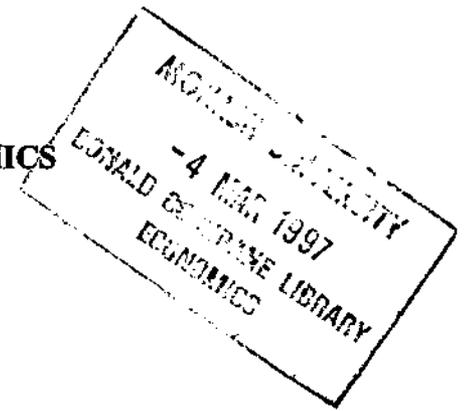


MONASH UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS



**ENTREPRENEURIAL DECISION-MAKING
STYLE AND SMALL BUSINESS SUCCESS IN
AUSTRALIA**

Judy Gray

*Working Paper 08/97
February 1997*

ABSTRACT

The current study examines one aspect of the entrepreneurial process: Decision-Making Style. Based on the extant research literature, a new instrument, the Entrepreneurial Decision-Making Inventory, was developed. Questionnaires were distributed to 578 Victorian New Enterprise Incentive Scheme (NEIS) graduates who had completed business training and established businesses before 1994, resulting in 255 useable responses. Factor analysis of the data indicated three distinct dimensions in the instrument: *Convergent*, *Divergent*, and *Inventive* Decision-Making Style. Measures of entrepreneurial success included *income*, *number of employees* and *survival in business*. The results indicated that entrepreneurs who survive the establishment phase appear to utilise a significantly different style of Decision-Making from respondents who are no longer in business. Also, the instrument could be used to differentiate between growth and non-growth businesses, and could assist in the selection and training of potential entrepreneurs. The implications of the findings for entrepreneurial performance are considered and areas for future research are identified.

ENTREPRENEURIAL DECISION-MAKING STYLE AND SMALL BUSINESS SUCCESS IN AUSTRALIA.

INTRODUCTION

The conditions that lead to success in small business have become a major focus of entrepreneurial research. The entrepreneurial sector is now viewed as a significant factor in the design of strategies for economic recovery and growth in many nations. According to Hornaday (1992:12), '...the desperate desire for economic growth among developing countries has placed the spotlight squarely on entrepreneurship as a major factor in the success of capitalist economies.' It is well recognised that small business development provides one of the few opportunities for employment growth to counter high rates of unemployment (Keats and Bracker, 1988; Lumpkin and Ireland, 1988). In Australia, 'small business is expected to play a key role as the engine of employment growth in the 1990s' (*Financial Review*, 29 June 1993). For the purpose of this study, *entrepreneurship*, *self-employment*, and the *establishment of a small business* have been used interchangeably according to the following definition of an entrepreneur as 'one who owns and starts a new and small business' (Moore, 1990:275).

Past research has focused on entrepreneurial characteristics and personality profiles (Chaganti and Chaganti, 1983; Hornaday and Aboud, 1971; McClelland, 1965; Sexton and Bowman-Upton, 1986). This approach has been criticised by Low and MacMillan (1988:141) for being of the 'census taking type - confined largely to documenting and reporting the occurrence of entrepreneurs or their personality characteristics with little attempt to uncover causal relationships or to explore implications for practice.'

Moreover, studies of personality characteristics of entrepreneurs have not yielded a clear picture (Boshoff, Bennett, and Owuso, 1992; Brockhaus and Horwitz, 1985; Van de Ven, 1980). According to Gartner (1988:21), 'a startling number of traits and characteristics have been attributed to the entrepreneur and a psychological profile of the entrepreneur assembled from these studies would portray someone larger than life.' Several researchers have concluded that even studies that focus on the character, personality, education, and experience of a new venture's founder do not provide a clear picture (MacMillan, Zeemann and Subba Narasimha, 1987; Sandberg, 1986; and Stuart and Abetti, 1987). Further, personality traits appear to be unreliable predictors of future behaviour (Ajzen, 1987, 1988; Gartner, 1989), and therefore, Gartner (1988) suggested that the entrepreneurial process should be studied in more depth.

The decision-making process underlies business activity and has fundamental importance for problem-solving, the development of business plans, and goal-directed behaviour. 'Effective decision-making enables [businesses] to achieve their objectives in an efficient manner' (Gore, Murray, and Richardson, 1992:1). Mintzberg, Rasinghani, and Theoret (1976:246) defined a decision process 'as a set of actions and dynamic factors that begins with the identification of a stimulus for action and ends with a specific commitment to action.' Simon (1986:ix) considered the decision-making process as a 'framework within which to view the operation of organizations. Both in describing what goes on in organizations, and in making prescriptions for the improvement of their functioning, some of the most critical processes are the ways in which [management] identify problems, formulate them, generate alternative strategies for dealing with them, and select and implement those strategies.'

