Pellervon taloudellisen tutkimuslaitoksen työpapereita

Pellervo Economic Research Institute Working Papers

N:o 9 (toukokuu 1998)

ENTREPRENEURSHIP AND INNOVATIVE INCLINATIONS IN THE FINNISH COUNTRYSIDE[1]

Aki Kangasharju*
Kimmo Hyrsky**

Helsinki toukokuu 1998

* Aki Kangasharju, Pellervo Economic Research Institute, Finland
** Kimmo Hyrsky, University of Jyväskylä, Finland

1 This paper is based on paper entitled 'Adaptors and Innovators in Nonurban Environment' by Kimmo Hyrsky and Aki Kangasharju presented at 1998 Babson College/Kauffman Foundation Entrepreneurship Research Conference, Gent, Belgium, May 20-24, 1998. This study was a part of research project 'Entrepreneurship and the Characteristics of Rural Areas' funded by Academy of Finland.

ISBN 951-8950-81-4
ISSN-1455-4623

Pellervon taloudellinen tutkimuslaitos PTT
Pellervo Economic Research Institute PTT
Eerikinkatu 28 A
00180 Helsinki

KANGASHARJU, AKI JA HYRSKY, KIMMO. 1998. ENTREPRENEUSHIP AND INNOVATIVE INCLINATIONS IN THE FINNISH COUNTRYSIDE. Pellervo Economic Research Institute Working Papers No. 9 (May 1998). 15 p. (Pellervo Economic Research Institute PTT; Eerikinkatu 28 A, FIN 00180 Helsinki, Finland). ISBN 951-8950-81-4. ISSN 1455-4623.

ABSTRACT: This paper investigates inclinations of individuals to innovative style of problem-solving and decision-making using the Adaption-Innovation Inventory developed by Michael Kirton. This KAI Inventory conceptualizes individuals as falling on a continuum ranging from an extreme adaptor to an extreme innovator. Adaptors try to operate more efficiently within existing boundaries, whereas innovators tend to break down existing barriers and often develop new paradigms. KAI is used to measure the degree of these two different styles of problem-solving among Finnish entrepreneurs and non-entrepreneurs. The results obtained for Finland were largely in accordance with the findings of previous KAI studies for other countries. Namely, 1) entrepreneurs significantly out-scored the non-entrepreneurs and 2) business founders scored much higher than non-founders. The KAI mean score for the sample of 1,479 observations was 88.79, which implies that the respondents are more inclined to adaptive than innovative-type of problem-solving. This result tends to reflect the high share of the rural population in the sample as well as the adaptive-oriented attitudes and behaviors in the Finnish countryside, since the respondents of the urban areas gained significantly higher scores than those living in rural areas.
***Key words**: KAI, innovators, adaptors, entrepreneurs*

KANGASHARJU, AKI JA HYRSKY, KIMMO. 1998. YRITTÄJYYS JA INNOVATIIVINEN AJATTELUTAPA MAASEUDULLA. Pellervon taloudellisen tutkimuslaitoksen työpapereita n:o. 9 (May 1998). 15 s. (Pellervon taloudellinen tutkimuslaitos PTT; Eerikinkatu 28 A, 00180 Helsinki). ISBN 951-8950-81-4. ISSN 1455-4623.

