we are willing to take the necessary risks on introducing promising new products or services, or moving into promising new markets.

In my opinion, the following are two examples of well-known Newfoundland firms that fit the above description:

- |    |
|----|
| 1. |
| 2. |

DESCRIPTION #3

THE ANALYZER FIRM

We attempt to maintain a stable business with a basic line of products and services, but at the same time we try to add one or more new products or services which have succeeded for other firms in the industry. We don't want to be the first in our area to move into a new market or to offer an unproven new product or service, but we try to be close behind with a similar product or service that is competitive.

In my opinion, the following are two examples of well-known Newfoundland firms that fit the above description:

1.
2.

DESCRIPTION #4

THE REACTOR FIRM

Unlike the previous three types of firms, we do not follow a specific program or plan for making us more competitive. When we are faced with strong threats to our business and the possibility of losing customers we may make changes in our products/services, our competitive methods, or our customer base. Normally, however, when we are faced with changes in the marketplace we like to wait and see what happens before making important decisions because it's difficult to predict the marketplace.

In my opinion, the following are two examples of well-known Newfoundland firms that fit the above description:

1.	
2.	

**SECTION II**

**2.1** Are you the owner of this business? (Circle number of your answer)

- 1 YES
- 2 NO

**2.2** Are you the senior manager of this business? (Circle)

- 1 YES
- 2 NO

**2.3** Gender:

- 1 MALE
- 2 FEMALE

**2.4** In which age group do you belong?

- 1 UNDER 25
- 2 25-29 YEARS
- 3 30-34 YEARS
- 4 35-39 YEARS
- 5 40-44 YEARS
- 6 45-49 YEARS
- 7 50 YEARS OR OLDER

**2.5** What is the highest level of education that you have achieved? (Circle only one)

- 1 DID NOT COMPLETE HIGH SCHOOL
- 2 COMPLETED HIGH SCHOOL
- 3 COMPLETED VOCATIONAL/TRADE SCHOOL
- 4 UNIVERSITY UNDERGRADUATE DEGREE
- 5 UNIVERSITY GRADUATE DEGREE
- 6 OTHER, SPECIFY: \_\_\_\_\_

**2.6** Which of the following best identifies your business? (Circle only one)

- 1 RETAIL
- 2 WHOLESALE
- 3 MANUFACTURING
- 4 PRIMARY RESOURCE BASED
- 5 CONSTRUCTION
- 6 SERVICE

**2.7** Including the owner(s), how many employees does your business have?  
(Number)

- \_\_\_\_\_ FULL-TIME
- \_\_\_\_\_ PART-TIME
- \_\_\_\_\_ SEASONAL FULL-TIME
- \_\_\_\_\_ SEASONAL PART-TIME

Is there anything else you would like to tell us that might aid us in identifying well-known firms which match the strategy descriptions provided? If so, please use this space for that purpose.



---

*Your contribution to this effort is genuinely appreciated. If you would like to receive a summary of the results, please print your name and address on the back of the return envelope (NOT on the questionnaire).*



August 15, 1994

« 1 »

Dear « 2 »:

Approximately ten days ago a questionnaire seeking your opinion on well-known Newfoundland firms was mailed to you. Your name was drawn in a random sample of businesses located in our province.

If you have already completed and returned the questionnaire to us please accept our sincere thanks. If not, please do so today. Because it has been sent to only a small but representative sample of Newfoundland businesses, it is extremely important that yours also be included in the study if the results are to accurately represent the opinions of owner/managers in Newfoundland.

If by some chance you did not receive the questionnaire, or it got misplaced, please call me right now collect (737-8507) or send me a fax (737-7680) and I will put another one in the mail to you today.

Sincerely,

Dennis J. Hanlon  
Project Director

« 1 »

September 2, 1994

Dear « 2 »:

About four weeks ago I wrote to you seeking your opinion on well-known firms in Newfoundland. As of today, there are still a number of questionnaires which have not yet been received.

This research project was undertaken in the belief that the opinions of small businesses are important and should be taken into account when designing training programs for entrepreneurship. The results of this study are expected to increase our understanding of how entrepreneurs build support for their ideas, both inside and outside the firm.

If you haven't yet completed the questionnaire, please take this opportunity to do so now. Your business was chosen to participate in this study using a scientific sampling process where each firm had an equal chance of being selected. Because only a small number of businesses are being included, your response is indeed important if the results are to accurately represent the opinions of Newfoundland firms across the province.

The questionnaire should be completed by the owner or general manager of your business. In the event that your questionnaire has been misplaced or lost in the mail, a replacement is enclosed. Please take a few minutes to fill out and return the questionnaire today.

Thank you for your cooperation.

Sincerely,

Dennis Hanlon  
Project Director  
Venture Support Systems  
Research Project

P.S. A number of replies have already been received. If you've already sent in your questionnaire, please accept my sincere thanks and destroy the enclosed materials.

**APPENDIX 4.3**

**PHASE 2: LIST OF ELEMENTS**

## PHASE II: LIST OF ELEMENTS<sup>1</sup>

1. My firm as it was five years ago
2. My firm as it is now
3. My firm as I would like it to be in five years
4. My firm as I would like it to be in 10 years
5. Firm A
6. Firm B
7. Firm C
8. Firm D
9. Firm E
10. Firm F
11. Firm G
12. Firm H
13. Firm I

---

<sup>1</sup> The real names of the firms listed in Elements 5 - 13 have not been revealed in this report in order to protect the anonymity of those firms.

