ACTA FORESTALIA FENNICA

205

J. ASHLEY SELBY

AN EXPLORATORY INVESTIGATION OF ENTREPRENEURIAL SPACE: THE CASE OF SMALL SAWMILLS, NORTH KARELIA, FINLAND

TUTKIMUS YRITTÄJYYDESTÄ: PIENSAHAT POHJOIS-KARJALASSA

THE SOCIETY OF FORESTRY IN FINLAND
THE FINNISH FOREST RESEARCH INSTITUTE

Arvoisa Acta Forestalia Fennica -sarjan lukija

Metsäntutkimuslaitoksen ja Suomen Metsätieteellisen Seuran yhteistyösopimuksen mukaisena ilmestyy nyt ensimmäinen yhteinen Acta Forestalia Fennica -sarjan nide. Sopimuksen mukaisesti Metsäntutkimuslaitoksen sarja Communicationes Instituti Forestalis Fenniae on yhdistetty Acta Forestalia Fennica -sarjaan.

Acta Forestalia Fennica -sarjan julkaisut lähetetään Actan tilaajien ohella myös kaikille Communicationes -sarjan tilaajille. Metsäntutkimuslaitoksen toimittamista Acta-sarjan julkaisuista saa Communicationes-sarjan tapaan yksittäiskappaleita Metsäntutkimuslaitoksen kirjastosta.

Toivomme, että yhteisellä sarjalla voimme entistä paremmin välittää metsäntutkimuksen tuloksia tiedon käyttäjille.

Mikäli teillä on kysyttävää, pyydämme teitä ottamaan yhteyttä sarjojen toimitukseen.

ACTA FORESTALIA FENNICA

Acta Forestalia Fennica was established in 1914 by the Society of Forestry in Finland. It was published by the Society alone until 1989, when it was merged with Communicationes Instituti Forestalis Fenniae, started in 1917 by the Finnish Forest Research Institute. In the merger, the Society and the Forest Research Institute became co-publishers of Acta Forestalia Fennica.

Prior to the merger, 204 volumes had appeared in Acta Forestalia Fennica, and 144 volumes in Communicationes (numbers 1–99, 101–146).

PUBLISHERS — JULKAISIJAT

The Society of Forestry in Finland
Suomen Metsätieteellinen Seura r.y.
Unioninkatu 40 A, 00170 Helsinki
Tel. +358-0-658 707
Telex: 125181 hyfor sf

The Finnish Forest Research Institute
Metsäntutkimuslaitos
Unioninkatu 40 A, 00170 Helsinki
Tel. +358-0-661 401 Fax: +358-0-625 308
Telex: 121286 metla sf

AIM AND SCOPE — TAVOITTEET JA TARKOITUS

Acta Forestalia Fennica publishes dissertations and other monographs. The series accepts papers with a theoretical approach and/or of international interest. The series covers all fields of forest research.

Acta Forestalia Fennicassa julkaistaan väitöskirjoja ja muita monografiatyyppisiä kirjoituksia. Kirjoitusten tulee olla luonteeltaan teoreettisia ja/tai kansainvälisesti merkittäviä. Sarja kattaa metsäntutkimuksen kaikki osa-alueet.

SUBSCRIPTIONS AND EXCHANGE — TILAUKSET

Subscriptions and orders for back issues should be addressed to Academic Bookstore, P.O.Box 128, SF-00101 Helsinki, Finland. Exchange inquiries should be addressed to the Society of Forestry in Finland.

Tilaukset ja tiedustelut pyydetään osoittamaan Suomen Metsätieteelliselle Seuralle.

ACTA FORESTALIA FENNICA 205

AN EXPLORATORY INVESTIGATION OF ENTREPRENEURIAL SPACE: THE CASE OF SMALL SAWMILLS, NORTH KARELIA, FINLAND

Seloste: Tutkimus yrittäjyydestä: piensahat Pohjois-Karjalassa

J. Ashley Selby

Approved on 28.4.1989

The Society of Forestry in Finland — The Finnish Forest Research Institute

Helsinki 1989

SELBY, J.A. 1989. An exploratory investigation of entrepreneurial space: the case of small sawmills, North Karelia, Finland, Seloste: Tutkimus yrittäjyydestä: piensahat Pohjois-Karjalassa. Acta Forestalia Fennica 205. 55 p.

The investigation concerns the nature of the dialectic relationships between small-scale entrepreneurs in peripheral areas and their business environments.

The investigation is weighted towards a theoretical and philosophical examination of the ways in which the behaviours of real world entrepreneurs relate to their business environments. The theoretical framework first examines the assumption of intended or bounded rationality, which recognizes that human beings are in possession of imperfect information and imperfect ability, so that their perceived world is only an approximation of the real world. Following this, an epistemology is sought which enables the individual entrepreneur to be considered as the creator of his own world, and to compare this private world to the shared contexts of a wider set of spatial and social relations. Such an epistemology is found in existential phenomenology, which is subjected to a critical review.

As an empirical case study, the investigation examines the small sawmill entrepreneurs of North Karelia, Finland. The empirical investigation examines aspects of the small-scale entrepreneurs' business attitudes, perceived business environments, and their ability to use business-related information. The existential man-environment dialectic is reveal by relating these attributes to the entrepreneurs' social setting and the level of entrepreneurship as revealed by the sawmill typology.

Tutkimuksessa tarkasteltiin yrittäjien ja heidän yritysympäristönsä välisiä vuorovaikutussuhteita. Tutkimuksen pääpaino on niiden käyttäytymismallien teoreettisessa ja filosofisessa tarkastelussa, joiden mukaan yrittäjät toimivat yritysympäristössään. Teoreettisessa viitekehyksessä tarkasteltiin ensin oletusta rajoittuneesta rationaalisuudesta, jonka mukaan ihmisten tieto ja kyvyt ovat epätäydellisiä ja heidän havaitsemansa maailma on siten vain arvio todellisesta maailmasta. Tämän mukaisesti etsittiin epistemologia, joka mahdollisti sen, että yrittäjää voitiin pitää oman maailmansa hahmottajana, ja että tätä yksityismaailmaa voitiin verrata spatiaalisten ja sosiaalisten suhteiden muodostamaan yhteiseen ympäristöön. Tälläinen epistemologia löydettiin kriittisesti tarkastellen eksistentiaalisesta fenomenologiasta.

Empiirisessä osassa tutkittiin Pohjois-Karjalan piensahayrittäjien asenteita liike-elämän suhteen, heidän hahmottamaansa yritysympäristöä sekä heidän kykyään käyttää hyväkseen tieto tästä yritysympäristöstä. Kun nämä attribuutit liitettiin yrittäjien sosiaalisiin suhteisiin ja sahojen typologisella rakenteella kuvattuun yrittäjyyden asteeseen, voitiin todeta ihmisen ja hänen elinympäristönsä välillä vallitsevan eksistentiaalinen vuorovaikutussuhde.

Keywords: Small-scale entrepreneur, peripheral region, partial space, intended rationality, information, man-environment dialectic, perceived environment, context.
ODC 831.1+68

Author's address: Finnish Forest Research Institute, Unioninkatu 40A, SF-00170 Helsinki, Finland.

ISBN 951-40-1067-1
ISSN 0001-5636

Mäntän kirjapaino Oy

CONTENTS

1. INTRODUCTION AND AIM 5
2. THE CONTEXT OF THE INVESTIGATION 6
21. The small sawmills of North Karelia 6
22. Small sawmills in a regional context 8
221. The region's socio-economic setting 8
222. The forest sector of North Karelia 10
23. The small sawmills' production network 11
231. A note on networks 11
232. The small sawmills'input network 12
233. The small sawmills' output network 13
3. FRAME OF REFERENCE 14
31. Introduction and behavioural comment 14
32. On the man-environment dialectic 15
33. Post-positivistic ontological and epistemological considerations 17
34. A phenomenological epistemology 19
35. Existential epistemology and the concept of partial space 20
4. EMPIRICAL METHODS AND MATERIAL 22
41. Concerning eclectic, post-positivistic methods 22
42. Empirical methods 23
43. The material and its shortcomings 24
5. ENTREPRENEURIAL ATTITUDES AND ACTIVITIES 25
51. An assessment of entrepreneurs' attitudes 25
52. Attitudes and activites 26
521. Attitudes and social context 26
522. Attitudes and enterprise 27
6. EMPIRICAL ASPECTS OF ENTREPRENEURS' PARTIAL SPACE 29
61. An empirical model of entrepreneurs' perceived business environments 29
62. Information, ability and entrepreneurial partial space 31
621. A comment on the behavioural matrix 31
622. Behavioural matrix concepts and the small sawmill entrepreneurs 33
63. Alternative interpretations of the applied behavioural matrix 37
7. SUMMARY AND DISCUSSION 40
71. Summary of the investigation 40
72. An epistemological review of the results 41
73. Conclusions and implications 42
REFERENCES 43
SELOSTE 47
APPENDICES 48

PREFACE

Acknowledgements are gratefully extended to those of my colleagues who have given assistance and encouragement during the course of this investigation, notably those associated with CERUM and the Department of Geography of the University of Umeå, and those in the International Society for the Study of Marginal Regions. Professor Emeritus Lauri Heikinheimo, with his deep concern for humanity, must receive credit as an initial source of inspiration for this investigation, which has been conducted at the Department of Forest Economics of the Finnish Forest Research Institute.

I particularly wish to thank Kauko Hahtola, professor at the Department of Land Use Economics of Helsinki University, and Raija-Riitta Enroth, of the Finnish Forest Research Institute, for their critical and invaluable comments in their capacity as referees. My friend and colleague, Jari Kuuluvainen, also presented frequent, and sometimes strong objections to some of my more extreme phenomenological arguments and so helped to keep my feet on the ground. Sirpa Onttinen, as a student, played a key role during the data collection phase of the investigation in 1982, and as a mature researcher in 1989 must take credit for sharpening the focus of some of my arguments while coping with the Finnish translations.

Failure to incorporate all of the sound recommendations I have received during this investigation does not imply a lack of respect on my part, but to meet the more serious criticisms would require new empirical data, which it is not possible to collect at this juncture. I hope the reader will accept the exploratory nature of this nonconformist investigation, for which I take full responsibility, and judge it accordingly.

Ashley Selby
Helsinki, April 1989

1. INTRODUCTION AND AIM

The difficulties experienced by small-scale enterprises in sparsely populated areas of Finland provided the starting point for a series of investigations into the interactions between entrepreneurs, their enterprises and their socio-economic environments for business. The investigation was initiated as a consequence of a previous investigation (Selby 1980, 1981), which found that small-scale firms, especially in the woodworking sector, were prepared to remain in the peripheral regions, even in the face of rapid socio-economic deterioration.

Two questions arose naturally from that investigation: i) to what extent are small firms behaving rationally by remaining in regions of decline; and ii) can small firms form the centre point for halting the socio-economic decline in peripheral areas?

In attempting to answer these questions, the investigation has concentrated on two areas: i) the behaviours of the small-scale entrepreneurs in the contexts of their business environments; and ii) to what extent can problems in the operation of small firms be identified and diagnosed (Selby 1983, 1984, 1985, 1986, 1987a&b, Vanhanen 1983, 1988).

Small sawmills in the Province of North Karelia were selected as an empirical example of small scale rural entrepreneurs. The empirical material was collected by interviews in 1982[1]. These are small or very small units, figure 1, but it has been demonstrated (Hut-

[1] It is to be noted that the years 1981 and 1982 do not present any problems with respect to the business cycles of the sawmilling industry as a whole. Enroth (1987; 18), for example, demonstrates that these years were quite "normal".

Figure 1. A small sawmill in eastern Finland. Photo: J.A. Selby.

tunen 1981) that their consumption of saw logs is significant at the regional level. The activities of small sawmills at the local level are, however, often important elements in the socio-economic life of rural communities.

Initial attempts to answer the above questions using *a priori* models in the positivistic tradition gave disappointing results. Indeed, trying to relate sawmill activities to the socio-economic development of the region in question was singularly unsuccessful. A central problem appeared to be the appropriate spatial domain for the investigation (see Selby 1981b). However, while the individual level seemed most appropriate, epistemological difficulties immediately arose. Of these, perhaps the most serious one concerned the relationship between the observer and the observed. The positivist attribute of objectivity did not seem appropriate for the task of trying to "model" the life worlds of small-scale businessmen. Consequently, the present paper examines the utility of employing post-positivistic epistemologies for the study of human behaviours. The main questions being: *i) is there a dialectic relationship between small-scale entrepreneurs and their business lifeworlds and ii) does this dialectic have a bearing on business activities.*

The paper is organized as follows. First, in Chapter 2, the reader is presented with a picture of the small sawmills with which the investigation is concerned. Further, the regional setting of the sawmills, their industrial and social context, is outlined. This forms the contextual foundation of the investigation. Chapter 3 then addresses the central issue of the appropriate ontological and epistemological position for the study of human behaviours. Chapter 4 outlines the material and methodology. This is then followed by three separate empirical analyses. First, Chapter 5 examines the business attitudes of the small sawmill entrepreneurs of North Karelia, and relates there attitudes to the dialectic processes of location and firm structure. In Chapter 6, the role of perception in the creation of entrepreneurs' partial space is examined, as well as the dialectic process between entrepreneurs' information concerning their partial space, and their firms' structures and activities. Chapter 7 presents a summary of the empirical investigations, and draws conclusions.