The importance of decision-making has been well recognised by researchers: 'If one process in particular characterises the manager's or entrepreneur's job it is that of making decisions or solving problems' (Mosley, O'Brien and Pietri, 1991:5). While considerable research has focused on decision-making in organisations, (Buttner and Gryskiewicz, 1993; Clifford, 1980; Hoy and Hellreigel, 1982; Nutt, 1989; Pate, Driver, Gatewood, Goodman and Coombs, 1990; and Zakay, 1984) the extant literature often views small businesses as merely smaller versions of large organisations. Dandridge (1979) and Robinson and Pearce (1984) suggested that small businesses are quite different from large organisations in a number of ways including management characteristics and founders' objectives. According to Birley and Norburn (1985:81) one of the most important features that distinguishes small- from large-firm decision-making is that small firms are managed by their owners. In such firms decision-making is more heavily affected by the personal characteristics and motivations of the owner-managers.

The objectives of growth and profitability underlie corporate decision-making. However, the entrepreneur often starts a business 'with the declared intention of becoming independent and [then] maintaining independence by keeping operational control . . . The strategic goal becomes one of no growth or minimum growth consistent with survival' (Birley, 1982:83). The assumption that all small business owners in the establishment phase view business growth as desirable fails to recognise the lifestyle goals of founders which may be contrary to wealth creation. The results of a study by Hamilton (1987) of founder motivation in New Zealand small businesses indicate that although around 40 per cent stated that they were motivated by making the most of a commercial opportunity, 33 per cent were motivated by a need for independence and only ten per cent stated wealth creation as a primary reason to establish a business. The results are consistent with another study of redundant workers who became self-employed which found that '55 per cent of respondents saw business as an opportunity to earn more money, 74 per cent wanted control over their own affairs and 57 per cent wanted a more flexible lifestyle' (Gray, 1994:14). Business owner objectives are likely to affect decision-making and subsequent business performance, and should be taken into account in the evaluation of business success. According to Bird (1992:12), 'intention forms a precursor to strategy and directs critical strategic decisions' In the current study, survival in business as well as growth indicators such as the generation of employment and net income were used as measures of success.

Several studies on decision-making have applied the Kilmann and Herden (1976) model of organisational effectiveness criteria to small business (Brodzinski, Scherer and Weibe, 1990; and Hoy and Hellreigel, 1982). The underlying premise of the Kilmann and Herden (1976) model, based on Jung's theory of psychological types, is that managers perceive and solve problems in different ways depending on their preferred problem-solving style. The model has been tested using the Myers-Briggs Type Inventory (MBTI). Nutt (1989) developed a *Decision Style Survey* based on the Jungian classification categories as interpreted by Briggs (Myers and Myers, 1980). However, the MBTI was considered to be too long and time consuming to administer in the current study, and has been discredited as a suitable research instrument (Boyle, 1995).

Mosley, O'Brien, and Pietri (1991) tested managerial problem-solving styles using a 20-item questionnaire which was a simplified version of the Keirsey Temperament Sorter (Keirsey and Bates, 1984:5-10) derived from the Myers-Briggs Type Inventory. Although the current study tested the 20-item inventory used by Mosley et al. (1991) in the pretest, the instrument lacked content validity and was considered inappropriate for the purpose of the current study.

Rowe and Mason (1987:188) commented that '[decision-making] style must be recognized as playing an important role in determining the likelihood of success for organizations yet to emerge.'

They developed the *Decision Style Inventory* based on 'typical situations facing executives'. Decision style was considered 'to reflect the way one visualizes and thinks about situations. It has to do with mental predisposition concerning personal objectives. . . and how one approaches problems and makes decisions. . . Matching an Individual's style to the task or job, including the work environment is crucial to effective performance' (Rowe and Mason, 1987:2,19). The instrument was designed for a target population of business executives in organisations where the environmental demands are likely to be different from those faced by small business proprietors. Further, respondents must rank four responses to each item. There is no opportunity to rank preferences equally. The current study aims to investigate the underlying characteristics of decision-making style, such as focussing on detail, risk taking, or preferring the freedom to take the initiative in relation to the establishment phase of small business.

Kirton (1976) proposed a theory describing different cognitive styles of creativity, problem-solving and decision-making within an organisational context. Kirton developed a 32 item, self-report scale, the Kirton Adaption-Innovation Inventory (KAI) to measure individual differences in adaption-innovation. Scores on the KAI can range from a low of 32 (extreme adaption) to a high of 160 (extreme innovation). However the instrument instructions ask respondents '*How difficult or easy is it to present yourself consistently over a long period?*' The degree of difficulty in maintaining an image may not equate with decision-making style. Further, some items relate to employment situations which are inappropriate for the self-employed. The use of words in the KAI such as *prudent, perspectives, plodder, and proliferate* made the inventory unsuitable for use in the current study.

One theoretical perspective suggests that 'the key to entrepreneurial success lies in the decision of individual entrepreneurs who identify opportunities, develop strategies, assemble resources and take initiatives' (Low and MacMillan, 1988:142). However, little attention has been paid to entrepreneurial styles of decision-making and the relationship to success in business. The current study attempts to redress this deficiency by developing a new instrument specifically to ascertain entrepreneurial decision-making style, based on the assumption that 'in small companies, strategies [the outcomes of decisions] are usually the sole reflection of the owner/operator' (Olson and Currie, 1992:49).