TIIVISTELMÄ: Tässä työssä tarkastellaan päätöksenteko- ja ongelmanratkaisutyylejä käyttämällä Michael Kirtonin kehittelemää Adaption-Innovation -kyselyä. Tämä KAI-kysely perustuu ajatukseen, jonka mukaan yksilöiden päätöksenteko- ja ongelmanratkaisutyylit voidaan sijoittaa jatkumolle, jonka ääripäitä luonnehditaan adaptiiviseksi ja innovaatiiviseksi tyyliksi. Adaptiivisen tyylin ihminen koettaa 'tehdä paremmin' olemassa olevan paradigman puitteissa, kun taas innovatiivisen tyylin ihminen koettaa 'tehdä eri tavoin' mahdollisesti murtamalla myös ongelman ympärillä oleva viitekehys. Tässä työssä mitataan, kuinka adaptiivisia tai innovatiivisia ovat 25-49 -vuotiaat yrittäjät ja muu väestö aineistossa, joka pääosin kerättiin Keski-Suomen maaseudulla. Tulokset olivat kaiken kaikkiaan linjassa muissa maissa tehtyjen tutkimusten kanssa, sillä yrittäjät havaittiin muuta väestöä innovatiivisemmin ajatteleviksi ja perustajayrittäjät havaittiin innovatiivisemmin ajatteleviksi kuin yrittäjät, jotka eivät olleet itse perustaneet yritystään. Tulosten mukaan vastaajat olivat keskimäärin adaptiivisia sillä 32-kohtaisen KAI-kyselyn keskiarvo oli 88.79, kun teoreettinen keskiarvo on 96. Tämä tulos heijastelee suurta maaseutuväestön osuutta otoksessa, sillä kaupungissa suurimman osan elämästään asuneet saivat tilastollisesti merkitsevästi innovatiivisemman KAI-tuloksen kuin ihmiset, jotka olivat asuneet suurimman osan elämästään maaseudulla.
***Avainsanat**: KAI, innovatiivisuus, adaptiivisuus, yrittäjät*

1. INTRODUCTION

Innovativeness and small firms are currently regarded as major factors, which most efficiently contribute to economic development and employment. This has resulted for example in an increase in public aid to R&D projects and so-called indigenous small firm formation as means to speed up economic growth and development. There is also a widely accepted perception that these factors, i.e. innovativeness and small firms, are closely interrelated (see e.g. Cannon, 1985). Literature reflects a belief that the nature of the entrepreneur allied to the particular characteristics of the small enterprise is very appropriate for innovative or creative activities. Various factors have contributed to this belief: the notion of the entrepreneur as a "mould maker"; the link between open and organic organization and creativity; the proposition that smallness, decisiveness and flexibility counterbalance absolute investment; and the evidence that small businesses account for a disproportionate number of new processes and products.

Initializing these thoughts Schumpeter (1965) sees an entrepreneur as "an idea man and a man of action who possesses the ability to inspire others, and who does not accept boundaries of structured situations. He is a catalyst of change who is instrumental in discovering new opportunities, which makes for the uniqueness of the entrepreneurial function". Similarly, Krausher (1970) argues that an innovator has a strong personality capable of generating enthusiasm, persuading others to his or her point of view. An innovator is creative, possessing imagination to look at the future, and foresee opportunities. He or she is a risk-taker and capable of inspiring creativity.

Based partly on the above arguments, Kirton (1976) proposed an Adaption-Innovation theory focusing on individuals´ different cognitive styles of creativity, problem-solving and decision-making in the context of organizations. Defining adaption-innovation as a basic dimension of behavior, he suggested that everyone can be located on a continuum ranging from an ability to `do things better´ to an ability to `do things differently´. Type of behavior at the ends of the continuum were named as adaptor and innovator, respectively.

On the one hand, adaptors tend to be conservative, place great emphasis on precision, efficiency, discipline, attention to norms and take a problem as initially defined and develop solutions within currently accepted guidelines (Kirton, 1976). Adaptors are eminently capable of initiating changes that improve the current system, but may fail to see possibilities outside the accepted pattern. On the other hand, innovators are very good at generating ideas

for more radical change, but often fail to get them accepted. They are more likely to change the context of the situation in generating solutions, to create novel solutions, to prefer less structured work environments and to concentrate on effectiveness rather than efficiency (Stewart, 1996, p. 5). Innovators are those who incorporate and treat the structure surrounding the problem as part of the problem and hence involve "doing things differently". They see the guidelines as part of the problem and often incorporate new and untried processes into their solutions. They are risk-takers who challenge and attempt to change the guidelines. Innovators are often undisciplined rules-challengers and look for new and different ways of solving problems and in the process often cause upheavals in the normal routine (Whyte, 1950). Table A1 in the Appendix gives a summary of the typical behavioral characteristics of adaptors and innovators as presented in the KAI (Kirton, 1994, pp. 10-11). To put the difference between the two in a nutshell, adaptors try to operate more efficiently within existing boundaries, whereas innovators tend to break down existing barriers and often develop new paradigms. Kirton (1976, p. 622) is careful to point out that both adaptors and innovators create in their own way, although past literature on creativity has mainly focused on describing innovators.