2. THE CONTEXT OF THE INVESTIGATION

21. The small sawmills[1] of North Karelia

Before proceeding further with the description of the sawmills and their context, it is necessary to classify small sawmills according to their production structures. Through this classification, or typology, information is also acquired about the entrepreneurs, as the typologies of the small sawmills are the result of historical processes — the past decisions of the owners.

Several typologies have been employed during the progress of the investigation, the two main ones being the one now to be presented, and a five-class typology based on the relationship or otherwise of the sawmill to farming (Vanhanen 1983, 1988). The present, simpler typology, is based on the sawing and commercial operation of the sawmills irrespective of their relationship to farming or the seasonality of their activities.

i) Contracting sawmills sell their sawmilling as a service, and do not produce sawn wood for sale. Invariably, the contracting sawmills are based on small, tractor-powered, portable, circular saws, which are employed seasonally. They are mostly a supplementary activity to farming. The purchaser of the service often provides the unskilled labour required during the sawing operation.

ii) Contracting-commercial sawmills are, as the name suggests, one step up the structural hierarchy. These sawmills sell both their sawmilling services and sawn wood. The contracting-commercial sawmills are not systematically associated with farming. Some even export sawn wood and process their sawn wood into finished or semi-finished goods.

iii) Commercial sawmills form the third group, and the highest level in the structural hierarchy. These small sawmills are only concerned with commercial sawmilling and do not undertake contract sawing. They

[1] The present investigation concerns the small sawmills in North Karelia with an annual production of 5 000 m³ or less, as of 1982.

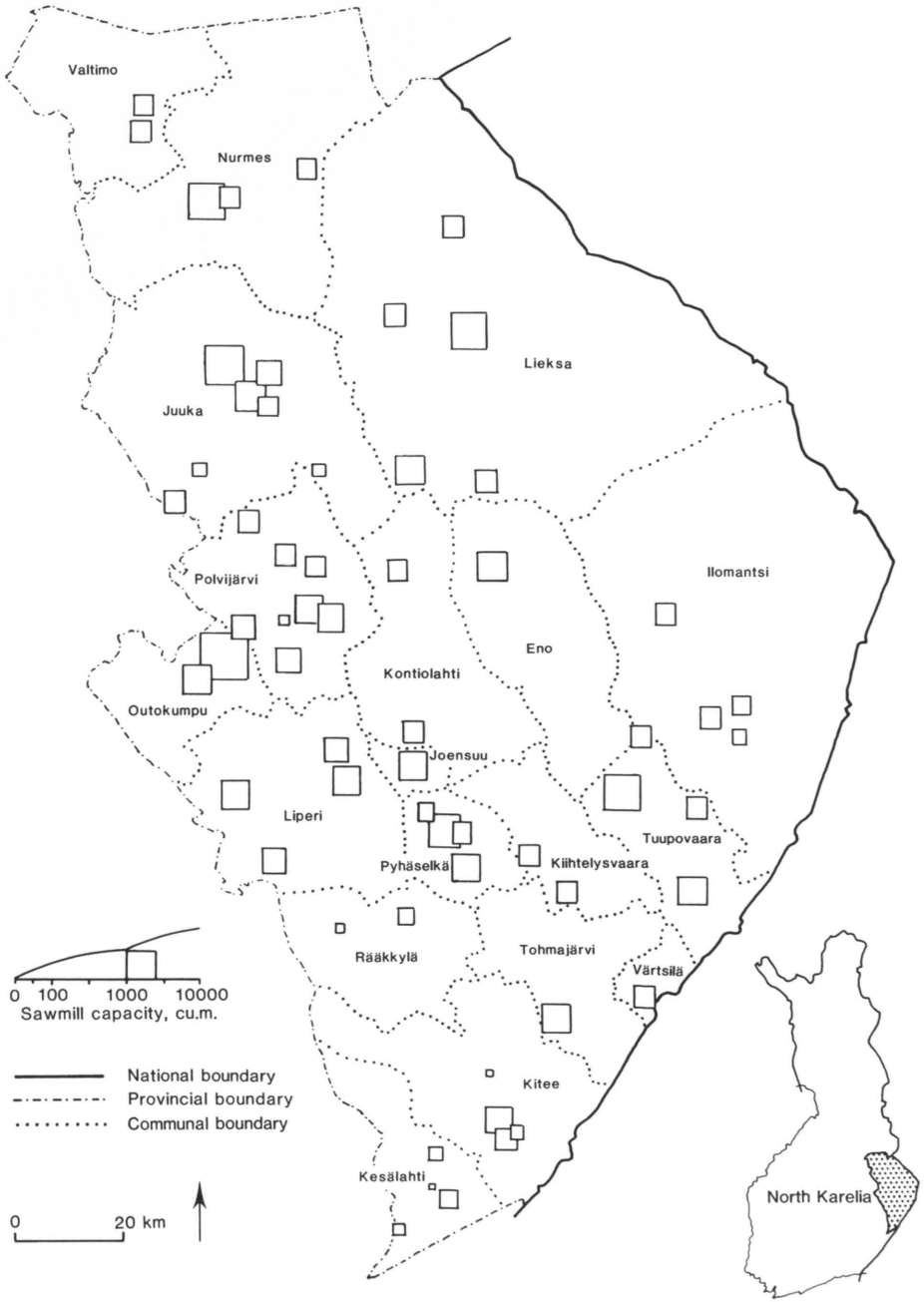

Figure 2. Location and production of the small sawmills in North Karelia, 1982.

Table 1. Production of sawnwood by small sawmills in North Karelia, 1981, by size classes and sawmill type.

Production m³/year	Contract sawmills		Contract-commercial		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Under 500	6	17	6	43	3	21	15	24
500—999	22	63	4	29	1	7	27	43
1000—2999	7	20	4	29	2	14	13	21
3000—4999	0	0	0	0	4	29	4	6
5000 & over	0	0	0	0	4	29	4	6
Total	35	100	14	100	14	100	63	100

also possess the largest capacities of the three types; they are independent of farming, and are full-time firms. As with the previous class, several of the commercial sawmills also export sawn wood and manufacture finished or semi-finished wooden goods.

The structural classification can be seen to represent a hierarchy of entrepreneurship. At the one end of which are the contracting sawmills — part time entrepreneurs whose staple income comes mostly from farming. The part-time, and in some cases ephemeral, nature of these small sawmills does not detract from the fact that they are innovative when seen in a farming context. Several of the full-time commercial sawmills in the investigation started life as part-time, farm-related sawmills. The locations of the sawmills studies are shown in figure 2.

Table 1 outlines the size structure of the 63 small sawmills. Most of the contracting sawmills were not operating on a year-round basis. The majority (79 %) of the small sawmills were located in sparsely populated areas with scattered settlements. Only the commercial sawmills showed any tendency to locate near centres of population. Half of the commercial sawmills were located close to their commune's administrative (urban-like) village. The location pattern of the small sawmills largely reflects the fact that the majority of the contract sawmills were an extention to farming. The majority of both the contract-commercial sawmills (79 %) and the commercial sawmills (92 %) were independent firms.

The labour force requirements of the small sawmills were generally small. Seventy-nine percent of the contract-commercial mills and 33 % of the commercial mills permanently employed five men or less. The sawmills with commercial production systematically had more employees; while in contract sawing, the owner of the sawlogs invariably supplied some of the labour force. Seventeen percent of the commercial mills had 10 to 20 employees, and 33 % had over 20. Such a large labour force often included part-time forest workers employed for the harvesting of sawlogs purchased on the stump.

22. Small sawmills in a regional context

221. The region's socio-economic setting

The province of North Karelia is peripheral with respect to both Finland, and to Scandinavia as a whole. Furthermore, it is a border province; its eastern border is the national boundary between Finland and the Soviet Union, figure 2. Economic and social links eastward are therefore restricted. The province is located in the east of Finland, whereas the main areas of growth and development are concentrated in the southwestern part of the country.

A number of recent studies have examined the levels of social and economic development at the commune, or municipality, level. Two of the most recent being a report on the regional differentiation in welfare (Alueelliset... 1988) and a report on a new classification of rural communes in connection with the Academy of Finland's *Rural vitality* — project (Varmola 1987). Despite their use of different methods, both reports reveal similar states of development, particularly with respect to the communes of North Karelia.

The rural vitality project report follows a long line of communal socio-economic classification studies based on factor analysis (e.g. Palmgren 1964, O. Riihinen 1967, Palomäki 1967). Two separate factor models were calculated, one using a larger number of

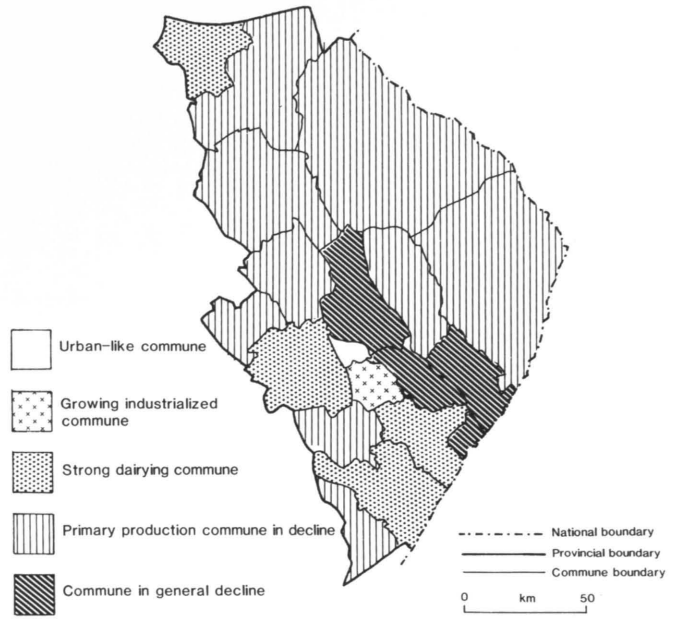

Figure 3. A communal typology of North Karelia according to Varmola's extended analysis (Varmola 1987;11).

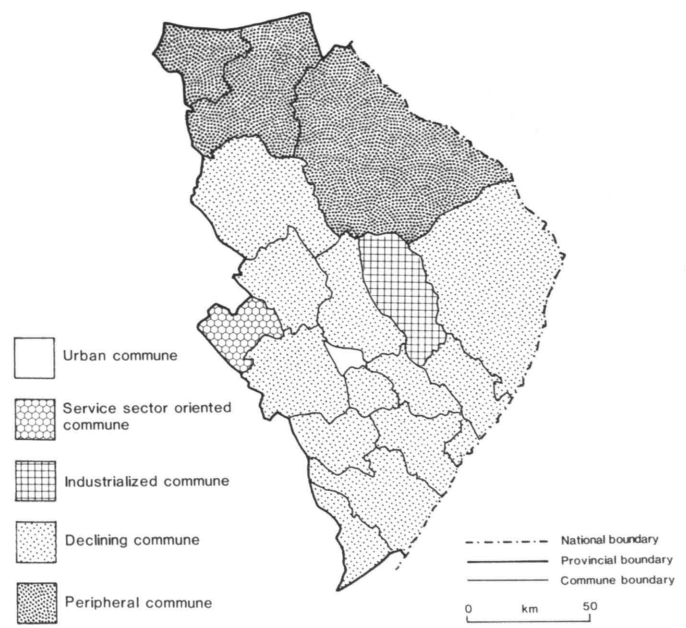

Figure 4. A communal typology of North Karelia according to Varmola's restricted analysis (Varmola 1987;15).

variables than the other. The results complemented each other. These models are reproduced in appendices A&B, but for further details the reader is referred to Varmola (1987).

With regard to the factor model with an extended number of variables, six factors were identified: I-communes in general decline, II-declining communes with predominantly primary production, III-intensive agriculture communes, IV-strong dairying communes, V-growing industrial communes, and VI-urban-like communes (Appendix A). The model's results are closely related to those of previous investigation based on Myrdal's theory of cumulative and circular causation (Myrdal 1957, also O. Riihinen 1967, Hahtola 1973, Järveläinen 1971, and Selby 1980). With respect to North Karelia, no commune was represented by the third, intensive agriculture factor, figure 3.