METHOD

The Instrument

The new instrument design process was commenced by drafting specific measurement questions based on the extant literature, as suggested by Emory (1980:222). The draft instrument, consisting of 16 items was tested among academic colleagues ($n = 22$) and the interrater reliability estimate was calculated based on the formula suggested by Goodwin and Goodwin (1985:7), 'number of coding agreements/number of coding agreements plus number of coding disagreements.' *Agreement* meant that raters concurred on the classification of an item. The resulting mean interrater reliability estimate for the instrument was .93, ranging from a low of .86 to 1.00. Modifications to the instrument were made according to the results obtained and suggestions for improvements.

Hudson (1966) in a study of mental processes classified respondents into two groups: *convergers* who were narrow and focused on their point of view and concentrated on practical results; and *divergers* who tended to enlarge problems and expand the boundaries of consideration and sought new things to consider. Mathôt (1989:52) in discussing thought processes in innovation, referred to *convergent*, as 'a logical thought process which complemented *divergent*, a more creative thought

process.' In the current study, a unidimensional scale was envisaged with *Convergent* and *Divergent* representing either extremes of Decision-Making Style. *Convergent* decision-makers were considered to be conservative, cautious, and were expected to pay attention to details. Items reflecting a strongly *Convergent* style of Decision-Making in the inventory included: *use a commonsense approach* and *stick to a routine*. *Divergent* decision-makers were considered to be more likely to take risks, and to approach a problem from a new angle. Items reflecting a strongly *Divergent* Decision-Making Style in the inventory included: *enjoy new situations*, and *work on many ideas at once*.

Respondents were required to indicate on a five-point Likert scale how often they use particular Decision-Making Styles. All items in the 16-item scale were rated from *never* (0) to *most of the time* (4). *Convergent* items were reverse coded. The statements were presented in random order to minimise order bias. The standardised item Cronbach alpha coefficient for the instrument was .69 which exceeded the Cronbach alpha of .63 for a new instrument developed by Neihoff, Enz and Grover (1990:343) who stated that the result was 'reasonable, considering the newness of the scale.'

Variables

A self administered questionnaire was developed based on a comprehensive review of current literature.

Independent Variables

The independent variables included in the questionnaire were:

- a) Personal demographic details including gender, age, marital status, and dependents; and
- b) Professional demographic details including role models, education, previous occupation, similarity of previous employment to current business, and duration of unemployment.

Dependent Variable: Business Success

Both quantitative and qualitative data were gathered from the questionnaire concerning the dependent variable:

- a) Quantitative data including period in business (months), income (net profit), and number of employees (part-time/full-time); and
- b) Qualitative data including perceptions of success in business. Respondents were asked to select from a list describing aspects of business success. The list was generated from a review of the literature (Fried, 1989; Ibrahim and Goodwin, 1987). The questionnaire items included *staying in business*, *better lifestyle*, *more freedom*, *independence*, *profits*, *employing others*, *self-fulfilment*, and *satisfying customers*.

Sample

Questionnaires were sent to 578 graduates from the New Enterprise Incentive Scheme (NEIS) conducted at centres in metropolitan and country Victoria. All respondents (n = 255) had completed the training and had established businesses prior to December 1993 and were no longer receiving

income support at the time of the survey. The 255 useable responses represented a response rate of 45 per cent.

Over three-quarters (77 per cent) of respondents were male. Almost two-thirds (63 per cent) of the sample was aged under 40 years when the respondents started their businesses. Most respondents (71 per cent) had family members or close friends in business whom they regarded as role models. The sample was better educated than the Victorian population with over half (52 per cent) having post-secondary qualifications. Over half of the males (52 per cent) and two-thirds of the females (70 per cent) had been employed previously in white collar occupations and approximately one-third (36 per cent) of respondents had worked for a company where the products, services or customers were similar to the newly established business. The majority of respondents (63 per cent) had been unemployed for less than one year at the time of commencing the NEIS program.

The majority of respondents (80 per cent) had businesses that continued to operate a least a year after completing the NEIS course. Only 13.7 per cent of respondents had ceased trading (the criterion for business failure in the current study) and 3.1 per cent of respondents had sold their businesses. A further two per cent of respondents had never started in business. Almost half the respondents (49.4 per cent) stated that the net business profit (excluding other sources of income) for the last financial year was less than \$10,000. A further 25.1 per cent claimed that their net profit was between \$10,000 and \$19,999 and only 18.8 per cent had net profits in excess of \$20,000. The majority of respondents (63.9 per cent) did not employ others. Around one-third of respondents (31.8 per cent) had between one and five employees; only 3.2 per cent of respondents had between six and ten employees; and 1.2 per cent of respondents had more that 11 employees (the highest number of employees in a single business was 35).

Statistical Analysis

Descriptive statistics, such as means, frequencies, and standard deviations were calculated to summarise the data using the statistical package SPSS Windows version 6.1. Cross-tabulations, correlational analysis, t-tests and one-way analysis of variance were used to determine the strength of relationships between and among variables. Factor analysis was used in the study to identify 'which variables form coherent subsets that are relatively independent of one another' (Tabachnick and Fidell, 1989:597).