**APPENDIX 4.4**

**COMPUTER PROGRAMMING CODE  
FOR  
FIC SCORE  
AND  
CHI-SQUARE SCORE**

## EXCEL 5.0 VISUAL BASIC MACRO PROGRAM TO CALCULATE FIC SCORE

```

'
' FIC_Calc Macro
' Calculates FIC Score
'   of a Rep Grid Matrix
' Macro recorded 21/06/95 by D. Hanlon
' Adapted from Landfield (1971) programme

' VARIABLES FOR ROW AND COLUMN COMPARISONS
' NR = number of rows
' NC = number of columns
' NN(I,J) = adjusted data matrix
'   (Where grid scores converted to values of 1, 2 or 0)
' KK(I,K) = row comparison output matrix
' LL(J,L) = column comparison output matrix
' MU = MUTUAL EXCLUSIONS (0-0 combinations)
' LK = MATCHED VALUES (1-1 or 2-2 combinations)
' NA = UNMATCHED VALUES (1-2 or 2-1 combinations)

Option Base 1
Dim I As Integer, J As Integer, K As Integer, C As Integer, X As Integer
Dim NN(12, 8)
Dim KK(12, 12)
Dim LL(8, 8)
Dim KI As Integer, NR As Integer, NC As Integer, NV As Integer, NZ As Integer
Dim MU As Integer, LK As Integer, NA As Integer

Sub FIC_Calc()

' Obtain revised data matrix for FIC calculations

X = 19
For I = 1 To 12
    X = X + 1
    For J = 1 To 8
        If Cells(I, J).Value < 4 Then
            Cells(X, J).Value = 1
        ElseIf Cells(I, J).Value > 4 Then
            Cells(X, J).Value = 2
        Else Cells(X, J).Value = 0
        End If
    Next J
Next I

' Input adjusted scores into matrix variable NN
C = 19
For I = 1 To 12
    C = C + 1
    For J = 1 To 8
        NN(I, J) = Cells(C, J).Value
    Next J
Next I

' Set KK(I,K) to zero
For I = 1 To 12
    For K = 1 To 12
        KK(I, K) = 0
    Next K
Next I

' Set LL(J,L) to zero
For J = 1 To 8
    For L = 1 To 8
        LL(J, L) = 0
    Next L
Next J

ROWCOMPARE
COLCOMPARE
SETUPSHEET
End Sub

Function ROWCOMPARE()

' Begin Row comparisons here
NR = 12
NC = 8
NV = NR - 1
For I = 1 To NV
    KI = I + 1
    For K = KI To NR

```

```

    MU = 0
    LK = 0
    NA = 0
    For J = 1 To NC
        If (NN(I, J) = NN(K, J) And NN(K, J) = 0) Then MU = MU + 1
        If (NN(I, J) = NN(K, J) And NN(K, J) <> 0) Then LK = LK + 1
        If (NN(I, J) <> NN(K, J) And NN(K, J) <> 0 And NN(I, J) <> 0) Then NA = NA - 1
    Next J
    For criterion score >=7
        If (MU = 6) Then MU = MU - 1
        If (MU = 7) Then MU = MU - 2
        If (MU = 8) Then MU = MU - 3
        If (NA >= LK) Then KK(I, K) = -(NA + MU)
        If (NA < LK) Then KK(I, K) = LK + MU
    Next K, I

    Write FIC row scores in cells
    Dim P As Integer, Q As Integer
    For I = 1 To 12
        P = I + 37
        For K = 1 To 12
            Q = K + 1
            Cells(P, Q).Value = KK(I, K)
        Next K
    Next I

End Function

```

Function COLCOMPARE()

```

    Begin column comparisons here
    NZ = NC - 1
    For J = 1 To NZ
        LJ = J + 1
        For L = LJ To NC
            MU = 0
            LK = 0
            NA = 0
            For I = 1 To NR
                If (NN(I, J) = NN(I, L) And NN(I, L) = 0) Then MU = MU + 1
                If (NN(I, J) = NN(I, L) And NN(I, L) <> 0) Then LK = LK + 1
                If (NN(I, J) <> NN(I, L) And NN(I, L) <> 0 And NN(I, J) <> 0) Then NA = NA + 1
            Next I
            For criterion score of 10, 11 or 12 (i.e. 80% or 9.6 of 12)
                If MU >= 7 And MU <= 9 Then MU = MU - 1
                If MU = 10 Then MU = MU - 2
                If MU >= 11 Then MU = MU - 3
                If NA >= LK Then LL(J, L) = -(NA + MU)
                If NA < LK Then LL(J, L) = LK + MU
            Next L, J
        Next L
    Next J

    Write FIC column scores in cells
    For J = 1 To 8
        P = J + 55
        For L = 1 To 8
            Q = L + 1
            Cells(P, Q).Value = LL(J, L)
        Next L
    Next J

End Function

```

Sub SETUPSHEET()

```

    Adjusts position of matrices and adds labels
    Cells.Select
    Selection.ColumnWidth = 4
    Range("A18").Select
    Selection.Font.Bold = True
    ActiveCell.FormulaR1C1 = "Revised Matrix for FIC Score Calculation"
    Range("A34").Select
    Selection.Font.Bold = True
    ActiveCell.FormulaR1C1 = "FIC SCORES - ROW COMPARISONS (ONLY ABSOLUTE VALUES >=7)"
    Range("A37:M37").Select
    Selection.Font.Bold = True
    Range("A37:A49").Select
    Selection.Font.Bold = True
    Range("A53").Select
    Selection.Font.Bold = True
    ActiveCell.FormulaR1C1 = "FIC SCORES - COLUMN COMPARISONS (ONLY ABSOLUTE VALUES >=10)"

    Print row labels for row score matrix output
    C = 1

```

```

For J = 2 To 13
    With ActiveSheet.Cells(37, J)
        .Formula = "R" & C
        .Font.Bold = True
    End With
    C = C + 1
Next J
' Column labels
C = 1
For I = 38 To 49
    With ActiveSheet.Cells(I, 1)
        .Formula = "R" & C
        .Font.Bold = True
    End With
    C = C + 1
Next I

' Apply grid borders to fic row matrix
Range("A37:M49").Select
With Selection.Borders(xlLeft)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlRight)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlTop)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlBottom)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
Selection.BorderAround Weight:=xlThin, ColorIndex:=xlAutomatic

' Print row labels for column score matrix output
C = 1
For J = 2 To 9
    With ActiveSheet.Cells(55, J)
        .Formula = "C" & C
        .Font.Bold = True
    End With
    C = C + 1
Next J
' Column labels
C = 1
For I = 56 To 63
    With ActiveSheet.Cells(I, 1)
        .Formula = "C" & C
        .Font.Bold = True
    End With
    C = C + 1
Next I

' Apply grid borders to fic column matrix
Range("A55:I63").Select
With Selection.Borders(xlLeft)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlRight)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlTop)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
With Selection.Borders(xlBottom)
    .Weight = xlThin
    .ColorIndex = xlAutomatic
End With
Selection.BorderAround Weight:=xlThin, ColorIndex:=xlAutomatic

Range("A37:M37").HorizontalAlignment = xlRight
Range("A55:I55").HorizontalAlignment = xlRight

' Move original data matrices down and add titles at top of page
Range("A1:H12").Select
Selection.Cut
Range("A5").Select

```



```

ActiveSheet.Paste
Range("A3").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "Original Data Matrix"
Range("A1").Font.Bold = True

```

SHADING

End Sub

```

Sub SHADING()
Range("B38").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B39:C39").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B40:D40").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B41:E41").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B42:F42").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B43:G43").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B44:H44").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B45:I45").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B46:J46").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B47:K47").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B48:L48").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic
End With
Range("B49:M49").Select
With Selection.Interior
.ColorIndex = 16
.Pattern = xlSolid
.PatternColorIndex = xlAutomatic

```

End With

```
Range("B56").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B57:C57").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B58:D58").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B59:E59").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B60:F60").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B61:G61").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B62:H62").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B63:I63").Select
With Selection.Interior
    .ColorIndex = 16
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
End With
```

```
Range("B64").Select
```