Figure 3 clearly reveals the poor socio-economic structure of much of North Karelia, with thirteen of the eighteen communes in decline, four strong dairying communes and one growing industrializing commune in addition to the provincial capital, Joensuu.

Figure 4 illustrates Varmola's second model, based on a smaller number of indicator variables. A seven-factor model was achieved (Appendix B), with factors as follows: I-peripheral communes, II-communes dominated by supplementary income-dominated agriculture, III-declining commune, IV-commune dominated by agriculture, V-industrial commune, VI-commune with high level of services and, VII-urban communes. The results for North Karelia follows closely those of the previous model. Apart from Joensuu (naturally factor VII), only the mining town of Outokumpu (factor VI-high service level) and the commune of Eno with its large-scale forest industries (factor V-industrial commune) form islands of relative development in a province which is dominated by declining communes (factor III) or peripheral communes (factor I). The results of this latter model are very close to the indicators calculated in Alueelliset... (1988).

Demographically, the picture follows that expected from the above analyses. After a steep rise in the population of the province consequent upon the resettling of Karelian refugees after the Second World War, the

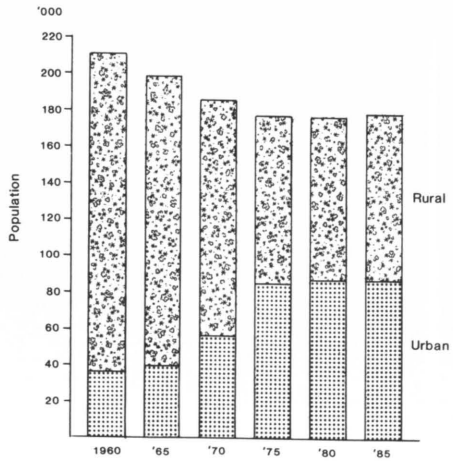

Figure 5. Population trends in North Karelia, 1960—1985.

population has declined steadily until a stabilization around 177 000 inhabitants since 1975. However, the effect of migration has altered the structure of the distribution of the population remaining in the province, figure 5. While the rural depopulation of the 1960s and 70s included a component which left the region altogether, there was also a clear move towards the urban centres within the province. The population structure of the region has apparently stabilized since 1975. What the figure does not show, however, is a continuing migration from remote villages to the urban-like centres of the communes.

222. The forest sector of North Karelia

In a recent investigation, Eskelinen & Vatanen (1988) examine the forest sector of North Karelia. They find that the economic significance of forestry and the forest industries in the province is twice that of their significance in the country as a whole, table 2.

Consequently, the observed decline in employment in the forest sector over the past decade has strongly influenced the structural development problems of the region. As table 3 demonstrates, the numbers employed in the forest sector professions have fallen in each area during the 1980s.

Eskelinen & Vatanen (1988; 71—73) consider the small-scale woodworking enterprises of which small sawmills form a part. They observe that the number of these small enterprises, and their labour force, has grown during the 1980s, i.e. largely in the period following the interviews conducted for the present investigation, table 4.

In particular, the smallest enterprises (1—5 employees) have increased most, from 35 firms (87 employees) in 1980 to 89 firms (204 employees) in 1986. One reason for this, explain Eskelinen & Vatanen (1988; 72) was that a number of employees sacked from a Joensuu window-making firm formed new small-scale businesses in the absence of alternative employment possibilities. Despite this, however, c. 80 % of those employed in the forest industries of North Karelia are in plants which, by Finnish standards, are large (over 50 employees), see Eskelinen & Vatanen (1988; 108).

Pöyry OY (1981) studied 35 of the active sawmills in North Karelia. Of these, three were very large (capacity over 100 000 cubic metres per year), three were large (50 000 to 100 000 cubic metres per year) and eight were small to medium (5 000 to 50 000 cubic metres per year). The remaining c. 20 sawmills were producing less than 5 000 cubic metres per year. These 35 sawmills produced, in the year 1979/80, 855 000 cubic metres of sawn wood, of which 71 % was produced by the very large mills. Only 9 % of the sawn wood production came from the mills producing less than 50 000 cubic metres per year.

Table 2. The forest sector's contribution to GNP in East Finland and Finland as a whole (Eskelinen & Vatanen, 1988; 27).

	1960		1984	
	East %	Whole %	East %	Whole %
Forest sector	30.7	17.3	20.4	9.6
Of which:				
forestry	16.6	8.7	7.7	3.7
forest industries	14.1	8.6	12.6	5.9

23. The small sawmill's production network

231. A note on networks[1]

While this section concerns material flow networks (commercial linkages), it must be recognized that such networks possess a strong social content in a local community context. As such, they are part of a hierarchy of information and material flow networks (Fredriksson and Lindmark 1979, Vanhanen 1988). Because economic activities occur in space and time, an enterprise is a spatial organizer which interacts with its environment (Hayter and Watts 1983). The economic units of an area form a functional system and consequently possess reciprocal (dialectic) relations with each other. The units within this system constitute the production system of the area.

The production system may be complex, possessing a multitude of hierarchical levels, or it may be simple. Some units have a more dominating position than others. Also, the spatial interaction of each unit is different —

[1] Acknowledgements are extended to Heidi Vanhanen for her contribution to this section.

Table 3. Professional employment in the forest sector of North Karelia, 1980 and 1985 (Eskelinen & Vatanen 1988; 59)

Forestry		Forest industries		Forest sector		Change	Share of total employment %
1980	1985	1980	1985	1980	1985		
4329	4256	4574	3811	8903	8067	−836	10.8

Table 4. Number of establishments and employees in North Karelia's sawmill, board and wood fabrication industries, 1980 and 1986 (Eskelinen & Vatanen 1988; 66).

	Total		over 49		21—49		11—20		6—10		1—5	
	Est.	Emp.	Est.	Emp.	Est.	Emp.	Est.	Emp.	Est.	Emp.	Est.	Emp.
1980	70	2908	9	2339	8	259	10	158	8	65	35	87
1986	166	2222	7	1647	6	228	5	74	9	69	89	204

one may be part of a global hierarchy, another may act only at the local level, with few contacts outside the home area. Exchanges and interaction of the units of the production system not only consist of transactions of material goods, but also involves the exchange of money, of information, as well as experience, tradition and culture (Vanhanen 1988).

Flows of information, and also transactions, require different channels, but in small firms they are invariably attached to personal face-to-face communications. The more specialized or non-routine the information becomes, the greater the advantage of direct personal contacts (e.g. Ramström 1967, Thorngren 1970). The point here is no longer the quantity or quality of the information flows themselves, but in their combination, i.e. way and means of combining the fragmented information (e.g. Andersson et al. 1984). In this respect, direct personal contacts are superior. Communication takes place in a common setting, the risk of misunderstandings is reduced, and those which do arise can be corrected immediately (Törnqvist 1970; 28).

232. The small sawmills' input network[1]

This empirical review begins by considering the small sawmills' sources of sawlogs. It is to be noted, however, that only the commercial and contract-commercial sawmills are concerned with sawlog supply. As observed in section 21, the contract sawmills are not, by the nature of their business, concerned with acquiring sawlogs.

It has be shown elsewhere that the entrepreneurs almost unanimously perceived a good or very good sawlog supply situation (Selby 1984, 1986). A reason for their optimistic perceptions is demonstrated to be the heterogeneous sawlog supply situation. The multiplicity of the sources is important when it is remembered that the small sawmill entrepreneurs can service only very limited short-term loans for the purchase of sawlogs. It is therefore important that they are able to rely on a diverse supply situation in order that sawlogs can be purchased at short notice. The quality of the sawlogs is also important. In particular, meeting the requirements of export or other specialized orders frequently requires small sawmills to meet specific technical standards which demand the careful acquisition of suitable sawlogs. In a restricted supply situation, the small sawmills might be compelled to purchase whatever logs are available irrespective of quality. The multiplicity of supply sources reduces such a risk. The small commercial sawmills are more willing to acquire sawlogs from greater distances than the contract-commercial sawmills. The former also places greater reliance on purchases of wood from forest industry companies.

The two principal methods of purchasing sawlogs are delivery sales and stumpage sales. This result is consistent with the fact that farms are the main sellers of sawlogs. These purchasing methods are significant from the point of view of the local economy. In the case of purchases on the stump, the small sawmills must arrange for the harvesting of the logs. It is therefore not uncommon for the labour force of even the smaller mills to employ at least one professional forest worker. In the case of delivery sales, the seller must arrange for the harvesting and transport to a collection point with access to a public road. The delivery sale method therefore creates employment for the forest owner, or he may contract this work to professional forest workers, for example, via the forest owners' association. In either case the labour will most likely be local, and the benefits of the financial transactions involved will also remain in the locality. This is part of the network-process to which Vanhanen (1988) has given attention.

Forest industry companies, as agents in sawlog purchasing transactions and/or as direct sources, were particularly important for the commercial sawmills (which are characterized by larger production capacities and sawlog purchases). It is tempting to argue that the larger small sawmills purchase sawlogs from industrial companies not only because they always have suitable assortments in stock, but also because they may ease financial transactions. This aspect of the sawlogs purchasing behaviour of small sawmills is not examined at this juncture, but it requires further examination, because if the argument is substantiated, the role of local credit institutions can be seen to be bottlenecks in the local development process, and steps could then be taken to try to improve the local flow of short-term working capital for small industries.

Empirical analysis has shown that forest-farms are not significant sources of sawlogs for the small sawmills in North Karelia, only five small sawmills purchased sawlogs from forest farms in 1981. Possible reasons for this are many, but there is no paucity of forest-farms in North Karelia, so it would seem that in many instances, forest-farms have opted out of the market. Are the backward linkages from the small sawmills to the forest-farms absent because of ownership peculiarities? What is the role of absentee ownership with respect to commercial forestry? Loikkanen et al. (1985, 1986) and Järveläinen (1988), for example, examine the question of farmers and non-farmers in the supply of sawlogs, but their work is in the framework of large-scale forest industries, and so these questions remain open.

233. The small sawmills' output networks

The empirical review of the outlets for the products of small sawmills in North Karelia demonstrates that a diversity of markets exist for the two products considered here, namely sawn wood and sawmilling residues. Nevertheless, passive attitudes to sales activities were found in the case of 38 % of the sawmills studied, with no difference in this respect concerning the two types of sawmills. The sales activity range was also found to be limited. Nearly half of the sawmills (46 %) limited their sales activity to their neighbouring communes, while the "average" distance to markets for 79 % of the sawmills was less than 99 km. Fairly short-range activities are therefore under consideration.

The short range of these activities places the small sawmills in a good position to sense local demand. It could even be argued that the intuitive knowledge of local conditions is one reason why the entrepreneurs seemed so passive when sales activities are considered. Certainly, this view has been expressed by more than one sawmill expert (in personal conversation). It is in such cases that the value of personal information networks become important (Vanhanen 1988). Acquired professional knowledge enables the small sawmill to flexibly adapt to the market conditions.

The small sawmills are, in fact, quite able to fill local demands; sales direct to the public are practiced by most small sawmills to a greater or lesser extent. Those commercial small sawmills wishing for more specialized outlets seem to have been successful in exporting sawn wood — an activity practiced even by some of the contract-commercial sawmills.

Wood residues from the sawmilling process also find diverse outlets. However, it was typical that sawmills supplied large proportions of their residues to a single outlet. The use of a single outlet is sensible, of course, given the relatively small quantities of residues in question. The single outlet may also be the only one within economic range.

Only 38 % of the sawmills did not use sawn wood as the basis of some kind of further manufacturing. This is a significant result from the standpoint of local development. It is clear that the more value added that can be produced at the sawmill level, the better will be the sawmills' contributions to their local economies. Thus, from the local development point of view, further manufacturing is to be encouraged.

[1] The contracting sawmills are here omitted because they have a much simpler production structure.The material used in this analysis concerns only those sawmills of North Karelia which were engaged in commercial activities in 1982: 14 commercial sawmills and 14 contract-commercial sawmills.

3. FRAME OF REFERENCE[1]

31. Introduction and behavioural comment

In the previous chapter, an outline was given of the structure and context of the small sawmills of North Karelia. It was shown that the nature of the operations of these small sawmills was limited, and mainly aimed at local markets. Given that the majority of the small sawmills were part-time enterprises, supplementing agricultural incomes, it is not possible to consider them in terms of normative location theory or theory of the firm.