Table 1. Review of entrepreneurship studies with KAI inventory

Researcher(s)	**Sample**	**Results**
Tandon (1987) USA	Founder owner-managers (N=25)	Innovative entrepreneurs displayed higher failure rates than their more adaptive colleagues.
Dewan et al. (1989) India	Entrepreneurs (N=100), government officers (N=100) and private sector executives (N=100)	Entrepreneurs scored significantly higher on the KAI than non-entrepreneurs.
Gimenez (1991) Brazil	Entrepreneurs (N=74)	Innovators were heavily concentrated in less mature and smaller firms.
Goldsmith & Kerr (1991) UK	Entrepreneurship students (N=34) and a control group of business students not in the ent.ship	Entrepreneurship students more innovative.
Buttner & Gryskiewicz (1993) USA	Founder owner-managers (N=81) and Kirton (1987) mean for U.S. managers in large organizations	Entrepreneurs significantly more innovative than US managers. Innovative entrepreneurs had started more businesses than their more adaptive colleagues.
Walsh & Anderson (1995)	Founder owner-managers	Founders were significantly more

	(N=51) and non-founder	innovative than non-founders.
Ireland	owner-managers (N=57)	

Later, Kirton (1980) developed and Adaption-Innovation Inventory (KAI) to operationalize his theory. Although the inventory has been tested in many countries and organizations, the link between KAI and entrepreneurship has only recently been explored in more detail (see Buttner & Gryskiewicz, 1993; and Walsh & Anderson, 1995). There is also a dearth of KAI studies that compare entrepreneurs with non-entrepreneurs.

A review of past entrepreneurial studies with KAI is displayed in Table 1. A common feature in these studies is that they have analyzed individuals associated with certain organizations. A major finding in these studies is that entrepreneurs have tended to score higher than non-entrepreneurs. Another finding is that business founders seem to have the edge over non-founders.

The present paper tests to see whether these results apply also to Finland. In particular the paper measures the differences in the KAI scores between entrepreneurs, would-be entrepreneurs and non-entrepreneurs in Finland. The paper also includes in the analysis demographic variables such as gender, age, education, place of residence, role in start-up, business sector and size, etc. The analysis is not restricted to any particular organization, but instead the investigation utilizes a sample of general population mainly living in rural parts of Finland. This enables to scrutinize whether innovative inclinations differ in rural areas from those in urban areas. The KAI Inventory has not been used in Finland previously.

2. METHODOLOGY AND SAMPLE

The KAI inventory consists of 32 items designed to reveal different cognitive styles of creativity, problem-solving and decision-making. Each item is scored on a scale from 1 to 5, producing a continuum of total scores ranging from 32 to 160, with a theoretical mean of 96. The higher an individual scores, the more innovative is his or her problem solving and decision making style. Instead of emphasizing any dichotomous features, individuals are conceptualized as being situated on a continuum ranging from an extreme adaptor to an extreme innovator. Location on the continuum is neither pejorative nor praiseworthy.

The data of the study is based upon a postal survey in Central and Eastern Finland. The original KAI Inventory was translated into Finnish and mailed to some 3,200 people representing the economically active population between 25 and 49 years of age. The total number of usable returns received was 1,479 yielding a very high response rate of 46,4%, demonstrating the keen interest which Finnish people have in supporting entrepreneurship research.

The returns (1,479) consisted of 193 entrepreneurs. Within that sub-group 139 entrepreneurs were also founders of the firm and 54 were non-founders. Then, there were 1,000 non-entrepreneurs in the sample. 698 of them were salaried workers and 302 unemployed people. Finally, we distinguished a group consisting of 286 would-be entrepreneurs. We further subdivided this group to 123 “wanna-bes“ and 163 potential entrepreneurs.