RESULTS

Exploratory factor analysis was undertaken to examine the relationships among various items in the Decision-Making Inventory. Principal component analysis indicated that the first component with an eigenvalue of 2.87 accounted for 23.9 per cent of the variance. There were three eigenvalues greater than one which accounted for 50.9 per cent of the total variance. A pattern matrix using oblimin rotation was generated to examine the factor loadings. Given the sample size and number of variables for the current study, the critical value for a correlation coefficient at the .01 level of significance was set at .43 as suggested by Stevens (1992:383). Therefore, item 2, *concentrate on one thing at a time*, with a loading of .20 was excluded from further analyses. Item 6, *come up with a risky idea*, item 4, *come up with a cautious idea* and item 5, *stick to tried and true methods*, did not load discretely and were excluded.

Confirmatory factor analyses of the items loading on the three factors were conducted by using the generally weighted least squares method of LISREL (7.20). Jöreskog and Sörbom (1989:193) suggested that 'when the observed variables in LISREL are all ordinal . . . the use of ordinary product

moment correlations based on raw scores is not recommended. Instead it is suggested that estimates of polychoric and polyserial correlations be computed and that the matrix of such correlations be analyzed by the weighted least squares method.' Factor loadings, theta deltas, and squared multiple correlations were examined. Item 9, *act according to set rules/guidelines*, with a factor loading of .39, and a squared multiple correlation of .15 accounted for only a small proportion of the variance and was excluded from further calculations. After eliminating item 9, analysis of the three factor model produced a chi-square value of 52.58, $df. = 32$, for a chi-square/degrees of freedom ratio of 1.64, a goodness of fit index of .97, and a root mean square residual of .07 which reflected the parsimonious nature of the model and indicated that the model provided an adequate fit of the data. Details are provided in Table 1.

The first factor included three items which indicated a *Convergent* style of Decision-Making; the second factor included four items which indicated a *Divergent* style; and the third factor included three items such as *come up with new ideas*, and *always manage to think of something* and was labelled *Inventive*. The label was selected based on the nature of the items in the cluster and extant literature including the *Kirton Adaption Innovation Inventory (KAI)* which described an *Innovator* as someone who prefers to 'do things differently. . . [and] discovers problems and avenues of solution' (Kirton, 1984:137-138).

Unidimensionality was assessed by examining the goodness of fit for each factor using a congeneric model in LISREL. The goodness of fit index for *Convergent* and *Inventive* was 1.0 and for *Divergent* Decision-Making, .996. The results indicate the unidimensionality of each factor.

In order to check whether the Decision-Making Inventory was unidimensional or multi-dimensional, the null hypothesis that there were no differences among the factors identified in previous exploratory analyses was tested. A congeneric model, or null model was tested in LISREL with all ten items included in the Inventory. The LISREL estimates of weighted least squares indicated negative loadings for items 7, 11, and 14 (the items that previously had loaded on the *Convergent* factor). The largest positive standardised residuals were mainly accounted for by the same group of items (7, 11, and 14). The goodness of fit index should approximate 1.0 whereas the goodness of fit index for the congeneric model was .92. Further, the chi-square of 135.74 with 35 degrees of freedom produced a chi-square/degrees of freedom ratio of 3.58 which indicated that this was not a robust congeneric model and therefore, the model did not provide an adequate fit of the data.

Table 1
Confirmatory Factor Analysis for the Three-Factor Decision-Making Inventory
(N = 255)

Item No.	Factor Items	λ_i	R ²	TD	SE
<i>Convergent</i>					
7	use a common sense approach	.54	.29	.71	.08
11	pay attention to detail	.88	.77	.23	.13
14	stick to a routine	.33	.11	.89	.07
<i>Divergent</i>					
8	work on many ideas at once	.45	.20	.80	.05
12	approach a problem from a new angle	.55	.30	.70	.05
15	enjoy new situations	.74	.55	.45	.06
16	prefer to do things differently	.61	.37	.63	.05
<i>Inventive</i>					
1	come up with new ideas	.63	.39	.61	.06
10	invent a way of your own	.54	.29	.72	.05
13	always manage to think of something	.71	.50	.50	.06

Overall Cronbach's $\alpha = .69$

$\chi^2 = 52.58, df = 32, p < .01$

Goodness of Fit Index = .97. Adjusted Goodness of Fit Index = .95

Root Mean Square Residual = .07

Further testing was conducted with the items which loaded on the *Divergent* and *Inventive* factors to check whether each factor was a single factor. A congeneric model was established with all seven items. Analyses indicated that although all items loaded positively on the single factor, and there were no standardised residuals listed, the goodness of fit index of .96 was still not as good as those indices obtained when the factors were analysed separately. The above analyses confirm that the model should comprise three factors in order to parsimoniously fit the data and therefore, the Inventory would appear to be a multi-dimensional construct. Payne (1993:7) has criticised treating measures as 'unidimensional . . . [for] example, Kirton's measure of Adaptors vs. Innovators. . . when the overwhelming evidence is that they are multidimensional. Multidimensional models seem to suggest the possibility of more sophisticated explanations/theories.'