Similarly, a model constructed within a positivist framework placing small sawmill activity in a socio-economic development context yielded very discouraging results. In that analysis, a commune-level socio-economic development model was constructed on the basis of Myrdal's theory of circular and cumulative causation with which the present investigator had had good experience (Myrdal 1957, see also Selby 1980). Hypotheses concerning relationships between small sawmill activities and the degree of development (quantitatively as well as qualitatively) were not supported. It seemed as if the model being imposed by theory had no relationship to the world to which the small sawmill entrepreneurs were reacting. It was therefore decided to re-examine the problem setting by seeking an alternative epistemology. An epistemology was required which would permit the examination of the dialectic relationship between the sawmillers and their environments from the standpoint of the entrepreneurs' own perceived world rather than that of an *a priori* model of the world imposed upon them.

Such a step first required that the normative assumptions of human behaviour be modified. If, for example, it is assumed that the entrepreneur is able to exercise his free will over the endogenous processes in his firm, then he is able to make decisions regarding the location and operation of his firm. At this point, it is common in economic theory, and theory of the firm, to consider the entrepreneur to be entirely rational and in possession of single and restricted goals, such as profit maximization and cost minimization. However, the empirical review of small sawmill activities has clearly demonstrated the inappropriateness of such a standpoint. Indeed, even in the normative schools of social science such views are increasingly placed under severe critique, not least the concepts of *Homo economicus,* and perfect rationality. For example, Katona (1951), Simon (1957a&b, 1959), Wolpert (1964), Pred (1967) and Earl (1983) provide theoretical and empirical evidence to bear on the critique. Accordingly, one of the central motives ascribed to economic man, profit maximization, is criticized as being a subjective concept, logically out of step with positivist thinking, and for being incompatible with empirical findings.

Following such critique, there has been a growing application in behavioural theory of concepts which, according to Simon (1957a; 24), aim to replace the global rationality of economic man "with a kind of rational behaviour that is compatible with the access to information and the computational capacities that are actually processed by organisms, including man, in the kinds of environments in which such organisms exist".

One such behavioural concept offered to replace perfect rationality is the principle of intended or bounded rationality. According to which, man is intendedly rational with respect to his own perception of reality, but this perceived reality only approximately relates to the real world (see Brinkmann 1935, Simon 1957b; 241—260, Earl 1983; 64—72). The principle aims to take into account the influence of entrepreneurs' personal qualities upon the location of production. However, whereas Brinkmann accepted the profit maximizing assumption, Simon (1959; 262) clearly rejects it by observing that the entrepreneur

[1] The present investigation is conducted within a geographical epistemology because i) the author is a geographer, and b) the suitability of a geographical epistemology to the domain of the problem in hand.

"may not care to maximize, but may simply want to earn a return that he regards as satisfactory".

This has been referred to by Simon, and others, as the satisficing principle (Simon 1959, Earl 1983; 78—81). Thus, Simon (1957b; 246) is able to suggest that

"in the absence of evidence that the classical concepts do describe the decision-making process it seems reasonable to examine the possibility that the actual process is quite different from the one the rules describe".

What is invariably missing from "the rules" are psychological factors. These have been outlined thoroughly by Katona (1951) in his pioneering work *Psychological Analysis of Economic Behavior.* He notes (1951; 204) that there are usually diverse psychological forces driving individuals towards different aims. Some may conflict and some may reinforce each other:

"If it were true that businessmen are single-minded, governed by nothing but the profit motive, then we would have to assume that human beings change when they enter their business offices." (1951; 204).

Over and above basic biological survival, Katona (1951; 204—206) notes several factors which affect the motivation of businessmen. One is relief from anxiety which "may lead to a striving for security". Katona observes that one way to reduce anxiety is to make money, but notes that other factors are involved, including striving for continuous, regular income rather than short-term maximum profits. He recognizes (1951; 206—7) that decisions resulting from the interplay of diverse motivational forces must be assumed to vary greatly under different circumstances. Different conditions will cause different motives to play a leading role in the decision-making process (the man-environment dialectic in a decision making context). Two examples are given: i) the case of a new firm operating under adverse conditions, where the time horizon is short and the firm must concentrate on building up liquidity and solvency — survival in the main aim; and ii) a well established firm operating under prosperous conditions, where the time horizon will be extended, long-term planning will be possible. Factors affecting expectations now play a major role in decision making. Also, the scope of the motivating forces will be extended so that non-monetary motives may come into play, e.g. increasing the prestige of the firm and/or owner by increasing the welfare of the workers and the community in which the firm is located.

Thus, at different stages of development, the entrepreneur has different priorities and certainly perceives his business environment in different terms: initially hostile, perhaps, leading to increased awareness of environmental potential, and finally being able to place goals in directions other than mere survival.

Similarly, the environment for business and the entrepreneur and his firm are in a dialectic relationship which is itself dynamic, and is in part dependent upon the perception of the individual. In the next section the man-environment dialectic is examined a more detail.

32. On the man-environment dialectic

There are several ways in which the individual and his (social) environment interact. Society may be considered to influence directly on the individual, creating an exogenous constraint upon human agency. This process is often termed *reification* (see Gregory 1981 following Durkheim). The reverse can also be argued, i.e. that society is constituted by the intentional action of individuals. This is the *voluntarism* of Weber (see Gregory 1981). In recent years the voluntarist critique of reification has led to what Gregory (1981, following Berger & Luckmann 1966, and Ley & Samuels 1978), calls *dialectic reproduction.* It is a situation in which

"reality is a social construction... that acts back upon is subjects, sometimes in ways that remain unseen and taken for granted" (Ley & Samuels 1978; 12).

Ley (1978; 52) argues that there is a synthesis which can account for

"the dialectic relation between the structural realities and the human enterprise of constructing reality",

while Duncan (1978, also citing Berger & Luckmann 1966) argues substantively that

"man produces a world both of abstraction — that is, ideas values, norms of conduct — and of real concrete objects, which, although they are his own product, he nevertheless permits to dominate him as objective, unchanging facticities".

Concerning the "taken for granted world" referred to above, Ley (1977) places social geography in a phenomenological perspective; a perspective dedicated to the understanding of the interaction of the individual and his lifeworld. Ley (1977; 504—505 following the phenomenologists Husserl, Schütz and Merleau-Ponty) presents the dialectic in the form of the question, what does the social environment mean for the observed actor within his world and what does he mean when acting within it? He continues,

"Actions are intentional and purposive, they have meaning, but access to this meaning requires knowledge of the motives and perceptions of the actor, his definition of the situation" (Ley 1977; 505).

Ley (ibid.) observes that meanings are rarely private, but are shared and reinforced in peer group action. Phenomenological man (to whom we shall return shortly), as opposed to economic man, is argued to be "unavowedly social":

"His lifeworld is an intersubjective one of share meanings, of *fellow men* with whom he engages in face-to-face *we-relationships.* These relationships are entered into by choice and show... the familiar pattern of selective interaction between like-minded individuals..." (Ley, ibid.).

Such a framework is clearly pertinent to the discussion on the significance of networks to the activities of entrepreneurs in the periphery, see e.g. Vanhanen 1988 (outlined in section 231, above).

While the individual clearly plays a creative role in forming the society in which he lives, the dialectic process creates a feedback to which the individual is not immune. Thus, again citing Ley (1977; 505),

"Each individual has a history and a geography which imposes constrains within his life-world; so begins the dialectic between creativity and determinism, charisma and institution, a dialectic which for the geographer becomes that between man and place... A second, and often more binding, set of constraints upon action in everyday life are forces internal to the life-world of the individual and group. In the process of group consolidation, its collective view of the world become more telling on the individual, as he becomes successively more 'included' in it. So, too, his action becomes identified with group norms... The phenomenological model of man is one of a life-world with a group- centred reality."

While not knowingly forwarding a phenomenological viewpoint, economic and social theories have often addressed the same dialectic. For example, Myrdal (1957; 30—31) has argued that social factors are important in the cumulative process towards regional inequality. All relevant adverse changes that originate outside a region are effects which, by way of migration, capital movements, etc., *affect the whole spectrum of social relations.*

Indeed, the role of social relations within a region are of considerable importance in forming social attitudes towards economic activity and socio-economic change and innovation. These relations can be studied further with reference to Tönnies' *Gemeinschaft* and *Gesellschaft* concepts (Tönnies 1957) or Rogers' *Traditional-Modern* concepts (Rogers 1968).

Summarizing, the *Gesellschaft* or *Modern* society represents industrial society, in which values are based on shared interests and mutually recognized targets. Society is characterized by an advanced division of labour with use of advanced technology; the importance of formal (institutional) organizations, with planning and economic rationalization leading to the selection of optimum means for achieving goals; reduced pressure to conform to social norms, a well developed communications media and strong interaction with other social systems; and empathy. In recent years, however, *Gesellschaft* or *Modern* societies have tended to develop towards a form of *Corporate state* which further stresses institutional power and efficiency at the expense of empathy, e.g. Harvey (1974) and Butt (1979).

On the other hand, *Gemeinschaft* or *Traditional* societies exhibit (following Tönnies) a low level of division of labour, strong family ties and the importance of personal interaction, a strong pressure to conform to social norms, and a poorly developed communications media. Further, (following Rogers) these communities will tend to possess underdeveloped technology with strong ties to the primary sector, a low level of education, a low degree of interaction with other systems and a lack of economic rationalization. Primary group interests have a value in themselves and are not related to certain goals. Traditional communities, perhaps for this reason, lack empathy.

Considering the affect of the social environment on small-scale entrepreneurs, it might be expected that in traditional societies, i.e. Tönnies' *Gemeinschaft,* the social norms, the restricted division of labour, etc., for dialectic reasons do not create the ideal environment for cultivating entrepreneurship. Pred (1969; 51) supports Hagen (1962; 8—9) in pointing out that the imprint of traditional societies on personality types may well discourage innovating behaviour in the entrepreneurial population, thereby preventing any increase in the flow of entrepreneurial information.

Pred (1967; 90)) also points out that psychological ties to place[1], desire for social approval and other "personal" and non-economic reasons are frequently consequential decision determinants. Localities, according to Pred, become "change resistant". Thus, the

"authoritarian personality of a traditional society which is not undergoing a transition to economic growth is uncreative, or unwilling to undertake any pioneering innovational action (locational or otherwise) that will serve as a model to others" (Pred 1967; 51).

Thus, by implication, cultural background plays a significant role in determining the life philosophies and value systems of individuals. These create psychological needs in the individual. which he attempts to satisfy. The individual's awareness of these needs is prompted by the cultural environment.

33. Post-positivist ontological and epistemological considerations

Given the above discussion concerning the basic behavioural assumptions attributed to small sawmill entrepreneurs and their reaction with their environment, an epistemology is required which is capable of considering the actions of the small sawmill entrepreneurs in an appropriate manner. A dialectic epistemology is required which considers the context of the entrepreneur, and can place him in his life world. "Humanistic" approaches were considered to be attractive because of there apparent flexibility and "eclecticism" with respect to theory and method (Selby 1984). In the present paper the "humanistic" approach is given a more rigorous critique, leading to the adoption of an approach close to phenomenology.

First, a note is made on the ontological starting point of the investigation. Such a note is necessary in an investigation in which subjective as well as objective measures are to be employed. Bhaskar (1975; 21), for example, is very specific about the types of knowledge. One type of knowledge, he argues, is *'of'* things which are not produced by men, e.g. the specific gravity of a given element, or the mechanism of light propagation. The other type of knowledge is social. Bhaskar observes that

"men in their social activity produce knowledge which is a social product much like any other, which is no more independent of its production and the men who produce it than motor cars, armchairs or books...and which is no less subject to change than any other commodity."

The present investigation is clearly located in the latter, social knowledge ontology.

In addressing the question of objectivism versus subjectivism, geographers have followed other social sciences in fundamentally reviewing the ontological foundations of their discipline (e.g. Harvey 1969; Pickles 1985). The 1950s and 1960s geography, along with other sciences which dealt with man's behaviour, developed as an abstract theoretical science towards what has been termed "social physics" (e.g. Zelinsky 1975, Ley 1977). However, in his pioneering paper, *Terra incognitae: the place of imagination in geography,* Wright (1947) indicated an alternative direction by supporting the notion that knowledge is social. He thus gave the relationship between objective a subjective reality a major geographical expression. Central to Wright's argument is the concept of the geography of knowledge, or *geosophy.* This is defined as a systematic geography

[1] Ties-to-place are not irrelevant to the discussion, but to avoid extending an already lengthy chapter, the issue will not be discussed here. The interested reader is referred to e.g. Ley (1977), Tuan (1974, 1975 & 1977) and Relph (1976 & 1981).