' Create Boxes for Score Totals and add labels

```
Range("P45").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "ROW SCORE"
Range("P47:Q49").Select
Selection.BorderAround Weight:=xlMedium, ColorIndex:=xlAutomatic
```

```
Range("P59").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "COLUMN SCORE"
Range("P61:Q63").Select
Selection.Borders(xlLeft).LineStyle = xlNone
Selection.Borders(xlRight).LineStyle = xlNone
Selection.Borders(xlTop).LineStyle = xlNone
Selection.Borders(xlBottom).LineStyle = xlNone
Selection.BorderAround Weight:=xlMedium, ColorIndex:=xlAutomatic
```

```
Range("P67").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "TOTAL FIC"
```

```
Range("P68").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "SCORE"
```

```
Range("P70:Q72").Select
Selection.Borders(xlLeft).LineStyle = xlNone
Selection.Borders(xlRight).LineStyle = xlNone
Selection.Borders(xlTop).LineStyle = xlNone
Selection.Borders(xlBottom).LineStyle = xlNone
Selection.BorderAround Weight:=xlMedium, ColorIndex:=xlAutomatic
```

```

' Move to top of sheet
Range("A1").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "FIC SCORE ANALYSIS"
Range("A1").Select
ActiveWindow.DisplayGridlines = False
End Sub

```

## EXCEL 5.0 VISUAL BASIC MACRO PROGRAM TO CALCULATE CHI SCORE

```

'
' Chi_Calc Macro
' Calculates the Chi Square Score of a
' Rep Grid Matrix
' Macro recorded 2/5/96 by D. Hanlon
' Adapted from Landfield & Schmittiel (1983)
' Provides a measure of Cognitive Integration
' This program designed to work with a 12 X 8 grid
' using a likert-type rating scale of 1-7

' NR = number of rows
' NC = number of columns

Option Base 1
Dim I As Integer, J As Integer, X As Integer

Sub Chi_Calc()

Cells.Select
Selection.ColumnWidth = 5

NR = 12
NC = 8

' Obtain revised data matrix for Chi Square Calculations
' and prints revised values in worksheet beginning at row 20
' Revised matrix is derived from absolute value of the deviation
' from mid-point of the likert rating scale

X = 19
For I = 1 To NR
    X = X + 1
    For J = 1 To NC
        If Cells(I, J) = 4 Then
            Cells(X, J) = 0
        ElseIf Cells(I, J) = 3 Or Cells(I, J) = 5 Then
            Cells(X, J) = 1
        ElseIf Cells(I, J) = 2 Or Cells(I, J) = 6 Then
            Cells(X, J) = 2
        Else Cells(X, J) = 3
        End If
    Next J
Next I

' CALCULATE CHI SQUARE VALUES FOR ROWS

' ChiRow(K) = Chi Score for Row K
' EZ = Expected Value of Zero Rating
' ENZ = Expected Value of Non-Zero Rating

Dim K As Integer, L As Integer
Dim ChiRow(12)
EZ = 1 / 7 * 8
ENZ = 2 / 7 * 8

' Count frequencies of ratings
' F0 = Frequency of 0's
' F1 = Frequency of 1's
' F2 = Frequency of 2's
' F3 = Frequency of 3's

I = 19
For K = 1 To NR

```

```

I = I + 1
F0 = 0
F1 = 0
F2 = 0
F3 = 0

```

```

For J = 1 To NC
If Cells(I, J).Value = 0 Then
    F0 = F0 + 1
Elseif Cells(I, J).Value = 1 Then
    F1 = F1 + 1
Elseif Cells(I, J).Value = 2 Then
    F2 = F2 + 1
Else F3 = F3 + 1
End If
Next J

```

' Apply the Chi Square formula to the obtained distribution of ratings

$$\text{ChiRow}(K) = (((EZ - F0) ^ 2) / EZ) + (((ENZ - F1) ^ 2) / ENZ) + (((ENZ - F2) ^ 2) / ENZ) + (((ENZ - F3) ^ 2) / ENZ)$$

```

Print Chi values on spreadsheet
Cells(40, K).Value = ChiRow(K)
Next K

```

' CALCULATE CHI SQUARE VALUES FOR COLUMNS

```

ChiCol(L) = Chi Score for Column L
EZC = Expected Value of Zero Rating
ENZC = Expected Value of Non-Zero Rating

```

```

Dim ChiCol(8)
EZC = 1 / 7 * 12
ENZC = 2 / 7 * 12

```

' Count frequencies of ratings

```

FF0 = Frequency of 0's
FF1 = Frequency of 1's
FF2 = Frequency of 2's
FF3 = Frequency of 3's

```

```

For J = 1 To NC

```

```

    FF0 = 0
    FF1 = 0
    FF2 = 0
    FF3 = 0

```

```

For I = 20 To 31
If Cells(I, J).Value = 0 Then
    FF0 = FF0 + 1
Elseif Cells(I, J).Value = 1 Then
    FF1 = FF1 + 1
Elseif Cells(I, J).Value = 2 Then
    FF2 = FF2 + 1
Else FF3 = FF3 + 1
End If
Next I

```

' Apply the Chi Square formula to the obtained distribution of ratings

$$\text{ChiCol}(J) = (((EZC - FF0) ^ 2) / EZC) + (((ENZC - FF1) ^ 2) / ENZC) + (((ENZC - FF2) ^ 2) / ENZC) + (((ENZC - FF3) ^ 2) / ENZC)$$

```

Print Chi values on spreadsheet
Cells(46, J).Value = ChiCol(J)
Next J

```

```

Range("A18").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "Revised Matrix"
Rows("38:38").Select
Selection.Font.Bold = True
With Selection
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlBottom
    .WrapText = False
    .Orientation = xlHorizontal
End With