The would-be entrepreneurs were differentiated from the general population on the basis of them fulfilling strict criteria concerning entrepreneurial characteristics and inclinations. The criteria dealt with issues such as: prior entrepreneurial and work experience, educational background, parent(s) of respondents being or having been entrepreneurs and variables measuring Need for Achievement (adapted from Cassidy & Lynn, 1989) and Locus of Control (adapted from Levenson, 1973). The class of would-be entrepreneurs was further divided into two subgroups based on whether the respondent had or had not a serious intention of setting up a small business. This was due to the fact that some people with real potential for self-employment indicated that they were not going to enter small business ownership. The two groups were thus named as “wanna-bes“ and “potential entrepreneurs“.

The informants were residents of either the regional center of Central Finland, Jyväskylä, or one of three types of geographical areas in Central and Eastern Finland. Excluding Jyväskylä three other areas consist of rather sparsely populated municipalities located quite far from big centers. These three areas have also differences in entrepreneurial activity. They consist of

municipalities where 1) entrepreneurial activity has always been very high (municipalities in the subregions of Alajärvi & Lapua), 2) entrepreneurial activity has traditionally been low whereas agricultural activity has been relatively high (those in the subregions of Iisalmi & Nilsiä) and 3) entrepreneurial activity is currently high, but has previously been relatively low (those in the subregions of Saarijärvi & Viitasaari). Subregions refer here to the so-called NUTS4 classification in the European Union.

Table 2. Basic Demographics

Total Sample		N=1,479
Sex of Respondent	Male	74.5%
	Female	25.5%
Age	Less than 30 years	17.6%
	30 to 40	38.2%
	41 to 49	43.7%
Basic Education	Comprehensive school	64%
	High school	28%
Professional Education	No professional edu.	12.9%
	Vocational training	51.3%
	Intermediate grades	23.6%
	University degree	12.3%
Place of Residence	Town/city centre	22.2%
	Countryside	77.2%
Entrepreneurial Sample		N=193
Business Sector	Service	17.6%
	Industry	67.4%
Age of Business	1-5 years	38.2%
	6 to 10 years	29.4%
	11 to 15 years	15.6%
	16 or more	16.8%
Number of Employees	10 or less	79%
	11 to 25	13%
	26 to 50	4%
	51 to 100	2%
Role in Start-up	Founders	72%
	Non-founders	28%
Number of Start-ups	One	78.9%
	Two or more	21.1%

Note: May not add to 100% due to missing responses

The demographics of the samples are in Table 2. In the total sample most of the respondents were male, and a large proportion of the respondents were more then 41 years old. The mean age of the respondents was 39 years. Most of the respondents had a vocational training as their highest professional education reflecting rather low level of education in the sample. Some 75 % of respondents indicated that he or she had lived most of his or her live in rural areas or smallish industrial towns, the rest in larger towns or cities. In the entrepreneurial sample some 72 % of the entrepreneurs was also founder of the firm he or she is running.

The statistical analyses of the KAI data included t-tests and variance analyses. These were carried out to explore the potential similarities and differences between different groups of respondents.

3. RESULTS

The mean KAI score for the whole sample was rather low, 88.79 (S.D.=13.33). Total scores ranged from 48 to 149. This result implies rather adaptive oriented style of problem-solving and decision-making in the Finnish countryside, since the theoretical mean of the KAI is 96. In the entrepreneurial group the mean KAI score was 92.1.

Kirton (1976) and Goldsmith (1989) have provided evidence for the stability of an individual´s KAI score over time. This means that regardless of when the inventory was administered, the scores for one particular group can be directly compared to those of another group. Thus, the results of the present study can be tentatively compared with previous KAI studies.

Table 3 shows the KAI results for Finland obtained using this sample that contains general population living mainly in rural areas, and the KAI results for other countries obtained using samples that represent individuals of certain organizations (see Kirton, 1994 for details). Table 3 indicates that the Finnish mean score is clearly lower than that for other countries. Similarly Table 4 shows the mean scores for entrepreneurs in Finland, Ireland and the USA. On this evidence, the Finnish entrepreneurs also seem to be more adaptive than their Irish and US counterparts.