"which deals potentially with knowledge and belief of all kinds, whether religious, scientific, philosophical, aesthetic, practical, or whatever else." (Wright 1947; 11)

Geosophy is therefore a basis for considering the relationships between objective and subjective knowledge, primarily because it recognizes that scientific knowledge is subject to the same objective-subjective relations as all other forms of knowledge, and that scientific knowledge is not sacrosanct, i.e. it is not purely objective. Thus, objectivity and subjectivity, not being in antithesis, form a continuum of knowledge. First, there is strictly *impersonal objectivity,* i.e. the objectivity of the natural sciences. This is followed by realistic, or *objective subjectivity* — where, for example, a person's imagination constructs an accurate conception of a known phenomenon. Finally, there is *illusory subjectivity,* where wishful thinking produces a false conception of a phenomenon. The present investigation comes close to the geosophical position of objective subjectivity, as will become clear in due course.

Ley, (1977; 502), also addressing the ontological and epistemological dilemma of applying the methods of the natural sciences to man's behaviour, identifies two methodological positions,

"...the one concerned with holism, as man-environment dialectic, and the incorporation of social and cognitive variables, and the other committed to material phenomena, explicit reductionism and implicit determinism, and analysis which separates fact from value."

This observation is particularly apt with respect to location theory — normative or stochastic. As Ley (1977; 501) points out, the basis of location theory is positivism, its model being the model of the natural sciences with precisely stated concepts, high order measurements and the formulation of theory. Ley's criticism of the positivist approach is plainly stated,

"The deterministic... relations implicit in the positivistic perspective suggest a precision that is foreign to the world of human action which is more properly characterized by relations which are fuzzy, ambiguous and evolving, where 'rational' behaviour is clouded by a myriad of subjective influences."

Cognitive behaviouralism also possesses a spatial ontology (see Cox & Golledge 1981; XXVI, Pickles 1985; 33 and Harvey 1969a). It has also been historically closely associated with spatial distribution and location theory. However, cognitivism and positivism have proved to be uncomfortable bed-fellows. The mechanical models of positivism have been demonstrated to be unsatisfactory because of the need to introduce normative or stochastic processes into decision making: the parameters of the spatial analytic have been extended to incorporate psychological variables conceived in a "mechanistic" manner (Pickles 1985; 33). While it is assumed that the natural, or common external environment will continue to exist independent of the human actor, each individual must be able to construct a system of relations among objects in the "external reality". The resultant spatio-temporal network, in which that "internal reflections of the external flux must also have some structure and commonalities" (Golledge, 1979; 109—110).

The cognitive sciences have addressed just this problem, e.g. Golledge 1973, Downs & Stea 1973, Cox & Golledge 1981. However, criticism of the cognitive approach is aimed at its one-sided concentration on explaining behaviourally overt activity in the physical world (Pickles ibid; 34—5, Golledge 1973; 64). It is therefore argued that concern should be given to the mode of being of the phenomenon itself, but an epistemology dilemma then follows: how can an external, objectively existing "reality" be known by "consciousness", i.e. by a thinking being? (Pickles 35, Golledge 1979; 114). Other questions then follow, including "what is reality?", and "what is the philosophical distinction between real and perceived environments? (Cox & Golledge 1981; xx). It would be extending the bounds of this discussion too far to include a discussion of these questions at this juncture. The interested reader is referred to Kockelmans (1969), Pickles (1985), Barfield (1957) and Heidegger (1927).

Nevertheless, a way has to be conceived by which the world of man can be disclosed: a world which is not merely a system of physical entities in geometrical space. One method of disclosing such a world is offered by phenomenology, which will now be briefly examined.

34. A phenomenological epistemology

Phenomenology has become one of the post-positive approaches in several social sciences including human geography. It emphasizes not the abstract conceptualizations and objective pretensions of positivism, but rather the revelation of actual lived experience (Smith, 1979; 365, Buttimer 1976; 291, Relph 1976; preface).

First, it must be noted that the epistemological content of phenomenology and humanism have become confused; a confusion not avoided by the present writer (Selby 1984). Relph (1981) attaches much importance to avoiding such confusion and subjects humanism to a severe critique. Indeed, many geographical phenomenologists have addressed this confusion in one way or another (see Relph 1970, Tuan (1971a & 1976, Mercer & Powell 1972), Entrikin 1976, Ley 1981, Buttimer 1976, Ley & Samuels 1978, Harvey 1974). As Relph (1977; 179) argues, however sympathetic to humanistic principles phenomenology may be, it does not necessarily lead to humanism, see also Smith (1979; 366—338).

How, then, has phenomenology been applied to geography, i.e. what is phenomenological geography? Relph (1970; 199) claims it to be "the contemplation of direct experience". It should therefore clarify the foundation of the discipline by addressing elements of the everyday world. Phenomenology is "a procedure for describing the everyday world of man's immediate experience including his actions, memories, fantasies, and perceptions" (Relph 1970; 193). It is not a scientific method directed at some "objective" or "rational" world. Other interpretations differ in detail but not substance, e.g. Buttimer 1974, Tuan 1975, Ley 1979, Mercer & Powell (1972). Buttimer (1976; 280) presents a view of geographical phenomenology which is *close to that adopted by the present investigation.* She writes,

"The everyday world... presents itself as a dynamic unity, and it is experienced in a holistic way until thought begins to reflect on it. It is in the spirit of the phenomenological purpose... rather than in practice of phenomenological procedures, that one finds direction. There should be no inevitable conflict between ways of knowing. Phenomenology invites us to explore some of the unifying conditions and forces in the human exploration of the world."

Central to the phenomenological approach is the concept of *intentionality.* A literal interpretation of intentionality is offered by Relph (1970; 196—7), according to which "the world can be understood only in terms of man's attitudes and intentions towards it." Similarly, Gregory (1981b; 252) voluntarizes the *intentional structure* of consciousness "through which objects are made to mean something to us". Relph and Buttimer's geographical phenomenology are in agreement that "the objects of phenomenological inquiry are the intentions and attitudes of agents or actors in and towards their world" (Pickles 1985; 60).

Ley (1979; 225) also accepts this voluntaristic conception of intentionality. Thus, the lifeworld can be seen, following Schütz and Merleau-Ponty, as a group-centered world of events, relations and places infused with meaning and often with ambiguity, which — as the realm of mundane experience — can become the focus of study. Ley (1979; 222—3) makes the key contention that the lifeworld can be the basis for such studies:

"...at the root of an empirical science, there are necessary taken for granted assumptions, the same subjective naivety as occurs within our own private life-worlds... A phenomenological examination of social science thus begins with an analysis of presuppositions, with the exposure of assumptions which are unselfconsciously taken-for-granted".

A number of arguments have been levelled against the phenomenological approach to human geography; arguments which, for example, have been summarized by Johnston (1978) and Pickles (1985). Of the specific objectors, Guelke has been particularly severe. He has argued (1978; 54) that the phenomenological approach fails to provide tools for the understanding or explanation of human behaviours in either an intersubjective or objective way. He also objects (1976; 169) to geographers asking what people think and why they thought it, as such questions are beyond the realm of (his) geography.

Severe critique has also originated within the school of those committed to phenomenology in geography, or geographical phenomenology. In particular, it is the way in which geographers have adopted and interpreted phenomenology which has aroused criticism. Pickles (1985; 5) can therefore claim that in this process of adoption phe-

nomenology has been "radically *adapted*". Thus, it might be said that early attempts to adopt phenomenology to geography received insufficient critique because of a desire to support such an approach.

Smith (1979), and also Pickles (1985), both argue for the adoption of Schützian constitutive phenomenology. Smith (1979; 367), in particular, believes that a return to Schützian phenomenology would introduce analyses which are "a useful antidote to the confusion of humanistic geography with phenomenology". Smith (1979; 366, following Schütz 1970; 10—12) returns to the argument that natural and social sciences differ by means of the mental constructs employed. The natural sciences abstract from the lifeworld *(lebenswelt)* thereby omitting people, culture and human activities. Social science, on the other hand, abstracts from commonsense constructs by means of which people experience their lifeworlds. Objective social science categories are therefore secondary constructs; subjective experience of the lifeworld is the primary construct.

Schütz hoped that these primary and secondary constructs would be sufficiently abstract from everyday experience to be "scientific", while remain in that very experience. In other words, the lifeworld comprises of *intersubjective* meaning structures (Schütz 1970; 15, quoted in Smith 1979; 366). Smith continues

> "We share the everyday world with others and share or understand many of their interpretations and experiences of it. Social scientific explanations therefore employ constructs with intersubjective meanings; out of this intersubjectivity, objectivity becomes possible. Moreover, it is an objectivity capable of conveying the emotion, feeling and meaning of everyday life."

35. Existential epistemology and the concept of partial space

In the Anglo-Saxon world and France, phenomenology was introduced as the logical forerunner of existentialism (Pickles 1985; 50). Existential phenomenology has been regarded as the culmination of Husserlian and Heideggerian phenomenology (Madison 1977), which Pickles (1985; 50, citing Rodnitsky 1973; 222) argues is still the case in American usage. Phenomenology and existentialism are considered, not entirely correctly, to be synonymous. Thus Buttimer (1979) can write

> "Existentialism offers... a perspective on the quality and meaning of human life in the discrete everyday world. Its epistemological foundations stem largely from the phenomenological critique of objectivism and scientific theory, so it speaks of lived experience in the language of meaning, and tries to make values explicit".

Gibson (1974; 47) is critical of this position, claiming that while most contemporary existentialists are also phenomenologists, the reverse is not true. Existentialism is a "movement of related philosophies" whereas phenomenology is a systematic philosophy and method of analysis.

Like phenomenology, existentialism is not a unified philosophy. It is considered to be the philosophy of man's alienation in his world, and his efforts to combat that alienation. Existentialism is therefore often characterized by the tenet that "man makes himself". As in phenomenology, man is considered to create his own reality, i.e. reality is created by the free acts of human agents. Thus, quoting Grene (1959, cited by Johnston 1983; 65)

> "The self that existentialism seeks is each person's individual self, which he must forge for himself out of such senseless circumstances, such meaningless limitations, as are given him. This self-creation — the making of one's essence from mere existence — is demanded of each of us because there is no *single* essence of humanity."

Existentialism postulates atomistic individualism, on which basis attitudes are formed towards the physical world and towards others in it. Existentialism lacks a formal methodology, and fiction has been used by existentialists to demonstrate how man creates his world, e.g. Sartre, Nietzsche and Dostoevsky.

In human geography, the existential case has been argued by, for example, Samuels (1978, 1981). Existential geography is contended to be the understanding of "shared contexts". It is, to quote Samuels (1981; 129)

> "...a type of historical geography that endeavours to reconstruct a landscape in the eyes of the occupants (and) users... in the light of historical situations that condition, modify, or change relationships."

Presenting a similar argument, Jackson (1981; 303) claims that existentialist phenomenology allows "an analysis of the spatial structure of social relations." Similarly, Samuels (1978b; 293) sees landscape as the biography of its creator — "thoroughly and permanently imbued with struggle, tension, and dialectical conflict."

Of course, the dialectic partly depends upon the perceptive powers of the individual, i.e. on the extent of his "being aware". An individual's power of perception is, however, a multidimensional product of cultural background, education and experience, as well as the psycho-philosophical constitution of the individual. In other words, the man-environment dialectic is by no means a simple process.

Perception of the lifeworld, and also specific environmental perceptions, are the subject of a rapidly widening discipline. Much work on cognitive perception has been done by psychologists, (e.g. Leff et al. 1974) but sociologists, architects and especially geographers are now very energetic in this field (e.g. Buttimer 1976, Bunting & Guelke 1979, Lowenthal 1967, Pred 1984, Relph 1981, Saarinen et al. 1984, Townsend 1977 and Tuan 1974). For example, Buttimer (1976; 279) gives a phenomenological perspective to perception when defining phenomenology as the analysis and interpretation of consciousness, particularly the conscious cognition of direct experience. In this context, Buttimer (1976; 282) argues that the difference

> "between inner (personal) experience and outer behaviour in space is the distinction... between subjective and objective modes of knowing. Phenomenology tries to transcend this Cartesian dualism, and proposes a mode of knowing which recognizes the validity of both modes, but is identical with neither... Whereas the subjective mode concentrates on unique individual experience, and the objective mode seeks generalization and testable propositions concerning aggregate human experience, the "intersubjective" or phenomenological mode would endeavour to elicit a dialogue between individual persons and the subjectivity of their world."