```

```

Range("A38").Select
ActiveCell.FormulaR1C1 = "R1"
Range("B38").Select
ActiveCell.FormulaR1C1 = "R2"
Range("C38").Select
ActiveCell.FormulaR1C1 = "R3"
Range("D38").Select
ActiveCell.FormulaR1C1 = "R4"
Range("E38").Select
ActiveCell.FormulaR1C1 = "R5"
Range("F38").Select
ActiveCell.FormulaR1C1 = "R6"
Range("G38").Select
ActiveCell.FormulaR1C1 = "R7"
Range("H38").Select
ActiveCell.FormulaR1C1 = "R8"
Range("I38").Select
ActiveCell.FormulaR1C1 = "R9"
Range("J38").Select
ActiveCell.FormulaR1C1 = "R10"
Range("K38").Select
ActiveCell.FormulaR1C1 = "R11"
Range("L38").Select
ActiveCell.FormulaR1C1 = "R12"
Range("N37").Select
Selection.Font.Bold = True
With Selection
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlBottom
    .WrapText = False
    .Orientation = xlHorizontal
End With
ActiveCell.FormulaR1C1 = "Avg."
Range("N38").Select
ActiveCell.FormulaR1C1 = "RowChi"
Range("N40").Select
ActiveCell.FormulaR1C1 = "=AVERAGE(RC[-13]:RC[-2])"
ActiveWindow.SmallScroll Down:=2
Rows("44:44").Select
Selection.Font.Bold = True
With Selection
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlBottom
    .WrapText = False
    .Orientation = xlHorizontal
End With
Range("A44").Select
ActiveCell.FormulaR1C1 = "C1"
Range("B44").Select
ActiveCell.FormulaR1C1 = "C2"
Range("C44").Select
ActiveCell.FormulaR1C1 = "C3"
Range("D44").Select
ActiveCell.FormulaR1C1 = "C4"
Range("E44").Select
ActiveCell.FormulaR1C1 = "C5"
Range("F44").Select
ActiveCell.FormulaR1C1 = "C6"
Range("G44").Select
ActiveCell.FormulaR1C1 = "C7"
Range("H44").Select
ActiveCell.FormulaR1C1 = "C8"
Range("A36").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "Chi Values for ROWS"
Range("A42").Select
Selection.Font.Bold = True
ActiveCell.FormulaR1C1 = "Chi Values for COLUMNS"
Range("N43:N44").Select
Selection.Font.Bold = True
With Selection
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlBottom
    .WrapText = False
    .Orientation = xlHorizontal
End With
Range("N43").Select
ActiveCell.FormulaR1C1 = "Avg."
Range("N44").Select
ActiveCell.FormulaR1C1 = "ColChi"
Range("N46").Select
ActiveCell.FormulaR1C1 = "=AVERAGE(RC[-13]:RC[-6])"
ActiveWindow.SmallScroll Down:=3

```

```
Range("N50").Select
ActiveCell.FormulaR1C1 = "(R[-10]C+R[-4]C)"
Range("M49:O51").Select
Selection.Borders(xlLeft).LineStyle = xlNone
Selection.Borders(xlRight).LineStyle = xlNone
Selection.Borders(xlTop).LineStyle = xlNone
Selection.Borders(xlBottom).LineStyle = xlNone
Selection.BorderAround Weight:=xlThin, ColorIndex:=xlAutomatic
```

```
Range("I50").Select
Selection.Font.Bold = True
With Selection.Font
    .Name = "Arial"
    .FontStyle = "Bold"
    .Size = 10
    .Strikethrough = False
    .Superscript = False
    .Subscript = False
    .OutlineFont = False
    .Shadow = False
    .Underline = xlNone
    .ColorIndex = xlAutomatic
End With
ActiveCell.FormulaR1C1 = "CHI SQUARE SCORE"
Range("I51").Select
```

```
End Sub
```

**APPENDIX 4.5**

**LETTER TO REGISTRY OF DEEDS AND COMPANIES  
(PHASE FOUR)**

March 19, 1996

Ms. Susan Churchill, Registrar of Companies  
Registry of Deeds and Companies  
Government of Newfoundland and Labrador  
P.O. Box 8700  
Confederation Building  
St. John's, Newfoundland, A1B 4J6

Dear Ms. Churchill:

Further to our telephone conversation of March 15th, I would like to request your assistance in gaining access to the Registry's computerized database of incorporated companies. Essentially, I would like to be provided with a list of companies incorporated in the year 1993, although the list might be effectively shortened by selecting according to some screening criteria which I will describe in a later section.

The information will be used in support of a research project I am conducting on newly-incorporated small firms in Newfoundland and Labrador. The purpose of the research is to investigate the support systems that entrepreneurs assemble to help them realize their visions for the business. I've enclosed a short summary which explains the purpose of the research and also demonstrates why the results are of particular importance to the province. It's important to note that this research has extended over three years and is now in its fourth and final phase. Moreover, the information required represents a one-time request; I do not need access to the database on an ongoing basis.

The list of companies itself will constitute a research population from which a scientific random sample will be drawn. Firms which are selected in the random sample will be asked to participate in the last phase of the research. Although the sampling process is not a particularly exciting phase, it is ultimately of crucial importance in determining the extent to which the results are generalizable to the remainder of firms in the province which were not sampled for this research. I believe that your database is the only one available which would not compromise the research in some way.

Earlier I mentioned the possibility of screening some companies out before such a list is printed. I don't know the capabilities of your database, but what I have in mind is selecting firms (records) from the database according to certain criteria. The criteria are as follows:

- 1) Include only those firms incorporated in 1993.
- 2) Include only firms categorized as LOCAL or INSURANCE in the "TYPE" field. (i.e. eliminate Dominion, Foreign and Non-Profit firms)



If this can be done (I'd appreciate any suggestions you might have), then I would request the following information be included in the printed list of firms:

Record (Company) #  
Name of business  
Status  
Incorporation date  
Mailing address  
Registered head office  
Postal code

If records cannot be screened out by TYPE (above), then I would also request that TYPE be included in the information on the printout.

As I mentioned in our telephone conversation, I was given to believe that this type of search request would not pose any problems, and that the search would probably be completed during off-hours -- perhaps on a week-day evening, for example. I also understand your office is very busy and that the time frame for handling such requests is normally much longer than a few weeks. Nevertheless, I would be very much obliged if this matter could be dealt with in the next couple of weeks. A delay of a month or so now could prevent the project from being completed by the summer's end; if this were to happen the project would not likely get completed until summer 1997.

If there is anything I can provide in the way of assistance or if there is further information you would like to have, please feel free to contact me. I'll do my best to help in any way.

Thank you for your consideration.