Table 3. Review of KAI mean scores in the samples consisting of individuals in different level of organizations

Country	Number of observations	KAI mean score	Standard deviation
Finland*	1479	88.79	13.3
France	265	94.61	19.3
Italy	835	94.07	17.7
The Netherlands	422	95.30	17.0
Slovakia	385	95.06	15.6
UK	562	94.99	17.9
USA	214	94.98	15.9

Note: *) This sample contains general population living mainly in rural areas in Finland. Source for other than the Finnish results: Kirton (1994).

Interestingly, in a recent study using the Carland Entrepreneurship Index in the USA and Finland (N=1,000 in both countries), the US entrepreneurs also scored significantly higher than the Finns on the Innovation Scale of the Jackson Personality Inventory (see Hyrsky & Tuunanen, 1998). Perhaps these low Finnish scores on innovation can be attributed to cultural aspects as well as the inborn personal characteristics of the individuals. National

cultures are important variables affecting especially attitudes and personality traits. Entrepreneurship, of course, tends to occur differently in various countries. If the social system surrounding the individual highly values entrepreneurial behavior, e.g. innovativeness and risk-taking, it is simply more likely to produce entrepreneurial events than an environment with other contrasting values (Giamartino et al., 1993). In order to really understand the differences in entrepreneurial behavior, a wider scale of factors such as social ideology, norms and rewards for behavior, individual and national aspirations, religious doctrines, and education must be examined on a comparative basis.

Table 4. Mean KAI scores for entrepreneurs in different countries

Classification	**Country**	**N**	**Mean**	**Standard deviation.**	**Author(s)**
Entrepreneurs	USA	79	113.9	13.20	Buttner & Gryskiewicz (1993)
Founder Owner-Managers	Ireland	51	109.3	14.50	Walsh & Anderson (1995)
Entrepreneurs	Finland	193	92.1	13.89	The present study

Because the major proportion of the respondents in the present study were living in the countryside we first tested to see whether the place of residence would affect the KAI score, or is the low KAI score in the sample due to a particular cultural characteristic of Finland. Second, we also tested to see whether other demographic factors are related to innovative inclinations. Tables 3 and 4 also indicate that the mean KAI score tend to be higher for the entrepreneurs than for the total sample. Finally, we tested to see whether entrepreneurs indeed have statistically higher KAI score than the rest of the population. T-tests were conducted to examine these differences. Results concerning demographic variables and KAI scores are shown in Table 5.

Interestingly, residents of urban environments, whose mean was 91.56, tended to be more innovative than those living in rural areas with a mean of 87.98 (Table 5). A significant difference in favor of the “townies“ emerged. This result is consistent with the findings of Niittykangas & Tervo (1996, p. 138) from their study on the environmental and personality characteristics affecting small business start-ups in the province of Central Finland. In their sample of 2,728 respondents, people living in the countryside were clearly more conservative towards new and aberrant issues than residents of bigger centers. This may partly explain the

surprisingly low mean score of the whole sample found in the present study, since 77 per cent of respondents lived in the countryside.

Males, with a mean score of 89.78 manifested significantly higher preferences for innovative type of thinking than females. This result accords with Kirton (1976) who also found that women are more adaptor-inclined than men. Another similarity with the Kirton study was obtained regarding age. The results shown in Table 5 indicate that individuals below 30 years of age appeared to be significantly more innovative than those aged between 30-49.

As far as education is concerned high school graduates scored significantly higher than non-graduates (Table 5). Similarly, respondents who hand completed professional education were significantly more innovator-inclined than those who hand not. Moreover, people with university degree scored significantly higher than those without any academic background. Interestingly, this result accords with Niittykangas et al. (1994) who studied venture capital in rural Finland.