The existential epistemology is particularly concerned with space. However, it is to be stressed that existential space is anthropocentric; it is realized *through* the individual. Places are a link, i.e. they are the reference points in personal projections (Samuels 1978a; 31). Thus, Samuels (ibid. following Jaspers 1969) contends that since the assignment of place is an act of reference by someone, then "the places of objects and all spatial configurations are contingent upon whoever makes the assignment." Consequently, the only centre of concern is the one occupied by the existing individual. This situation is what each individual starts from and what each returns to because nothing else is real and present, but the situation itself becomes clear only when each individual thinks with reference to the objective being of the world (Jaspers 1969; 176).

Samuels (1978a; 31—2) uses the term "partial space" with respect to these reference situations. The partial space is the net of relations between man and the world. It is partial in the sense that it has bias or subjectivity and is incomplete. Indeed, it would seem to relate to the behavioural concept of intended rationality which was discussed earlier. The "reference situations" are defined as the historic conditions within which the assignment of space (or place) takes place. Partial space is, therefore, an "existential space". This space is not a space in which all objects are equally important and enjoy the same right to existence, but rather it is a partial space and constitutes a second space which is ceaselessly imposed by our way of projecting the world. This partial space is the way man orders his world in terms of space perceptions.

4. EMPIRICAL METHODS AND MATERIAL

41. Concerning eclectic, post-positivistic methods

The methodological problems created by "humanistic", and especially the phenomenological approach to understanding have received considerable attention, cf. Ley & Samuels (1978). In a wide-ranging review current geographical philosophies, Johnston (1983), cites Spiegelberg (1975) in outlining phenomenological approaches which have been adopted so far. One such approach is imaginative self-transposal, which requires the investigator to imagine himself in the place of the other person. The investigator is required, as far as possible, to adopt the *frame of mind* of the subject. Another approach, associated with hermeneutics, seeks to interpret the meanings behind actions. This approach, introduced by Dilthey (cf. Rose 1981), seeks to understand peoples' actions in terms of their situational context. *Again, this is very close to the approach adopted in the present investigation.* In a similar context, Buttimer (1976; 282) presents the opinion that

"One must shrink from models inspired by physics or the human mind, and consistently return to direct experience. The primary data for perception are taken from direct contacts between body and world. Neither of the two main currents of thought in Western Science — empiricism and idealism — has satisfactorily explained experience and perception. The empiricist is an observer of a world from which he can separate himself, whereas the idealist sees the world as an object of consciousness. Both imply some absolute truth external to the knower, or an absolute consciousness. Neither leaves room for the finiteness of human existence, and this is the crucial task."

Following this, the critique of the positivistic approach to understanding, implied or otherwise, requires an alternative methodology to be established for the investigation. The task is simplified by the eclectic nature of the approach adopted, which avoids the necessity for dogmatic adherence to strict methodologies. Also, two of the primary characteristics of the phenomenological position, *anthropocentrism* and *holism,* readily encompass a wide range of empirical techniques. Of the two, holism would seem to present the stricter epistemological constraints. Holism opposes "false analysis that artificially wrenches phenomena from their context" (Ley & Samuels 1978b; 11). (In the context of this investigation, here one might substitute "acts" for "phenomena".) Ley & Samuels (1978b; 13—14) add that "holism"

"does not mean the abstracted holism of systems theory. Rather, the synthesis is not factual but *dialectical,* not abstract but *contextual.*"

It should be noted that no disharmony, no contradiction exists between phenomenological approaches to understanding and quantification (cf. Ley & Samuels 1978; 13—14, Harris 1978). As Ley & Samuels *(ibid.)* point out

"The humanistic approach to quantification is pragmatic; while rejecting any mystique about measurement, one is free to make use of technique selectively and where appropriate. The concern with understanding rather than prediction leads to an immersion with a problem and its contexts..."

The question as to which methods best suit the epistemological demands has not been fully answered. A common feature of the methodologies is, however,

"a rejection of abstract, statistical and aggregate measures of the human subject, emphasizing instead a more particular, concrete, or highly empirical mode of inquiry. Empiricism and often radical empiricism are hallmarks of an approach that demands greater attention to the subjective roots of man's place, to the insider's perception." (Ley & Samuels 1978c; 121).

Perhaps one of the clearest methodological descriptions is provided by Gibson (1978) who discusses the phenomenological method of "interpretive understanding", i.e. Weber's *Verstehen.* This in turn is closely related to Dilthey's "imaginative self-transposal" noted above. Gibson (1978; 144) explains that

"We can scientifically interpret meaning in the sense that we make interpretations based on verified observations of an action and its verbal communication. The observation may be verified through a comparison with a rational meaning of both logical or mathematical *a priori* general concepts, or with *a priori* observer experiences that can yield emotional empathy and artistic appreciation. Rational understanding is possible and desirable in situations where logical or mathematical proportions are observed. In other words, we grasp what a person is doing when that person tries to realize stated goals by stated means and when those goals and means fit the facts that we have ourselves experienced."

Gibson continues with the important warning that *the understanding of meaning is difficult when the values of the observer differ considerably from those of the observed.*

A feature of interpretive understanding, as well as imaginative self-transposal, is that the observer must be aware of, and susceptible to, the human emotions, and to all the other manifestations of the human condition. This must be so if he is going to fully understand the actions deriving from them which may otherwise be considered to be irrational. Gibson (1978; 144) argues that the method is rationalistic in content, and notes, approvingly, that the methods of Weberian sociology

"...are predicated on the bias that human life is anything but rational. In other words, Weberian methods are rationalistic, but most of the content of the human actions they seek to understand is assumed to be irrational."

The rational understanding of human activities can be helped by placing the act under investigation into an intelligible and more inclusive context. This can be demonstrated by a clear, and appropriate, example given by Gibson (1978; 145):

"We understand the chopping of wood in terms of something that we add to direct observation. Our understanding depends on our knowing if someone is chopping for a wage, for subsistence, or for recreation."

In a similar vein, Hahtola (1973; 14), writing on the decision-making processes of forest owners, reminds us that the strict separation of values and facts, and the special philosophical status of mental variables, are corollaries of the separation of mental and physical phenomena. Values are conceived as subjective preferences or as conventions, but while they are empirically observable and describable, they ar not legitimized facts. Following this, they are not acceptable for analysis according to the positivist philosophy. Hahtola argues that in trying to understand the ways of thinking of a given group of human beings, it is necessary to empirically investigate their mental variables, and not just assume them. He contends that the most promising approach is to offer equal philosophical status to both mental and physical phenomena. By such an approach, meaning, in a phenomenological sense, is introduced into the situation context, cf. Dilthy, in Rose (1981).

The post-positivistic approach to problem solving is likely to remain a compromise between phenomenology, existentialism, idealism, or some other "humanistic" philosophical standpoint and positivism. At least for the time being, the post-positivistic approach can therefore be expected to be eclectic in its philosophical origins and in its methods. To borrow Wright's terminology (Wright 1947; 11), the mix is a matter of imaginative interpretation on the part of the investigator. Nonetheless, the primary elements of the phenomenological and existentialist epistemology — anthropocentrism, intentionality and holism — remain fundamental starting points of the investigation.

42. Empirical methods

The epistemological framework for the investigation requires analytical methods which would fulfill the requirement of anthropocentrism — i.e. maintaining contact with individual cases throughout the analysis, and holism (context) — i.e. the analysis must consider all the cases together, so that their interrelationships can be interpreted in a contextual way. The choice of such a methodology was simplified by the fact that the epistemology does not require, and indeed rejects, the need to predict, nor are hypotheses containing causal presuppositions to be tested.

The method considered to most adequately fulfill these requirements was factor analysis. Factor analysis, and the related principal components analysis, is employed to reduce the number of variables by rewriting the data set into a different form. The advantage of the method is that underlying structures in an otherwise unwieldy data matrix can be ascertained. The method also fulfills the epistemological requirement that the individual case be identifiable, as factor scores can be constructed for each case. Further, as all individuals (cases) contribute to the construction of the factors, the factors represent

an aggregate view, i.e. they present the overall context in which the performance of each individual can be observed. The procedures of factor analysis are not discussed here, but the following texts have formed a basis for the analysis: Kendall (1957), Harman (1960), Van de Geer (1971), Johnston (1978) and Elffers (1980). Elffers (1980; 318), for example, distinguishes two phases in a successful factor analysis; the technical phase (i.e. the mathematical phase) and the interpretational phase. The latter is meant to give real meaning, with respect to the science under discussion, to the "mathematically possible" factors. It is in the interpretational phase that the main objections to factor analysis arise, cf. Valkonen (1971; 110—121). Valkonen (1971), Hahtola (1971) and Järveläinen (1971) argue that the main problem with factor analysis is its misapplication rather than the method itself. It is therefore important, to follow Elffers (1980; 318), that the interpretation phase of factor analysis is executed in the presence of a theory, or frame of reference, strong enough to be able to determine whether the proposed interpretation is tenable or not. In other words, factor analysis, and indeed any multivariate analysis, must be conducted in the present of a strong frame of reference. This is one reason for the detailed ontological and epistemological discussion of Chapter 3, especially given certain shortcomings in the empirical material, which will now be summarized.

43. The material and its shortcomings

The material for the investigation originated from interviews of 63 small sawmill entrepreneurs located in North Karelia in 1982. These small sawmills each had a capacity of 5 000 cubic metres per year or less. However, it is probable that still more very small sawmills existed, and still exist, in North Karelia, but because of their ephemeral operation it was not possible within the limits of the investigation to locate them. Of the 63 small sawmills, 37 were engaged only in contract sawing and therefore did not purchase sawlogs (see section 21).

The material proved to have a number of shortcomings with respect to the empirical task in hand. In particular, the small sawmill owners were reluctant to give any details concerning their financial transactions, capital and turnover. Further, sawlog purchase and sawn wood production quantities were not always provided in sufficient detail by the owners. In the analyses, missing data were replaced by group means.

A further shortcoming is that the data are cross-sectional, i.e. they concern the small sawmills' activities at one period in time. There is no guarantee that the activities of the sawmills as revealed by the data are "typical". Interviews in a later year may have produced different results. This problem has, in fact, been discussed in more detail elsewhere (Selby 1987a) where it was noted that even with respect to their typology, it is unlikely that the small sawmills are stable over time.

The most serious shortcoming is, however, the number of variables available for analysis. At the outset, the investigation was planned as a straightforward positivistic investigation, albeit within a structuralist framework. The interviews yielded 180 variables, some of which were intended for a structuralist-positivist analysis, which proved unsuccessful, while others were for the B.Sc. thesis of a student of Helsinki University. The poor showing of structuralist-positivistic approach led to its rejection and the adoption of a "humanistic" epistemology (Selby 1984) which has been extended in Chapter 3 (above). This course of action was, however, penalized. The penalty being that while the questionnaire contained a number of questions concerning the entrepreneurs' life worlds, values and attitudes, they were never intended to form the core of the investigation. In other words, the number of variables available for the new analysis were greatly reduced. Attempts to acquire additional material by conducting new interviews were thwarted by severe financial constraints during the years 1985—1987, after which it was decided to terminate the project.

5. ENTREPRENEURIAL ATTITUDES AND ACTIVITIES

51. The assessment of entrepreneurs' attitudes

In the following empirical analysis, certain attitudes of the small sawmill entrepreneurs of North Karelia towards their lifeworld are described. These attitudes are then compared with their social environment and their firms' typologies. In so doing, an attempt is made to reveal aspects of the man-environment dialectic.

Fourteen attitude variables were available, to which were added variables concerning risk-taking (Are new investments planned?)

Table 5. Two-factor varimax model of entrepreneurial attitudes.

Variable	Factor B1 "SUFFIC"	Factor B2 "COMPIND"	h_2^2
LVPOR	0.64	0.00	0.41
MNVAL	0.57	0.00	0.29
LNDOW	0.00	0.63	0.42
WKGO	0.00	0.58	0.34
OWNRS	0.00	0.55	0.31
SAFLF	0.40	0.00	0.16
RSKTK	−0.37	0.00	0.15
INPLN	−0.34	0.00	0.12
DOTRY	0.00	0.00	0.06
MKTRG	−0.48	0.00	0.23
ELBOW	0.00	0.28	0.09
PROSL	0.00	0.00	0.00
OWNXP	0.00	0.25	0.10
GSCHG	0.00	0.00	0.00
SATDG	0.00	−0.39	0.20
Variance explained	1.55	1.46	
%	34.03	25.73	

where:
INPLN Are investments planned? (D)
MKTRG Marketing/activity range
SATDG Degree of personal satisfaction
LVPOR It is better to live poorly on one's own resources than to contract debts
MNVAL Money only has value if it earned by hard work
SAFLF A moderate by safe living is of more value than a high position and salary
RSKTK Many times in life it is worth taking risks
WKGO It is natural that the weaklings perish
DOTRY Nowadays it is worth everyone to strive for better conditions in life
OWNRS It is a shame if one cannot depend upon one's own resources
ELBOW Regretably, every one has to "elbow" to succeed in life
PROSL It is a mistake to choose one's profession on the basis of money
OWNXP It is better to trust one's experience than the views of, e.g. scientists, which are constantly changing
GSCHG It is a good think that society changes as the changes are usually for the better
LNDOW Landowning is the safest guarantee of security and independence.

and the firms' marketing and/or activity areas. The latter variable is considered to reflect aspirations, as the motivated entrepreneur can be expected to operate over a wider area. It also reveals an element of the social contact network: the wider the activity range, the greater the likelihood that entrepreneurs come into contact with views different to those prevailing in their local environments.