Construct reliability measures were calculated based on LISREL confirmatory factor analyses, (sum of standardised loadings)² / ((the sum of standardised loadings)² + sum of indicator measurement error where *standardised loadings* were the weighted least squares and *measurement error* was the theta delta scores. The construct reliabilities for the *Convergent* factor (.62), for *Divergent* (.68), and for *Inventive* (.65) were satisfactory given the developmental nature of the instrument and the comments by Hair, Anderson, Tatham and Black (1992:450) that 'the indicator reliabilities should exceed .50, which roughly corresponds to a standardised loading of .70.'

LISREL factor scores were calculated for the three factors, *Convergent*, *Divergent* and *Inventive* Decision-Making Style. A congeneric model was established and factor score regressions were calculated for each item loading on each factor. Each item factor score was divided by the total factor score to give a metric scale. The sum of metric factor scores for all items loading on each factor was

1.0. The raw scores for each case on each item for *Convergent*, *Divergent* and *Inventive* Decision-Making were multiplied by the appropriate standardised factor score and the sum provided a factor score for each case on each factor.

In order to compare factor scores for *Convergent*, *Divergent*, and *Inventive* Decision-Making Style, frequency distributions of factor scores were calculated, as well as measures of central tendency such as the mean, mode, and median for each factor. Further, the maximum and minimum scores, the range, standard deviation, kurtosis and skewness were examined. The data were analysed using cross-tabulations, t-tests, and one way analysis of variance to compare mean Decision-Making factor scores by a range of demographic variables and measures of success.

Relationships among Decision-Making Factors

Table 2 presents the means, standard deviations and correlations (Pearson's r) among the factor scores for the three Decision-Making factors. The correlations indicate a strong negative relationship at the .001 level of significance between *Convergent* and *Inventive* Decision-Making factor scores. Respondents who used an *Inventive* Decision-Making style most often, tended not to use a *Convergent* Decision-Making style. There was a strong positive correlation at the .001 level of significance between *Divergent* and *Inventive* Decision-Making factor scores.

Table 2
Correlations, Reliabilities, Means and Standard Deviations for Decision-Making Factors
(N = 255)

Factors				Mean	SD
Decision-Making Style	CON	DIV	INV		
	(.62)	(.68)	(.65) ^c		
CON <i>Convergent</i> ^a	1.00			0.97	0.73
DIV <i>Divergent</i> ^b	-.08	1.00		2.70	0.69
INV <i>Inventive</i> ^b	-.30***	.49***	1.00	3.02	0.72

*** p<.001.

^a 0 = Most of the time, 1 = Often, 2 = Sometimes, 3 = Rarely, 4 = Never.

^b 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Most of the time.

^c Subscale Construct Reliabilities

The Relationship between Decision-Making Style and Business Success

The relationship between Decision-Making style and business success was evaluated by obtaining cross-tabulation data. Three measures of business success were used: *survival in business*, *net profit*, and *employment of others*. A significant difference was evident between respondents whose businesses had *survived* and respondents whose businesses had *failed* in relation to *Divergent* Decision-Making Style (chi-square = 9.21, df. = 2, p <.01), and in relation to *Inventive* Decision-Making Style (chi-square = 13.68, df. = 2, p <.001). No significant difference was evident between profitable and non-profitable businesses in terms of Decision-Making Style, but there was a significant difference between respondents who employed others and respondents who did not employ others in terms of *Divergent* Decision-Making Style (chi-square = 6.38, df. = 2, p <.05), and *Inventive* Decision-Making Style (chi-square = 15.62, df. = 2, p <.001).

There was a significant difference between respondents who included business 'growth' aspects (*employing others* and *increased profits*) in their definition of *business success* and those who did not include these aspects in their definition of *business success* in terms of *Inventive Decision-Making Style* (chi-square = 11.09, df = 2, p<.001). Overall, the data would appear to support the conclusion that respondents who successfully establish small businesses (as measured by survival in business and employment of others) report using *Divergent* and *Inventive Decision-Making Styles*.

Comparison of Means

To determine if the mean factor scores for *Convergent*, *Divergent* and *Inventive Decision-Making Style* for a range of independent variables were significantly different, t-tests and analysis of variance (ANOVA) were used to compare two or more means.

Table 3 indicates that respondents who were still in business had a higher mean *Inventive* factor score (3.05) compared to respondents no longer in business (excluding those who had sold their business), (mean = 2.67). The mean difference was -.39, t = -2.82, df. = 237, p<.001. Similarly, the mean *Divergent* score for respondents who had survived in business (2.74) was higher than for respondents who were no longer in business (2.28), t = -3.23, df = 237, p<.001.

Respondents employing others had a higher mean score for *Inventive Decision-Making* (3.23) compared to respondents not employing others (2.89), t = 3.23, df. = 247, p<.001. Therefore the *Inventive Decision-Making* scale not only differentiated between respondents who had survived in business compared to those who were no longer in business, but also differentiated between growth and non-growth businesses.

Table 3
T-Tests for Mean Factor Scores of Decision-Making Style by Survival in Business
(N = 239)

Factor	Survived in Business (n = 204)	Did not Survive in Business (n = 35)	t
CON Convergent ^a	1.03	0.94	.57
DIV Divergent ^b	2.74	2.28	-3.23***
INV Inventive ^b	3.05	2.67	-2.82***

^a 0 = Most of the time, 1 = Often, 2 = Sometimes, 3 = Rarely, 4 = Never.