Yours truly,

---

Dennis J. Hanlon  
Assistant Professor

phone: 737-8507  
fax: 737-7680  
email: dhanlon@kean.ucs.mun.ca

**APPENDIX 4.6**

**PHASE FOUR RESEARCH INSTRUMENTS**

**APPENDIX 4.6a**

**GRID ELEMENT LIST  
(PHASE FOUR)**

P4-E-E-1<sup>1</sup>

My firm as it was when it started

My firm as I had imagined it would be 5 years after start-up

My firm as I had imagined it would be 10 years after start-up

My firm as it is now

Firm A

Firm C

Firm E

Firm G

---

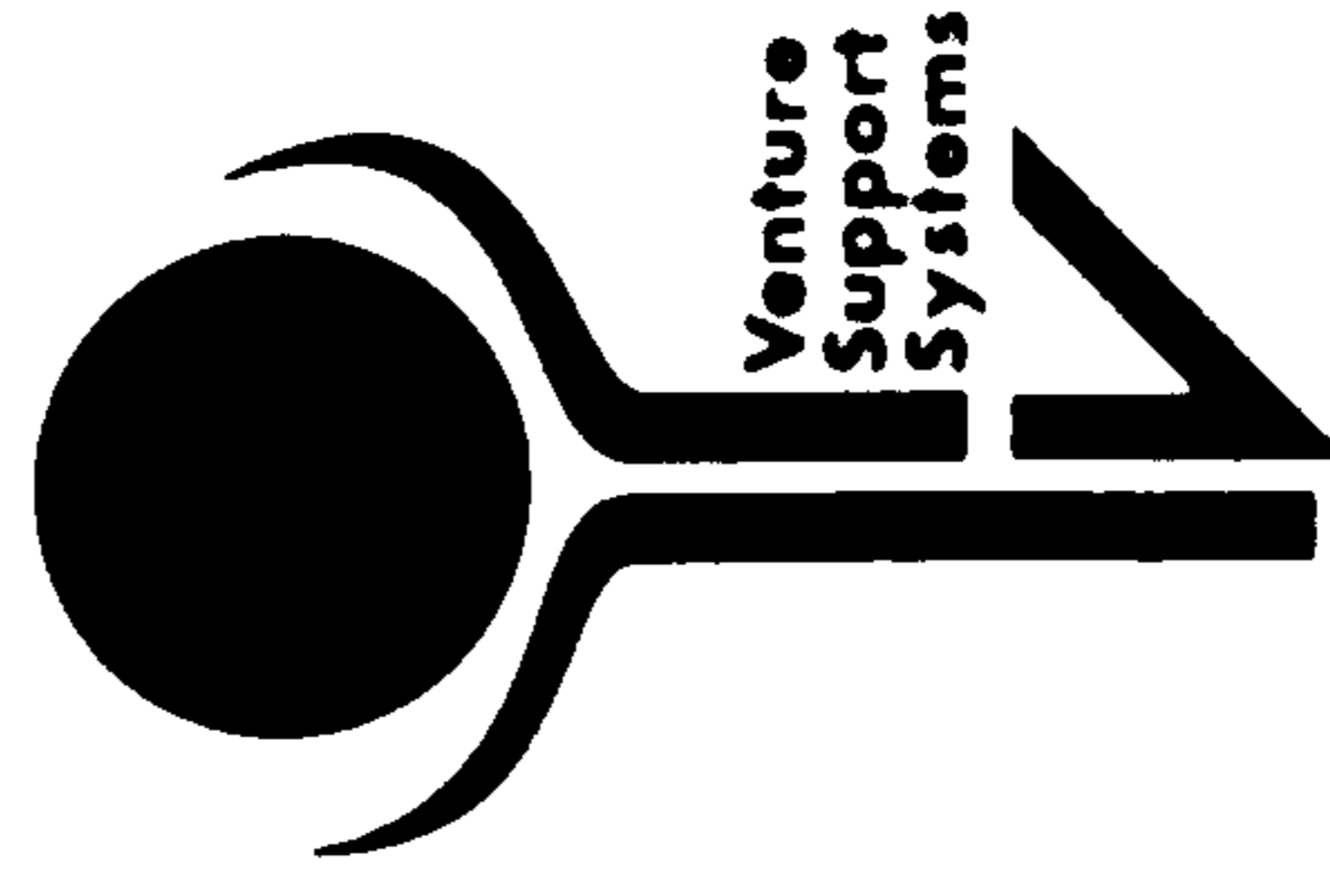
<sup>1</sup> The real names of the firms listed as elements 5 - 8 are not revealed in this report in order to protect the anonymity of the firms cited.

**APPENDIX 4.6b**

**GRID CONSTRUCT SHEETS  
(PHASE FOUR)**

# PHASE IV

## GRID CONSTRUCTS



P4-E-C-1

clear-cut market niche; focus is on a specific group or type of customer	1	2	3	4	5	6	7	broad customer base; serves a wide range of different types of customers
--	---	---	---	---	---	---	---	---

P4-E-C-2

constant change in products or services	1	2	3	4	5	6	7	"don't rock the boat"; don't tamper with a successful product or service
---	---	---	---	---	---	---	---	---



P4-E-C-3

one-product (or  
service) company;  
singular focus

1

2

3

4

5

6

7

diverse portfolio of  
businesses in  
different industries

P4-E-C-4

focus on local marketplace	1	2	3	4	5	6	7	global market presence

P4-E-C-5

public is less familiar  
with the firm

greater public  
presence

1 2 3 4 5 6 7

P4-E-C-6

service-based relationship  
with the customer;  
customer wants to buy from  
this firm regardless of price

price-based relationship  
with the customer;  
customer buys from this firm  
because it has the lowest  
price

1 2 3 4 5 6 7

	like to be small							like to be large
	1	2	3	4	5	6	7	

P4-E-C-8

no problem in staffing  
its requirements

1

2

3

4

5

6

7

attracting, maintaining and  
developing human resources  
is one of the biggest  
management issues

firm is almost totally  
dependent on the  
owner/president's  
skills and time

1

2

3

4

5

6

7

fully trusted, competent  
multi-level management  
team that can operate  
profitably without  
the owner/president

more equipped to  
adapt to change

less equipped to  
adapt to change

1 2 3 4 5 6 7



wholly family-owned  
Newfoundland business

joint venture with global  
connection; willing to  
relinquish ownership to  
achieve rapid growth

1 2 3 4 5 6 7

strong sales and marketing skills	1	2	3	4	5	6	7	strong technical and production skills
-----------------------------------	---	---	---	---	---	---	---	--