Table 5. T-test Results for Differences in KAI Mean Scores according to Background variables (N = 1,479)

Variable	Mean	(N)	S.D.	t	p
Gender					
Male	89.78	(1102)	13.04	4.93	.000
Female	85.89	(377)	13.76		
Age					
Less than 30	90.38	(260)	11.48	2.41	.017
30 or more	88.43	(1212)	13.60		
Less than 40	89.80	(825)	13.22	3.38	.001
40 or more	87.46	(647)	13.22		
Basic Education					
Completed high school	92.52	(414)	15.05	6.25	.000
No high school	87.34	(1065)	12.31		
Professional Education					
Completed	89.40	(1289)	13.33	4.62	.000
No professional edu.	84.64	(190)	12.64		
Academic Education					
Holds a degree	94.97	(182)	14.81	6.11	.000
No academic edu.	87.92	(1297)	12.88		
Place of Residence					

Town/city centre	91.56	(330)	13.80	4.30	.000
Countryside	87.98	(1115)	13.14		

Next, t-tests and variance analyses were conducted to explore the differences in the KAI mean scores between and within different subgroups in the sample. These results are displayed in Tables 6 and 7. The mean for the entrepreneurial sample was 92.08, which is significantly higher than the respective non-entrepreneurial mean at 86.82. As show in Table 1 above this finding gets support from a study by Dewan et al. (1989) in India. They used the KAI to measure three organizational groups: small manufacturing business entrepreneurs, private sector executives and government officers (N=300). The entrepreneurial sample scored significantly higher than the combined non-entrepreneurial sample. Similar entrepreneurial hegemony over managers in KAI scores was evident in the studies by Buttner & Gryskiewicz (1993) and Rosenfeld et al. (1993). Both sets of researchers indicated managers to be clearly more adaptor-inclined. In the present study, the would-be entrepreneurs, with a mean score of 93.44, were also found to be significantly more innovative than the non-entrepreneurs with a mean of 86.82.

Interestingly, the “would-bes“ scored slightly higher than the entrepreneurs. The difference between these two mean scores was not statistically significant however, which means that the "would-be" entrepreneurs and actual entrepreneurs perform similar level of inclination to innovative thinking.

Table 6. One-way analysis of variance between subgroups of respondents

Source of Variation	**Sum of Squares**	**DF**	**Mean Squares**	**F-Ratio**	**F-Probability**
Between Groups	12127.723	2	6063.862	35.715	.0000

Subgroups		**Mean (N)**	**S.D.**	**Group 1**	**Group 2**	**Group 3**
Entrepreneurs	Group 1	92.08 (193)	13.9			* * *
Would-bes	Group 2	93.44 (286)	14.7			* * *
Non-entrepreneurs	Group 3	86.82 (1000)	12.3			

Note: * * * Indicates a significant difference at .001 level between groups

Moving to the analysis of within sub-group variation Table 7 shows that firm founders exhibited classical entrepreneurial features by scoring significantly higher on innovativeness than non-founders. This parallels with a work of Walsh & Anderson (1995) on Irish small business owner-managers. They found that individuals with less innovative scores on the KAI exhibited "latent entrepreneurial behavior", ie. they did not found their businesses. Kirton (1989) has also indicated that innovator-inclined individuals with high risk taking propensity are more likely than others to set up their own businesses.

Further, in the two subgroups of would-be entrepreneurs, namely "wanna-bes" and potential entrepreneurs, a significant difference in favor of the former group emerged (Table 8). This result tend to imply that a conscious desire to found a firm involves an innovative cognitive style and "wanna-be" entrepreneurs may only have lacked the proper opportunity to found a firm perhaps due to external factors.

Within the subgroup of non-entrepreneurs the higher mean score of salaried workers than unemployed people was not statistically significant. This implies that unemployment tends to be unrelated with innovative inclinations of individuals.