^b 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Most of the time.

*** p<.001

The Relationship among Decision-Making Style and Demographic Variables

Cross-tabulations were calculated for Decision-Making factor scores and a range of demographic variables including gender, age, previous occupation, similarity of previous work to current business, role models in business, and duration of unemployment. No significant relationships were evident.

To determine if the Decision-Making Style mean factor scores for the range of demographic variables were significantly different, t-tests and one way analysis of variance (ANOVA) were calculated. No significant differences were evident except in relation to *previous occupation* where white collar workers had the highest mean *Divergent* and *Inventive* scores. Table 4 presents the one-way analysis

of variance comparing *Divergent* Decision-Making factor scores by the four groups of previous occupations. Significant differences were evident between respondents from white collar backgrounds and respondents from trade backgrounds ($F = 3.29$, $df = 3/241$, $p < .05$). A post hoc Scheffé test confirmed that there was a significant difference between the two groups at the .05 level. The results indicate that previous background may be relevant in the development of Decision-Making Style.

Table 4
One-Way ANOVA for Mean Decision-Making Factor Scores of Respondents by Previous Occupation

Factor	Previous Occupation				F	Sig. Different Groups
	Not in Workforce (1) (N = 24)	White Collar (2) (N = 135)	Trade (3) (N = 70)	Unskilled (4) (N = 16)		
CON Convergent ^a	0.95	0.95	0.93	1.34	1.46	
DIV Divergent ^b	2.63	2.82	2.53	2.51	3.29**	2-3
INV Inventive ^b	2.99	3.07	3.00	2.68	1.43	

^a 0 = Most of the time, 1 = Often, 2 = Sometimes, 3 = Rarely, 4 = Never.

^b 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Most of the time.

** F probability = <.02

DISCUSSION

The current study viewed entrepreneurs as decision-makers and examined the Style of Decision-Making as a critical process affecting success in small business. The study was exploratory in nature in order to develop a Decision-Making instrument particularly suited to entrepreneurs establishing new small businesses. The results indicate that entrepreneurs who survived the establishment phase in business appear to utilise a significantly different style of Decision-Making from respondents who are no longer in business. Further, the results suggest that the instrument may differentiate between growth and non-growth businesses in terms of one aspect of business growth: expanding employment opportunities.

The comparison of Decision-Making factor scores of respondents by previous background indicated that respondents from white collar backgrounds had significantly higher *Divergent* scores than respondents with trade backgrounds. The results may indicate that Decision-Making Style is affected by previous experience. The results suggest that opportunistic entrepreneurs may have improved chances of success, at least in terms of survival in the establishment phase of business. Further, there are implications for the education and training of entrepreneurs. Programs should be designed to highlight the application of a range of decision-making styles for different problem-solving situations.

'If the process can be improved and appropriate methods can be used during the process then decision-making itself will improve' (Harrison, 1987:6). Potential entrepreneurs could be encouraged to utilise *Divergent* and *Inventive* Decision-Making Styles more often, and thereby to improve their chances of success in the establishment phase.

Limitations

An important limitation of the study relates to non-response bias; it was difficult to contact NEIS graduates who failed to establish businesses or had ceased trading (the definition of 'business failure' for the study) and they may have been reluctant to participate in the study. This may account for the relatively low 'failure rate' (13.7 per cent) of businesses in the study.

Further Research

Further research is required to refine the instrument and to validate the current findings. It would be appropriate to test the instrument with different samples of small business owners including entrepreneurs in other countries which may highlight cultural differences in Decision-Making Style. The instrument should be used to investigate the relationship between entrepreneurial Decision-Making Style and business success beyond the first few years of the establishment phase. This research could examine whether there is a relationship between Decision-Making style and changes in business circumstances, and provide additional data concerning growth and non-growth businesses.

Further research is required to investigate whether an *Inventive* style of Decision-Making facilitates small business growth, or the circumstances when an *Inventive* style may become a liability in relation to business performance. Given that strategy formulation can be viewed as a Decision-Making process (Bateman and Zeithaml, 1989), a study is currently being conducted to investigate the relationship between Decision-Making Style and business strategy in small business.

CONCLUSION

The development of a multi-dimensional, Decision-Making Inventory specifically for small business may contribute to the understanding of the conditions that predict small business performance. The instrument could have practical implications for small business education by giving small business owners insight into their styles of decision-making which may encourage business owners to develop a repertoire of decision-making styles. Further, the instrument may assist in the identification of potentially successful small business operators.

Despite the limitations of the study and the need for additional research, the findings highlight the need to examine a process-oriented approach to entrepreneurship research. Further, in order to develop a model of small firm performance, small businesses should be regarded as unique entities and 'should not be viewed as merely smaller versions of large businesses' (Keats and Bracker, 1988: 41). The findings of the current study support the suggestion by Robinson and Pearce (1984) that small business management characteristics may be quite different from corporate management. This implies that governments may need to examine more closely the goals and intentions of small business founders before assuming that 'successful' small businesses intend to expand and thereby generate employment opportunities. Finally, the use of the Entrepreneurial Decision-Making Inventory may assist in differentiating growth from non-growth businesses.