**APPENDIX 4.6c**  
**GRID DATA COLLECTION INSTRUMENT<sup>2</sup>**

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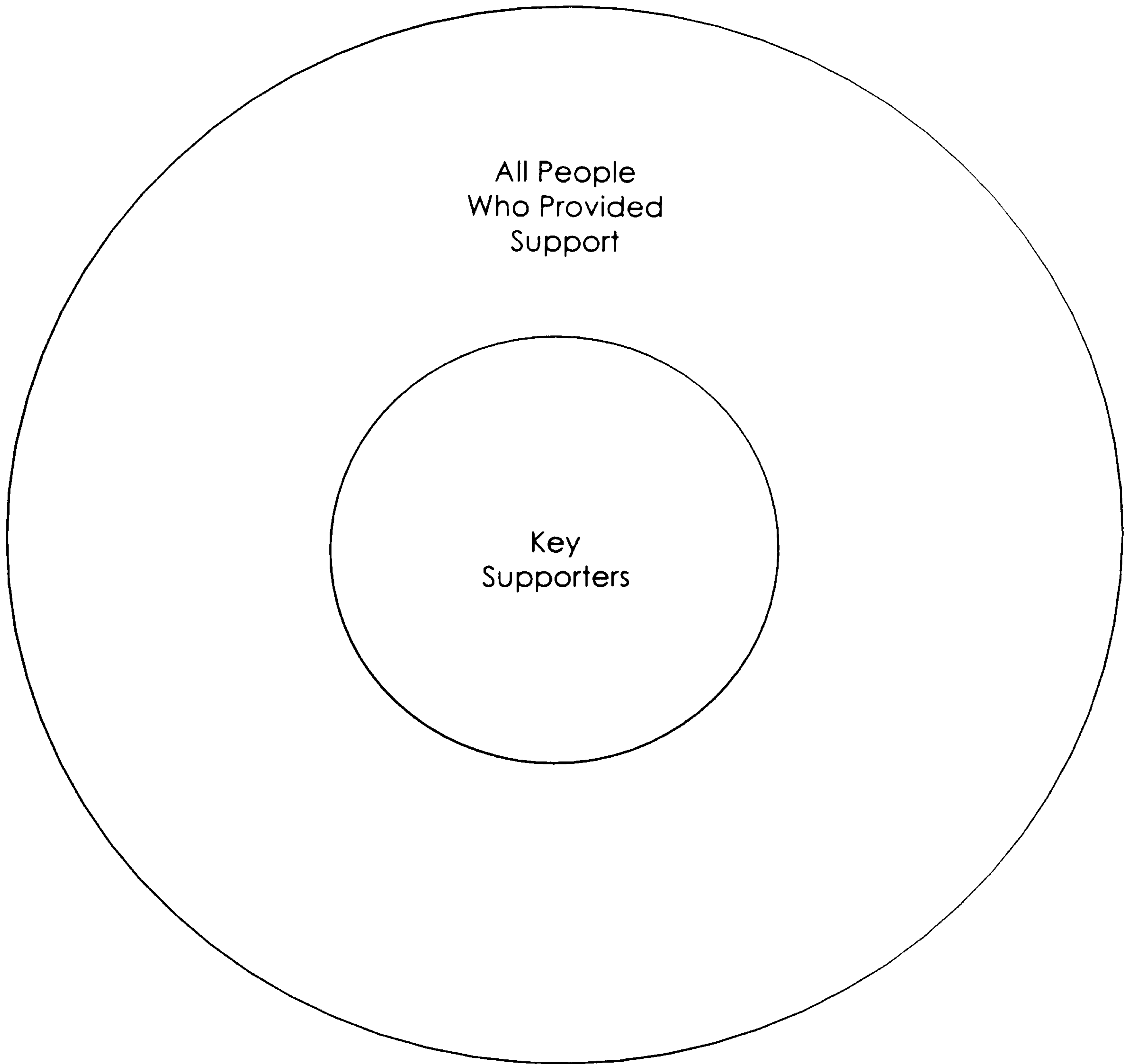
<sup>2</sup> The real names of the firms listed as elements 5 - 8 are not revealed in this report in order to protect the anonymity of the firms cited.

1 2 3 4 5 6 7

	My firm as it was when it started	My firm as I imagined it would be 5 years from start-up	My firm as I imagined it would be 10 years after start-up	My firm as it is now	Firm A	Firm C	Firm E	Firm G	
clear-cut market niche									broad customer base
constant change in products									"don't rock the boat"; don't tamper with a successful product
one-product company; singular focus									diverse portfolio of different businesses
focus on local marketplace									global market presence
public is less familiar with the firm									greater public presence
service-based relationship with the customer									price-based relationship with the customer
like to be small									like to be large
no problem in staffing its requirements									attracting, maintaining and developing human resources is one of the biggest management issues
firm is almost totally dependent on the owner/president's skills and time									fully trusted, competent multi-level management team that can operate profitably without the owner/president
more equipped to adapt to change									less equipped to adapt to change
wholly family-owned Newfoundland business									joint venture with global connection, willing to relinquish ownership
strong sales and marketing skills									strong technical and production skills