Table 7. T-test Results for Differences in KAI Mean Scores within Subgroups

Variables	Mean	(N)	S.D.	t	p
Entrepreneurs	92.08	(193)	13.89	-5.30	.000
Non-entrepreneurs	86.82	(1000)	12.34		
Entrepreneurs					
Founders	94.12	(139)	14.30	-3.37	.001
Non-founders	86.82	(54)	11.29		
Would-bes					
"Wanna-bes"	98.83	(123)	14.88	-5.68	.000
Potential ent.	89.37	(163)	13.17		
Non-entrepreneurs					
Salaried workers	87.20	(698)	12.18	-1.47	.141
Unemployed people	85.95	(302)	12.68		

4. CONCLUDING COMMENTS

This paper explored inclinations of individuals to innovative style of thinking in the Finnish countryside. The primary aim of the study was to test the perception that entrepreneurs have more innovative-type of thinking than non-entrepreneurs. These first results in the Finnish context were largely in accordance with the findings of the previous KAI studies. Namely, 1) entrepreneurs significantly out-scored non-entrepreneurs and 2) business founders scored much higher than non-founders.

These results give support to the argument that innovativeness entrepreneurship are closely interrelated. This implies that one possible policy instrument to encourage entrepreneurship is to encourage bold, self-reliant thinking which tries to look for answers to problems by considering both the particular problem and the framework within which the problem emerges.

Overall, the Finnish KAI scores were rather low. This result tends to reflect the high share of the rural population in the sample as well as the adaptive-oriented attitudes and behaviors in the Finnish countryside, since the respondents of the urban areas gained significantly higher scores than those living in rural areas. Moreover, the low level of education, again reflecting the high share of rural respondents, found throughout the sample may partly explain the low mean score. As a result, the findings call for further empirical investigation with more general samples.

REFERENCES

Buttner, E.H. & Gryskiewicz, N. (1993). Entrepreneurs´ Problem-Solving Styles: An Empirical Study Using the Kirton Adaption/Innovation Theory. Journal of Small Business Management, 31 (1), pp. 22-31.

Cannon, T. (1985). Innovation, Creativity and Small Firm Organization. International Small Business Journal, 4 (1), pp. 33-41.

Cassidy, T. & Lynn, R. (1989). A Multifactoral Approach to Achievement Motivation: The Development of a Comprehensive Measure. Journal of Occupational Psychology, 62, pp. 301-312.

Dewan, S., Dewan, S.K. & Rodrigues, A. (1989). Small Business Entrepreneurs: How Innovative Are They? Proceedings of the 34th World Conference of the International Council for Small Business, pp. 408-423.

Giamartino, G.A., McDougall, P.P. & Bird, B.J. (1993). International Entrepreneurship: The State of the Field. Entrepreneurship, Theory & Practice, 18 (1), pp. 37-42.

Gimenez, F. (1991). Small Firms Strategic Behavior and Styles of Creativity. Paper Presented at the RENT V Research in Entrepreneurship Conference at the University of Vaxjo, Sweden, November 28-30.

Goldsmith, R.E. (1989). Creativity Style and Personality Theory. In Kirton, M.J. (ed.), Adaptors and Innovators : Styles of Creativity and Problem Solving. London: Routledge, pp. 37-55.

Goldsmith, R.E. & Kerr, J.R. (1991). Entrepreneurship and Adaption-Innovation Theory. Technovation, 11 (6), pp. 373-382.

Hyrsky, K & Tuunanen, M. (1998). A Comparative Study on Innovation Preferences Between Finnish and US Entrepreneurs and Small Business Owners. Paper to be Presented at the First International SMESME Conference at the University of Sheffield, 20-22 April, 1998.

Kirton, M.J. (1976). Adaptors and Innovators: A Description and Measure. Journal of Applied Psychology, 61 (5), pp. 622-629.

Kirton, M.J. (1980). Adaptors and Innovators in Organizations. Human Relations, 33 (4), pp. 213-224.

Kirton, M.J. (1989). A Theory of Cognitive Style. In Kirton, M.J. (Ed.), Adaptors and Innovators: Styles of Creativity and Problem-Solving. London: Routledge, pp. 1-36.

Kirton, M.J. (1994). Adaptors and Innovators: Styles of Creativity and Problem Solving.