ACKNOWLEDGEMENT

The author wishes to thank Dr James Sarros for his helpful comments on drafts of this paper.

REFERENCES

- Ajzen, I. (1987). Attitudes, traits and action: Dispositional prediction of behavior in personality and social psychology. In Berkowitz, L. (Ed.). **Advances in Experimental Social Psychology**. 1-63. San Diego: Academic Press.
- Ajzen, I. (1988). **Attitudes, Personality and Behavior**. Milton Keynes, U.K: Open University Press.
- Bateman, T.S. and Zeithaml, C.P. (1989). The psychological context of strategic decisions: A model and convergent experimental findings. **Strategic Management Journal**, Vol. 10, 59-74.
- Bird, B.J. (1992). The operation of intentions in time: The emergence of the new venture. **Entrepreneurship: Theory and Practice**. 17 (1) 11-20.
- Birley, S. (1982). Corporate strategy and the small firm. **Journal of General Management**, Vol. 8, No. 2, Winter.
- Birley, S. and Norburn, D. (1985). Small vs. large companies: the entrepreneurial conundrum. **Journal of Business Strategy**, Summer: 81-87.
- Boshoff, A.B., Bennett, H.F. and Owuso, A.A. (1992). Entrepreneurship research: Where are we and where should we be going? **Development Southern Africa**, 9(1), 47-64.
- Boyle, G.J. (1995). Myers-Briggs Type Indicator (MBTI): Some Psychometric Limitations. **Australian Psychologist**, Vol. 30, (1), 71-74.
- Brockhaus, R.H. and Horwitz, P.S. (1985). The psychology of the entrepreneur. In Sexton, D.L. and Smilor, R.W. (Eds.). **The Art and Science of Entrepreneurship**. Cambridge, Massachusetts: Ballinger.
- Brodzinski, J., Scherer, R. and Weibe, R. (1990). Boundary spanning activity as a function of the small business owner's decision style. **Journal of Business and Entrepreneurship**, 2 (2), 1-11.
- Buttner, E.H. and Gyskiewicz, N. (1993). Entrepreneurs' problem-solving styles: An empirical study using the Kirton Adaption/Innovation theory. **Journal of Small Business Management**, January, 22-31.
- Chaganti, R. and Chaganti, R. (1983). A profile of profitable and not-so-profitable small business. **Journal of Small Business Management**, 21, 26-31.
- Clifford, J. (1980). **Decision Making in Organisations**. London: Longman.
- Dandridge, T.C. (1979). Children are not little grown-ups: Small business needs its own organizational theory. **Journal of Small Business Management**, 17, 53-57.
- Emory, C.W. (1980). **Business Research Methods**. Illinois: Richard D. Irwin, Inc.
- Fried, L. (1989). A new breed of entrepreneur - women. **Management Review**, December, 18-25.
- Gartner, W.B. (1988). Who is an entrepreneur? Is the wrong question. **American Journal of Small Business**, Spring 33-39.

- Gartner, W.B. (1989). Some suggestions for research on entrepreneurship, traits and characteristics. **Entrepreneurship Theory and Practice**, 14, (1), 27-37.
- Goodwin, L.D. and Goodwin, W.L. (1985). Statistical techniques in AERJ articles, 1979-1983: The preparation of graduate students to read the educational research literature. **Educational Researcher**, Vol. 14, 2, 5-11.
- Gore, C., Murray, K. and Richardson B.(1992). **Strategic Decision-Making**. New York: Cassell.
- Gray, J.H. (1994). Unemployment to entrepreneurship: Conditions that launch redundant workers into self-employment. Paper presented at the ANZAM Conference December 1994, Wellington, New Zealand.
- Hair, J.F., Anderson, R.E., Tatham, R. L. and Black, W.C. (1992). **Multivariate Data Analysis with Readings**. 3rd Ed. New York: Macmillan.
- Hamilton, R. (1987). Motivation and aspirations of business founders. **International Small Business Journal**, 6, 1, January/March, 70-78.
- Harrison, E.F. (1987). **The Managerial Decision-Making Process**. Boston: Houghton Mifflin.
- Hornaday, J. and Aboud, J. (1971). Characteristics of successful entrepreneurs. **Personnel Psychology**, 24, 141-153.
- Hornaday, R.W. (1992). Thinking about entrepreneurship: A fuzzy set approach. **Journal of Small Business Management**, October 12-23.
- Hoy, F. and Hellreigel, D. (1982). The Killman and Herden model of organizational effectiveness: criteria for small business managers. **Academy of Management Journal**, 25, 308-322.
- Hudson, L. (1968). **Contrary Imaginations : A Psychological Study of the English Schoolboy**. Harmondsworth: Penguin.
- Ibrahim, A.B., and Goodwin, J.R. (1987). Perceived causes of success in small business. **American Journal of Small Business**, Fall, 41-50.
- Jöreskog, L.C. and Sörbom, D.(1989). **LISREL 7: A Guide to the Program and Applications**. Chicago, Ill: SPSS Inc.
- Keats, B.W. and Bracker, J.S. (1988). Toward a theory of small firm performance: Some guidelines for success. **American Journal of Small Business**, 112 (4) 41-56.
- Keirse, D. and Bates, M. (1984). **Please Understand Me**. Delmar, California: Prometheus Nemesis Press.
- Kilmann, R. and Herden, R. (1976). Towards a systematic methodology for evaluating the impact of interventions on organizational effectiveness. **Academy of Management Review**, 1 (July), 87-98.
- Kirton, M. (1976). Adaption and innovation: a description and measure. **Journal of Applied Psychology**, 61, October, 622-629.