1 2 3 4 5 6 7

**APPENDIX 4.6d**  
**KEY SUPPORTER VISUAL PROMPT**



**APPENDIX 4.6e**

**PHASE FOUR DATA COLLECTION INSTRUMENT**

VENTURE SUPPORT SYSTEMS RESEARCH PROJECT  
PHASE FOUR

VENTURE SUPPORT SYSTEMS IN  
NEW BUSINESS START-UPS

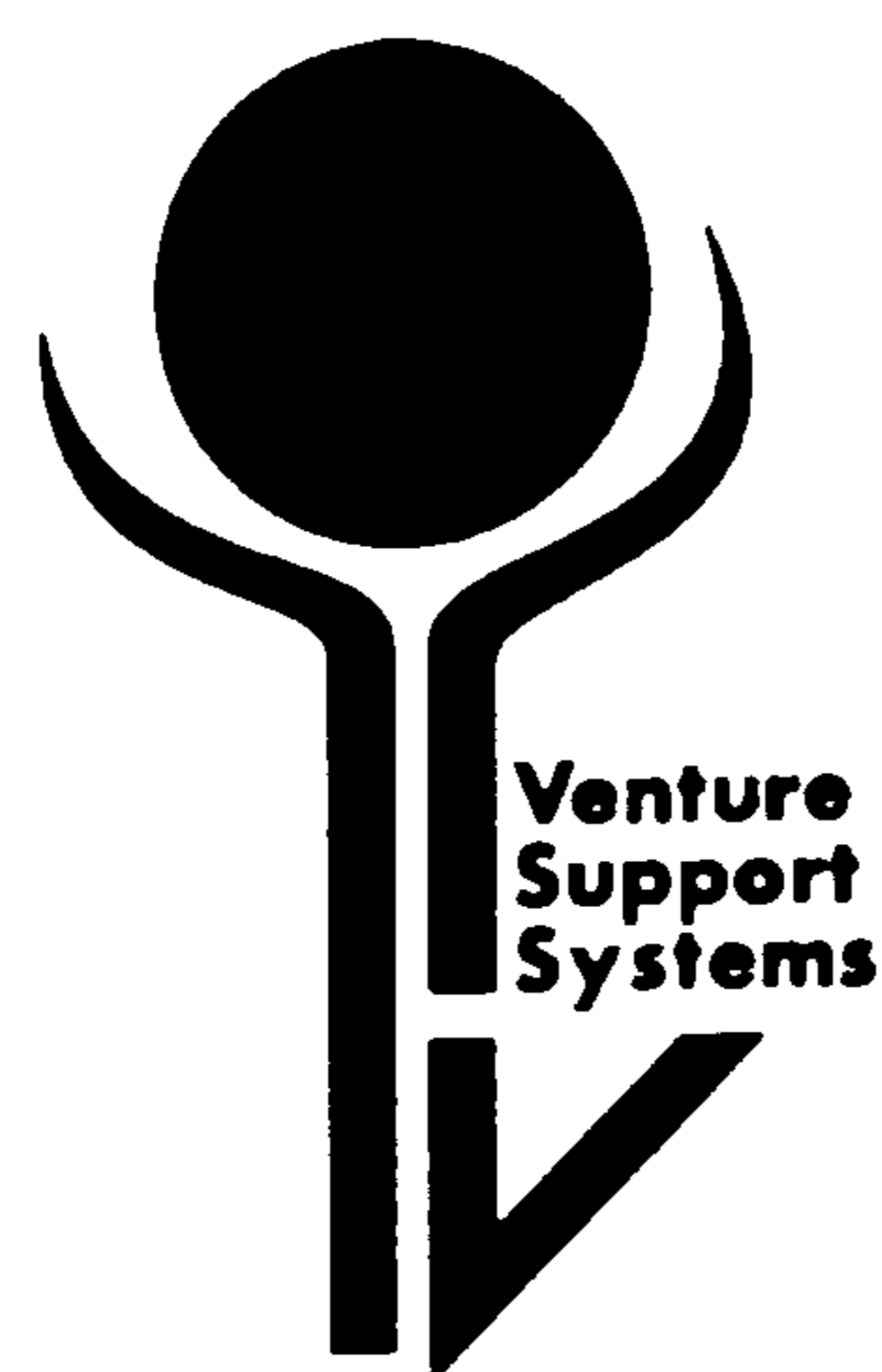
**ENTREPRENEUR QUESTIONNAIRE**

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Funding Provided by  
The Institute of Social and Economic Research (ISER)

May 1996





## PHASE FOUR QUESTIONNAIRE

### Project Description

This questionnaire is the fourth phase of a four-stage research project designed to investigate the supportive relationships entrepreneurs establish in order to translate business ideas into successful ventures. The purpose of the Phase Four Questionnaire is two-fold: a) to describe the business visions of entrepreneurs in quantifiable terms in order to permit comparisons across the sample of firms, and b) to identify common characteristics associated with the firms and the supportive relationships established.

Entrepreneur Record # \_\_\_\_\_

### **SUPPORT VERBAL PROMPTS**

#### **VALUE VS CONVENIENCE BASED**

1. Did any of these people who assisted you receive or expect to receive any payment or compensation in return for providing this help?
2. Did you make any commitment to any of these people in return for this help?
3. Were any of these people repaying a favour or obligation by providing this help?

#### **VOLUNTARISTIC**

If you were no longer operating the business, with which of these people do you think you would continue to maintain a relationship?

#### **INTIMATE NETWORK MEMBER**

Are any of these people among those friends or relatives whom you feel are closest to you outside your home?

Entrepreneur Record # \_\_\_\_\_

	Supporter 1	Supporter 2	Supporter 3
Sex			
Location			
Occupation/Position			
Organization			
Insider/Outsider			
Years known			
Relation (kin)			
How known			
Value / convenience			
Voluntaristic			
Intimate			
Types of support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support

Entrepreneur Record # \_\_\_\_\_

	Supporter 4	Supporter 5	Supporter 6
Sex			
Location			
Occupation/Position			
Organization			
Insider/Outsider			
Years known			
Relation (kin)			
How known			
Value / convenience			
Voluntaristic			
Intimate			
Types of support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support	1. Advice 2. Network contacts 3. Sounding board 4. Financial assistance 5. Confidential information 6. Emotional support

PERFORMANCE - IMPORTANCE

REFERRING TO THE SCALE OF 1-5 IMMEDIATELY BELOW, PLEASE RATE THE SUBSEQUENT LIST OF ITEMS ACCORDING TO HOW IMPORTANT THEY ARE TO YOU IN MEASURING THE PERFORMANCE OF YOUR FIRM. **CIRCLE THE NUMBER** WHICH BEST DESCRIBES YOUR ANSWER.

		<b>Of little importance</b>				<b>Extremely important</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	Growth in Sales	1	2	3	4	5
2.	Net Profit	1	2	3	4	5
3.	Personal Income	1	2	3	4	5
4.	Cash Flow	1	2	3	4	5
5.	Employee Satisfaction	1	2	3	4	5

PERFORMANCE - SATISFACTION

REFERRING TO THE SCALE OF 1-7 WHICH YOU ARE HOLDING, PLEASE INDICATE HOW SATISFIED YOU WERE WITH YOUR FIRM'S PERFORMANCE FOR THE FISCAL YEAR ENDED IN 1995, FOR EACH OF THE DIMENSIONS LISTED BELOW.

		<b>Not at all satisfactory</b>			<b>Outstanding</b>					
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>		
1.	Growth in Sales			1	2	3	4	5	6	7
2.	Net Profit			1	2	3	4	5	6	7
3.	Personal Income			1	2	3	4	5	6	7
4.	Cash Flow			1	2	3	4	5	6	7
5.	Employee Satisfaction			1	2	3	4	5	6	7

## DEMOGRAPHICS

1. # of years firm has been operating \_\_\_\_\_ years
  
2. Sex:
  - 1 MALE
  - 2 FEMALE
  
3. Age group:
  - 1 UNDER 25
  - 2 25-29 YEARS
  - 3 30-34 YEARS
  - 4 35-39 YEARS
  - 5 40-44 YEARS
  - 6 45-49 YEARS
  - 7 50-59 YEARS
  - 8 60 YEARS AND OVER
  
4. What is the highest level of education that you have achieved? (Circle only one)
  - 1 DID NOT COMPLETE HIGH SCHOOL
  - 2 COMPLETED HIGH SCHOOL
  - 3 COMPLETED VOCATIONAL/TRADE SCHOOL
  - 4 UNIVERSITY UNDERGRADUATE DEGREE
  - 5 UNIVERSITY GRADUATE DEGREE
  - 6 OTHER, SPECIFY: \_\_\_\_\_
  
5. Ownership Structure  
Percent owned \_\_\_\_\_  
Percent owned by others \_\_\_\_\_
  
6. Number of managers \_\_\_\_\_
  
7. Which of the following best identifies your business?  
(Circle only one)
  - 1 RETAIL
  - 2 WHOLESALE
  - 3 MANUFACTURING
  - 4 PRIMARY RESOURCE-BASED
  - 5 CONSTRUCTION
  - 6 SERVICE

8. Do you currently own any other businesses? Number: \_\_\_\_\_

9. Had you started any other businesses prior to this one?

Number: \_\_\_\_\_

10. a) How many employees does your business have on the payroll?