New York: Routledge.

Krausher, P.M. (1970). New Products and Diversification. Braden System Press

Levenson, H. (1973). Multidimensional Locus of Control in Psychiatric Patient. Journal of Consulting and Clinical Psychology, 41, pp. 397-404.

Niittykangas, H, Storhammar, E and Tervo, H (1994). Yrittäjyys ja yritsten synty paikallisissa toimintaympäristöissä [Entrepreneurship and Business Start-Ups in Regional Environments, in Finnish]. University of Jyväskylä, Publications of Centre for Economic Research in Central Finland, 132.

Niittykangas, H & Tervo, H. (1996). Personality and Environmental Factors in Explaining Regional Differences in Entrepreneurial Activity - The Case of Central Finland. Proceedings of the RISE´96 Conference, University of Jyväskylä, Finland, pp. 131-144.

Rosenfeld, R.B., Wingerer-Bearskin, M., Marcic, D. & Braun, C.L. (1993). Delineating Entrepreneurs´ Styles: Application of Adaption-Innovation Subscales, Psychological Reports, 72, pp. 287-298.

Schumpeter, J.A. (1965). Economic Theory and Entrepreneurial History. In Aitken, H.G.J. (ed.), Explorations in Enterprise. Cambridge, MA: Harvard University Press.

Stewart, W.H. (1996). The Role of Innovativeness in Entrepreneurship: A Review and Research Agenda. Proceedings of the RISE´96 Conference at the University of Jyväskylä, Finland, pp. 183-196.

Tandon, R. (1987). Study of Initial Success for Early Investors in Entrepreneurial New Ventures. Ph.D. Dissertation, University of Minnesota.

Walsh, J.S. & Anderson, P.H. (1995). Owner-Manager Adaption/Innovation Preference and Employment Performance: A Comparison of Founders and Non-Founders in the Irish Small Firm Sector. Journal of Small Business Management, 33 (3), pp. 1-8.

Whyte, W.H. (1950). The Organization Man. London: Jonathan Capte.

APPENDIX

TABLE A1. Characteristics of Adaptors and Innovators (Kirton, 1994)

The Adaptor	The Innovator
Characterized by precision, reliability, efficiency, methodicalness, prudence, discipline, conformity.	Seen as undisciplined, thinking tangentially, approaching tasks from unsuspected angles.
Concerned with resolving residual problems thrown up by the current paradigm.	Could be said to search for problems and alternative avenues of solution, cutting across current paradigms.
Seeks solutions to problems in tried and understood ways.	Queries problems´ concomitant assumptions: manipulate problems.
Reduces problems by improvement and greater efficiency, with maximum of continuity and stability.	Is catalyst to settled groups, irreverent of their consensual views.
Seen as sound, conforming, safe, dependable.	Seen as unsound, impractical: often shocks his opposite.
Liable to make goals of means.	In pursuit of goals treats accepted means with little regard.
Seems impervious to boredom, seem able to maintain high accuracy in long spells of detailed work.	Capable of detailed routine (system maintenance) work for only short bursts.
Is an authority within given structures.	Tends to take control in unstructured situations.
Challenges rules rarely, cautiously, when assured of strong support.	Often challenges rules, has little respect for past custom.
Tends to high self-doubt. Reacts to criticism by closer outward conformity. Vulnerable to social pressure and authority; compliant.	Appears to have low self-doubt when generating ideas, not needing consensus to maintain certitude in face of opposition.
Is essential to the functioning of the institution all the time, but occasionally needs to be `dug out´ of his system.	In the institution is ideal in unscheduled crises, or better still to help avoid them, if he can be controlled.
When collaborating with innovators:	*When collaborating with adaptors:*
Supplies stability, order and continuity to the partnership.	Supplies the task orientations, the break with past and accepted theory.
Is sensitive to people, maintains group cohesion and co-operation.	Appears insensitive to people, often threatens group cohesion and co-operation.
Provides a safe base for the innovator`s riskier operations.	Provides the dynamics to bring about periodic radical change, without which institutions tend to ossify.