- Kirton, M. (1984). Adaptors and Innovators - why new initiatives get blocked. **Long Range Planning**, Vol. 17, No. 2, 137-143.
- Low, M.B. and MacMillan, I.C. (1988). Entrepreneurship: Past research and future challenges. **Journal of Management**, Vol. 14, No. 2, 139-161.
- Lumpkin, J.R. and Ireland, R.D. (1988). Screening practices of new business incubators: The evaluation of critical success factors. **American Journal of Small Business**, 12(4) 59-81.
- McClelland, D. (1965). Achievement motivation can be developed. **Harvard Business Review**, 43, 7-16, 20-24.
- MacMillan, I.C., Zeemann, L. and Subba Narasimha, P.N. (1987). Criteria distinguishing successful from unsuccessful ventures in the venture screening process. **Journal of Business Venturing**, Spring, 123-137.
- Mathôt, G.B. (1989). How to get new products to market quicker in Lloyd, B. (ed.) **Entrepreneurship Creating and Managing New Ventures**. Oxford: Pergamon.
- Mintzberg, H., Rasinghani, D. and Theoret, A. (1976). The structure of unstructured decision processes. **Administrative Science Quarterly**, 21, 246-275.
- Moore, D.P. (1990). An examination of present research on the female entrepreneur - suggested research strategies for the 1990s. **Journal of Business Ethics**, Vol 3, 275-281.
- Mosley, D.C., O'Brien, F.P. and Pietri, P.H. (1991). Problem solving styles determine manager's approach to making decisions. **Industrial Management**, September/October, 5-9.
- Myers, I.B. and Myers, P.B. (1980). **Gifts Differing**. Palo Alto, California: Consulting Psychologists Press.
- Niehoff, B.P., Enz, C. and Grover, R.A. (1990). The impact of top-management actions on employee attitudes and perceptions. **Group and Organization Studies**, Vol 15, No. 3, September, 337-352.
- Nutt, P. (1989). **Making Tough Decisions**. San Francisco: Jossey-Bass Inc. Publishers.
- Olson, S.F. and Currie, H.M. (1992). Female entrepreneurs: personal value systems and business strategies in a male-dominated industry. **Journal of Small Business Management**, January, 49-57.
- Pate, L.E., Driver, M.J., Gatewood, E., Goodman, J.P. and Coombs, M.W. (1990). Decision style and new venture success: An analysis of INC 500 and YPO executives' environments. In Churchill, N.C., Bygrave, W.D., Hornaday, J.A., Muzyka, D.F., Vesper, K.H. and Wetzel, W.E. (Eds.). **Frontiers of Entrepreneurship Research**. Wellesley, Massachusetts: Babson College, 42-56.
- Payne, R. (1993). 2b or not 2b? **British Academy of Management Newsletter**, June, 7.
- Robinson, R.B. and Pearce, J.A. (1984). Research thrusts in small firm strategic planning. **Academy of Management Review**, 9, 128-137.

- Rowe, A.J. and Mason, R.O. (1987). **Managing with Style**. San Francisco: Jossey -Bass Inc.
- Sandberg, W.R. (1986). **New Venture Performance: The Role of Strategy and Industry Structure**. Lexington, Massachusetts: Lexington Books.
- Sexton, D. and Bowman-Upton, N.(1986). Validation of a personality index: Comparative entrepreneurial analysis of female entrepreneurs, managers, entrepreneurship students and business students. In Ronstadt, R., Hornaday, J. Peterson, R. and Vesper, K. (Eds.). **Frontiers of Entrepreneurship Research**, Wellesley, Massachusetts: Babson College, Centre for Entrepreneurial Studies, 40-51.
- Simon, H. (1986) in Witte, E. and Zimmermann, H. (Eds.). **Empirical Research on Organizational Decision-Making**. Amsterdam: Elsevier Science Publishers.
- Stevens, J. (1992). **Applied Multivariate Statistics for the Social Sciences**. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Stuart, R. and Abetti, P. (1987) Start-up ventures: Towards the prediction of initial success. **Journal of Business Venturing**, 2, (3), 215-230.
- Tabachnick, B.G. and Fidell, L.S. (1989). **Using Multivariate Statistics**. New York: Harper and Row.
- Van de Ven, A.H. (1980). Early planning, implementation and performance of new organizations in Kimberly, J.R. and Miles, R. (Eds.). **The Organization Life Cycle** San Francisco: Jossey Bass 83-134.
- Zakay, D. (1984). The evaluation of managerial decisions' quality by managers. In Bordherding, K., Brehmer, B., Vick, C. and Wagenaar, W. (Eds.). **Research Perspectives on Decision Making under Uncertainty**. Amsterdam: Elsevier Science Publishers.