\_\_\_\_\_ FULL-TIME  
\_\_\_\_\_ PART-TIME  
\_\_\_\_\_ SEASONAL FULL-TIME  
\_\_\_\_\_ SEASONAL PART-TIME

b) How many employees were on the payroll during the firm's first year of operations?

\_\_\_\_\_ FULL-TIME  
\_\_\_\_\_ PART-TIME  
\_\_\_\_\_ SEASONAL FULL-TIME  
\_\_\_\_\_ SEASONAL PART-TIME

11. 1995 Sales

1 Less than \$100,000  
2 \$100,000 to \$249,000  
3 \$250,000 to \$499,000  
4 \$500,000 to \$999,000  
5 \$1 million to \$5 million  
6 More than \$5 million

12. Sales Growth 1994-95

1 Under 5%  
2 5% to 9%  
3 10% to 19%  
4 20%-34%  
5 35% to 50%  
6 More than 50%  
7 not applicable



**APPENDIX 5.1**

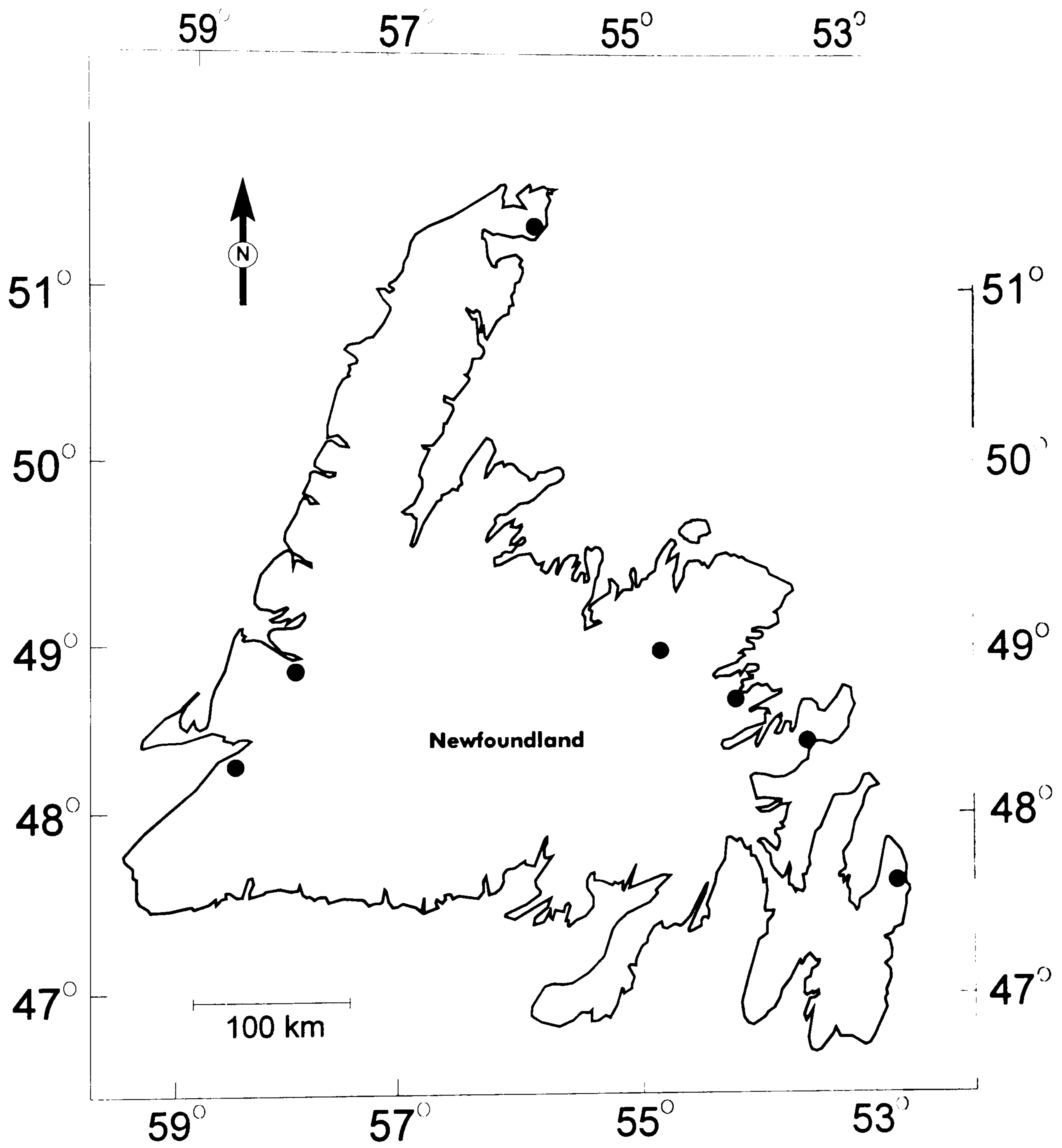
**PHASE TWO RESULTS:  
SUMMARY OF CONSTRUCT GROUPINGS**

## Summary of Phase Two Construct Groupings

<u>1st-Order</u>	<u>2nd-Order</u>	<u>Subject Category</u>	<u>3rd-Order</u>	<u># of Constructs</u>
<b>External</b>				<b>75</b>
	1. Market Share/Staying Power			12
		Penetration: established base vs. initial sales	9	
		Revenue volume	2	
		Satisfaction with market share	1	
	2. Market Breadth			3
	3. Product Innovation			4
	4. Product Scope			11
		Single vs. multi-product	4	
		Degree of opportunism	3	
		Single vs. multi-business	3	
		Other	1	
	5. Market Scope (Geographic)			16
		Local vs. out-of-province	3	
		Global	10	
		Aggressiveness	2	
		Other	1	
	6. Image			6
	7. Customers			8
		Differentiation	3	
		Emphasize firm vs. product	2	
		Other	3	
	8. Industry Characteristics			7
	9. Other			8
		Obsolescence/Market decline	3	
		Other	5	
<b>Internal</b>				<b>81</b>
	1. Size			5
	2. Employees			7
		Job enrichment/Worker satisfaction	3	
		Other	4	
	3. Finance			12
		Liquidity/Stability	5	
		Profitability	5	
		Other	2	
	4. Structure			12
		Simple vs. complex	6	
		Control	3	
		Other	3	
	5. Posture			15
		Direction/Confidence	4	
		Adaptability	7	
		Other	4	
	6. Ownership & Control			13
		Strategic partnering	4	
		Tightly vs loosely held	7	
		Public vs. private	2	
	7. Skills			8
		Sophistication	2	
		Industry-specific	5	
		Other	1	
	8. Stage of Development			3
	9. Other			6
		Location	2	
		Other	4	

**APPENDIX 5.2**

**GEOGRAPHIC DISTRIBUTION OF  
PHASE 3 SAMPLE**



● Denotes location of at least one firm