The variables were entered into factor analysis, and a two-factor varimax solution was found to be very satisfactory for the task in hand, table 5 (also Appendix 3). The solution was mathematically and interpretationally straightforward and avoided the more serious limitations of the method.

The factor model accounts for 59 % of the variance in data space and 100 % of the variance in factor space. Factor B1 (SUFFIC) is regarded as representing the "Low-risk sufficer" while factor B2 (COMPIND) represents "Competitive independence".

Factor B1 (SUFFIC) – Low-risk sufficer:

As the factor strengthens, the three attitude variables with positive signs strengthen, i.e. attitudes "harden". They are:

LVPOR It is better to live poorly on one's own resources than to contract debts.
MNVAL Money only has value if it is earned by hard work.
SAFLF A moderate but safe living is more to be valued than a high position and salary.

LVPOR and SAFLF concern related attitudinal processes, while MNVAL reflects an "old fashioned" attitude, or "morality" towards money and work. Such an attitude, it could be argued, reflects traditional social values. The variables with positive loadings can be considered to concern a willingness to suffice in the interests of perceived "security" and within the constrains of a conservative attitude towards money.

The variables with negative loadings on factor B1 (SUFFIC) support the above interpretation. Thus, as the factor strengthens, the attitudes "Many times in life it is worth

taking risks" (RSKTK) "weakens". Similarly, marketing or activity range (MKTRG) decreases and (INPLN) is negative (i.e. no investments are planned). Thus, the marketing area decreases, i.e. contributions to the firm decrease suggesting low aspirations, or an easily achievable level of satisfaction; risks are not approved of; and investments are more often not even planned.

Factor B2 (COMPIND) – Competitive independence:

As factor B2 (COMPIND) strengthens, the following positively loaded attitudes "harden":

LNDOW Landowning is the safest guarantee of security and independence;
WKGO It is natural that weaklings perish;
OWNRS It is a shame if one cannot rely on one's own resources;
ELBOW Regrettably, elbowing is necessary in order to succeed in life;
OWNXP It is better for one to trust life's experiences than to follow the views of, e.g. scientists, which are constantly changing.

The emphasis on landowning as a means of security clearly reflects the "rural" setting of the small sawmills (which are often linked to farms), but it also relates to a realistic appreciation of security, i.e. land as capital. Such an interpretation is supported by OWNRS, where "resources" are again stressed as a form of security. These two variables therefore suggest that "independence" is valued both in itself, but also as the best form of security. This contrasts with the "risk-minimizing" and conservative attitude to money associated with factor B1 (SUFFIC). The weak, but positive loading of OWNXP further supports the high value placed on independence. The "competitive" nature of this independence is demonstrated by the positive loadings of WKGO and ELBOW, both of which reflect somewhat aggressive attitudes towards life.

The only negatively loaded variable on factor B2 (COMPIND) is the degree of personal satisfaction (SATDG). Thus, as the factor strengthens, the degree of personal satisfaction lessens. This result supports the interpretation of the positively loaded variables. The lack of personal satisfaction can be seen as the cause of the somewhat aggressive attitude towards life, and the rather "fierce" belief in the value of independence. Such attitudes are undoubtedly very conservative, but they also are the stuff that motivation is made of — i.e. aspirations are higher than achievements, hence dissatisfaction.

The two-factor varimax model therefore provides two serviceable factors, one representing risk-minimizing and sufficing, the other competitive independence. Factor B1 (SUFFIC) lends support to Simon's harsh comment that sufficers "have not the wit to maximize". The second factor tends to support the popular image of the small businessman, i.e. the "self-made man". Factor scores were computed for each case, and used as attitudinal variables in the subsequent analyses.

52. Attitudes and activities

521. Attitudes and social context

It was argued in section 32 that the socio-economic environment may act as a constraint on entrepreneurial behaviour. In particular, the social environment of *Gemeinschaft,* or *traditional* societies restricts interaction, as well as creating strong pressures on the individual to conform to local norms. Following this, the entrepreneur's attitudes should be expected to be affected by his location. When situated in an area of scattered settlement, which is likely to exhibit *Gemeinschaft*-like social characteristics, the entrepreneur can be expected to possess restricted attitudes. Similarly, in operating his firm he will take care not to disturb the local equilibrium. Conversely, when situated in a commune's urban-like administrative centre, which may exhibit *Gesellschaft*-like social values, an entrepreneur's attitudes can be expected to exhibit more modern, socially independent components. With weaker local norms, he will be less restricted in the management of his firm.

Let us now examine the relationships between the entrepreneurial attitudes derived in by the above factor analysis and their social context or environment.

First, table 6a tabulates factor B1 (SUFFIC) scores against social context (location). In scattered settlement contexts, 34 % of the small-scale entrepreneurs score highly

Table 6. Entrepreneurs' business attitudes according to their social context (location).

6a) Low risk sufficing attitude (Factor B1):

	Settlement context					
	Scattered		Central		Total	
Factor B1	No	%	No	%	No	%
Very low	0	0.0	1	7.7	1	1.6
Low	8	16.0	7	53.8	15	23.8
Average	25	50.0	4	30.8	29	46.0
High	16	32.0	1	7.7	17	27.0
Very high	1	2.0	0	0.0	1	1.6
Total	50	100.0	13	100.0	63	100.0

Pearson Chisquare = 13.40 d.f. 4 Prob. 0.009

6b) Competitive independence attitude (factor B2):

	Settlement context					
	Scattered		Central		Total	
Factor B1	No	%	No	%	No	%
Very low	3	6.0	1	7.7	4	6.3
Low	10	20.0	1	7.7	11	17.5
Average	23	43.0	6	46.2	29	46.0
High	13	26.0	1	7.7	17	27.0
Very high	1	2.0	1	7.7	2	3.2
Total	50	100.0	13	100.0	63	100.0

Pearson Chisquare = 2.08 d.f. 4 Prob. 0.72

or very highly as low-risk sufficers, while only 16 % score weakly. Conversely, only 8 % of the small-scale entrepreneurs in central, urban-like social contexts score highly or very highly as low-risk sufficers, and over 60 % score weakly. The contention that social context, or environment, affects entrepreneurial attitudes is therefore given strong support.

The behaviours of the entrepreneurs exhibiting "competitive independence" attitudes are now examined, table 6b. A result opposite that of table 6a might be expected, but in fact table 6b demonstrates that the pattern is by no means so clear. While 38 % of the small-scale entrepreneurs located in central urban-like settlements receive high or very high scores (the result expected), 28 % of those located in scattered settlement areas also receive high or very high scores. The proportion of individuals scoring weakly is, according to expectations, greater in scattered settlement areas than urban-like centres. Nevertheless, the Chi^2-statistic indicates a poor differentiation between the groups. Of course, it has to be remembered that the majority of the sawmills under consideration are located away from urban-like centres; a fact which will tend to affect the issue now under discussion.

522. Attitudes and enterprise

To represent the entrepreneurs' degrees of entrepreneurship, the *a priori* sawmill typology is employed, see section 21. The typology represents a continuum of sawmilling activity, with part-time contract sawmills at one end, and full time commercial sawmills at the other. However, the typology is also considered to reflect the degree of contributions the entrepreneur has made to his firm, in time, labour and capital inputs.

Table 7a shows that scores for factor B1 (SUFFIC) are closely linked to enterprise typology — 46 % of the contract sawmill entrepreneurs score highly or very highly on B1 (SUFFIC). However, no commercial sawmill entrepreneurs obtain high or very high scores on B1 (SUFFIC); half (50 %) receive scores near the mean and are therefore of little statistical consequence, and 50 % obtain low or very low scores. The contract-commercial sawmill entrepreneurs fall between the two extremes, with 14 % scoring highly or very highly with respect to low-risk sufficing.

Table 7a therefore supports the line of discussion so far. The entrepreneur who scores highly on factor B1 (SUFFIC) is more likely to be content with part-time contract sawmilling. He is also less likely to take risks, social or financial, by expanding his enterprise.

The entrepreneur exhibiting competitive independence, as represented by high scores on factor B2 (COMPIND), on the other hand, can be considered suitably motivated to disregard social norms and to follow his entrepreneurial aspirations, and it is to this relationship we now turn our attention.

Table 7b illustrates the relationship of entrepreneurs' scores on factor B2 (COMPIND) and the structure of their firms. The positive relationship between competitive attitudes and the structure of the firms can be seen, with 42 % of the commercial sawmill entrepreneurs scoring highly. However, 28 % of the contract-commercial sawmill entrepreneurs and 25 % of the contract sawmill entrepreneurs also score highly. This result is interesting as it would appear to support the view that when a farmer diversifies into sawmilling he is making an *innovative* entrepreneurial act. Following this, a farm with sawmilling facilities can be considered to be at a higher entrepreneurial level than one without such supplementary activities.

Table 7. Entrepreneurs' business attitudes and their sawmill (enterprise) typology.

7a) Low risk sufficing attitude (factor B1):

	Contract		Type of sawmill Contract-commercial		Commercial		Total	
	No	%	No	%	No	%	No	%
Very low	0	0.0	0	0.0	1	7.1	1	1.6
Low	7	20.0	2	14.3	6	42.9	15	23.8
Average	12	34.3	10	71.4	7	50.0	29	46.0
High	15	42.9	2	14.3	0	0.0	17	27.0
Very high	1	2.9	0	0.0	0	0.0	1	1.6
Total	35	100.0	14	100.0	14	100.0	63	100.0

Pearson Chisquare = 18.12 d.f. 8 Prob. 0.02

7b) Competitive independence attitude (factor B2):

	Contract		Type of sawmill Contract-commercial		Commercial		Total	
	No	%	No	%	No	%	No	%
Very low	2	5.7	0	0.0	2	14.3	4	6.3
Low	4	11.4	5	35.7	2	14.3	11	17.5
Average	20	57.1	5	35.7	4	28.6	29	46.0
High	9	25.7	4	28.6	4	28.6	17	27.0
Very high	0	0.0	0	0.0	2	14.3	2	3.2
Total	35	100.0	14	100.0	14	100.0	63	100.0

Pearson Chisquare = 15.01 d.f. 8 Prob. 0.05

From the discussion so far, it can be expected that a more aggressive attitude to life is reflected in the level of entrepreneurship — aspirations will be high, and less easily fulfilled. High motivation may be reflected in the level of entrepreneurial organization, i.e. in the structure of the firm. Competitive independence, as represented by factor B2 (COMPIND), should relate to commercially more aggressive firms. However, table 7b shows, surprisingly, that a higher proportion of commercial than contract sawmill entrepreneurs received low or very low scores on B2 (COMPIND).

In the above analysis, the location of the entrepreneur was seen to relate to his values and attitudes, i.e. there is a contextual relationship. Thus, in the restricted, conservative, traditional *(Gemeinschaft*-like) social environment of rural areas with scattered settlements, the small-scale entrepreneur would seem to possess lower aspirations so that his value-world does not seriously conflict with his life-world. The small-scale entrepreneur therefore adjusts his business activities to his socio-economic environment, i.e. to the context of his life-world, in order that local norms are not exceeded and sanctions incurred. In other words, the model of the world, towards which the entrepreneur reacts in an *intendedly rational* way, is constrained at the outset by the socio-economic environment, i.e. the man-environmental dialectic can be considered to be at work here. Consequently, the entrepreneur with high aspirations will need a strong personality to ignore local norms (i.e. the local dialectic). He will need to demonstrate his independence of these norms, or to work publicly to change such norms, or be prepared to move to where his aspirations and attitudes are more socially acceptable. We here meet the existential viewpoint, which argues that each man must forge his own self out of "senseless circumstances and senseless limitations" (Grene 1959). Following this argument, it is realized that a dialectic exists between the entrepreneur and his lifeworld: an interaction in which the perceived environment for business and the opportunities that are perceived in that environment determines the actions of the entrepreneur. Environmental perception is therefore a key element in this dialectic, and it is to this we turn our attention in the following chapter.

6. EMPIRICAL ASPECTS OF ENTREPRENEURS' PARTIAL SPACE

61. An empirical model of entrepreneurs perceived business environments

Following the introductory discussion on environmental perception and the creation of partial space, an empirical model of the entrepreneurs' perceived environments for business will be examined. It is to be stressed that to gain a proper understanding of the process of environmental perception a wider range of variables and perception study techniques closer to those used in social psychology should be employed (cf. Franscella & Bannister, for theoretical and methodological considerations, and Townsend 1978 for an empirical geographical application).

The variables available for the construction of the perceived environment model being only exploratory are, as already stressed, far from satisfactory. They resulted from questions asking the small sawmill entrepreneurs to rank aspects of their business environment (from 'very poor' to 'very good' on a scale of five). Initial experiments provided a one-factor model (Selby 1986) which gave satisfactory results. In the present analysis, however, two location-related variables have been added to the model. The first of these variables described the social location of the sawmill according to whether it was an urban-like settlement location or scattered settlement. The second variable concerned the distance from the sawmill to the nearest urban-like centre.

The effect of the two location variables was to create a two-factor model, table 8 (and Appendix 4). The two factors account for 87 % of the variance in data space, with the first factor accounting for 63 %. The interpretations of the two factors remains straightforward.

As *factor Pe1* strengthens:

- the perceived business climate improves (BSCLM)
- the perceived power supply availability improves (PWRSU)
- the perceived availability of raw material improves (RMSUP)
- the perceived availability of labour improves (LABSU)
- the perceived access to markets improves (MKTAC)
- the perceived availability of transportation improves (TRANS).

Factor Pe1 contains variables related to the perception of factors of production and can therefore be considered to represented the *perceived conditions for production.*

As *factor Pe2* strengthens:

- the social environment of the sawmill is more urban-like (SMLOC)

Table 8. Two-factor varimax model of entrepreneurs' perceived business environments.

Variable	Factor Pe1	Factor Pe2	h^2_j
(BSCLM) Perceived business climate	0.83	0.30	0.75
(PWRSU) Perceived reliablity of power supply	0.71	0.00	0.55
(RMSUP) Perceived availability of raw materials	0.69	0.00	0.48
(LABSU) Perceived availability of labour	0.69	0.25	0.54
(SMLOC) Location, by settlement type	0.00	0.66	0.45
(SRVSU) Perceived availability of services	0.00	0.65	0.47
(URBDI) Distance to nearest urban centre	0.00	–0.63	0.40
(MKTAC) Perceived access to markets	0.30	0.57	0.42
(TRANS) Perceived availability of transport	0.27	0.50	0.32
Proportion of variance explained by the factor = 87.5 %			

Factor Pe1: Perceived conditions for production
Factor Pe2: Service oriented perception

Table 9. Entrepreneurs' perceived business environments by sawmill (enterprise) types.

9a) Perceived conditions for production (Factor Pe1):

Perceived environment	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Very poor	0	0	0	0	0	0	0	0
Poor	27	77	0	0	0	0	27	43
Average	6	17	6	43	1	7	13	20
Good	2	6	7	50	11	79	20	32
Very good	0	0	1	7	2	14	3	5
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 49.5 d.f. 6 Prob. 0.00

9b) Service oriented perception (Factor Pe2):

Perceived environment	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Very poor	0	0	2	14	0	0	2	3
Poor	11	31	7	50	1	7	19	30
Average	17	48	4	28	7	50	28	44
Good	3	8	1	7	4	28	8	12
Very good	4	11	0	0	2	14	6	9
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 17.7 d.f. 8 Prob. 0.02

— the perceived availability of service improves (SRVSU)
— the distance to the nearest urban-like centre decreases (URBDI)
— the perceived access to markets improves (MKTAC)
— the perceived availability of transportation improves (TRANS)
— the perceived business climate improves (BSCLIM).

Factor Pe2 can be seen to possess a number of "urban" features, notably with respect to variables pertaining to location and the perception of services. The perceived environment for business is also significantly loaded on factor Pe2. The factor can therefore be considered to represent *service oriented perception* on the part of the entrepreneurs.

In the single perceived environment model (Selby 1987), a clear relationship was found between entrepreneurs' perceived environments and their business activities. Contracting sawmill entrepreneurs were found to perceive somewhat poor environments for business, whereas the commercial sawmill entrepreneurs only admitted to perceiving good or very good environments for business.

The two-factor perceived environment model, above, enables a further examination of this situation. Thus, table 9a shows that with respect to factor pe1 (perceived conditions for production) the majority of the contracting sawmill entrepreneurs score relatively poorly (94% perceiving fair or average conditions for production). As we move up the entrepreneurial hierarchy, however, an increasing proportion of entrepreneurs perceive good to very good conditions for production (neither contracting-commercial nor commercial sawmill entrepreneurs perceived below "normal" conditions for production). The result suggests intended rationality on the part of these entrepreneurs, as few would seem to manage their firms in such a way as to contradict the potential for business they perceive in the environment. To put it another way, within the limitations of the partial space the small sawmill entrepreneurs have perceived, they have largely created suitably structured enterprises.

In table 9b, concerning Pe2 (service oriented perception) a different pattern is shown. The contracting sawmill entrepreneurs are seen to score relatively well compared with their performance with respect to factor Pe1. This result reflects the nature of contracting sawmill production, which is not dependent upon the production of commercial sawn timber. The contracting-commercial sawmill entrepreneurs, on the other hand, obtain rather low scores with respect to factor Pe2. They have mainly possess "rural" location attributes and consequently perceive a weaker service environment. According to this result, it is tempting to conclude that the addition of commercial sawing to contracting work extends the contracting-commercial entrepreneurs to the limit of their ability to exploit the partial space they have created for themselves. We shall return to this question in section 62.

Finally, in table 9b, the commercial sawmill entrepreneurs are seen to score rather well with respect to factor Pe2. This means that they are business orientated, i.e. that they are located in or near urban-like social environments and perceive service oriented environments. The result again suggests intended rationality on the part of these entrepreneurs as they have developed in accordance with the more constructive man-environment dialectic. In other words, they have attempted, through their enterprise structure, to respond to the business potential they perceive in the environment. The commercial sawmill entrepreneurs' partial space for business can be considered to be more extensive than the restricted partial spaces of the entrepreneurs lower in the entrepreneurial hierarchy, and this is reflected in firm typology via the mechanism of intended rationality.

The above interpretation supports the existentialist argument of "created" space, or existential space, as outlined in section 35. Through his actions the entrepreneur creates both objective and subjective experiences; i.e. he creates "reference" experiences or situations with which to create his "existential" or "partial" space. This in turn creates the basis for the man-environment dialectic; i.e. his reaction with his environment. However, as the objects and events in this space are not given equal importance by each entrepreneur, each entrepreneur creates his own partial space. The partial space, and the man-environment dialectic are therefore personal. *Those entrepreneurs who are more active in creating existential (partial) space can be regarded to be those who also perceive a wider set of possibilities for business in their environment.*

In the following sections, more attention is given to the entrepreneurs' acquisition and use of information, the dialectic between this information utilization process and the structure of the small sawmills, and consequently the entrepreneurs' use of their partial space.

62. Information, ability and entrepreneurial space

621. A comment on the behavioural matrix

So far in this theoretical and empirical discussion of small sawmill entrepreneurs' behaviours, we have examined the man-environment dialectic from the standpoint of the formation of attitudes and the social environment of the individual (chapter 5) and the dialectic relation between the entrepreneurs' perceived business environments and their business activities. The discussion has lead to a position where it can be argued that each entrepreneur creates his own "partial space" towards which he is intentionally rational, but the intended rationality and the creation of partial space form a dialectic which place constraints on the entrepreneur. The role of information, or rather attitudes towards information, will be seen to be a factor in this dialectic. The empirical discussion now takes a closer look at the role of information[1].

It has already been noted that learning, both formal and informal (via reference groups and social norms) are of importance in the entrepreneurial process (cf. Ullrich 1972). Similarly, it has been noted that each individual as a personal history which imposes constraints upon his life world, and which also affects the creation of personal "partial space". This is one part of the man-environment dialectic. From this epistemological standpoint, an empirical analysis will be made of certain aspects of entrepreneurial behaviour — behaviour in the context of each entrepreneur's personal "entrepreneurial space"; namely, their acquisition of business-related information and their ability to use that information.

The analysis employs a modified form of a behavioural location model — the "behavioural matrix" — introduced by Pred (1967)

[1] Attention is drawn to a detailed discussion of the network context of small sawmill entrepreneurs by Vanhanen (1988), briefly discussed here in section 231.

as a critique and answer to normative location theories. A brief introduction to the model is required before proceeding to the empirical application.

The behavioural matrix is shown in figure 6. There are two orthogonally constructed concepts, or parameters, the first being the quantity and quality of information possessed by the entrepreneur, the second being his ability to use that information. Thus, position B_{11} on the matrix (very little or no information, very little or no ability to use information) is largely theoretical, as in such circumstances an entrepreneur is hardly likely to begin operations. Similarly, position B_{nn} on the matrix is unlikely, as it is not in the nature of human beings to possess near perfect and near absolute information, or to possess perfect ability to use information. All other locations on the matrix are more or less realistic. The matrix therefore presents a conceptual tool for analyzing real firms and real entrepreneurs, with respect to whom normative assumptions are irrelevant. Further, the method is clearly anthropocentric, i.e. places the entrepreneur in the centre of his life-world, and is consequently conceptually appropriate with respect to the humanistic (phenomenological) epistemology established at the outset.

Thus, at any given point in time, each decision-making unit or entrepreneur is considered to have "a real spatial attribute (site and situation, land use or path of movement) that is conveyable on a map, and behavioural qualities that can be hypothetically located in the behavior matrix" (Pred 1967; 24). In the present investigation, the spatial element is replaced by a structural element, i.e. the small sawmill structural typology (reflecting the man-environment dialectic), which might be termed "entrepreneurial space". The method is, therefore, concerned with the individual, i.e. it is anthropocentric, and does not deal with aggregates of individuals. As such, it is well suited to the epistemological frame, a suitability strengthened from both a phenomenological and existentialist viewpoint by being "spatial".

Nonetheless, from an analytical standpoint, an advantage of the matrix format is that an indefinite number of undefined classes can be located along each axis. Each decision-making unit or individual can be allocated to a cell (B_{11}, B_{12} ... B_{nn}, in figure 6). "The ability to imaginarily sort (individuals or units) into different categories (cells) will ... prove highly convenient when it becomes necessary to link the behavior matrix with maps representing economic-geographic distributions" (Pred 1967; 25).

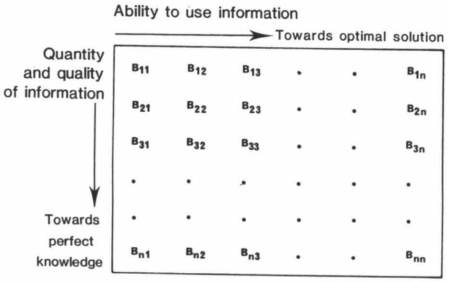

Figure 6. The behavioural matrix (Pred 1967;25).

Pred observes that a problem in the use of the matrix is the systematizing of its contents for the purpose of analysis. A suggested solution is based on the *adaptive-adoptive* dichotomy of Alchian (1950), according to which location decisions are hypothetically sorted into two polar classes. One class maintains that economic activities rationally *adapt* themselves to the conditions of the society in which they exist (individuals and units make well thought-out locational decisions based on relevant information); the other class assumes that activities react to their environment in relative ignorance, with the "lucky ones" being *adopted* by the system (individuals and units make haphazard decisions grounded on inadequate or irrelevant information, and only by chance become successful or profit-making operations). Spatial survival "does not require proper motivation but may rather be the result of fortuitous circumstances" (Pred 1967; 22).

Pred (1967; 25) modifies the adaptive-adoptive dichotomy into a four-fold classification that can be interpreted with reference to the behavioural matrix. Thus, all the decision makers falling into the lower right-hand quadrant of the matrix (large and accurate quantities of information/good ability to use information) correspond to *successful adaptors;* all the decision makers in the lower left-hand quadrant of the matrix (large and accurate quantities of information/poor ability to use) correspond to *unsuccessful adaptors.* All decision makers falling within the upper right-hand quadrant of the matrix (small and imperfect quantities of information/good ability to use) correspond to *successful adopters;* and all decision makers in the upper left-hand quadrant (small and imperfect quantities of information/poor ability to use) correspond to *unsuccessful adopters.* This classification is not without it critics, not least because of the subjective nature of the terms *successful* and *unsuccessful.* Certainly, in the following application of the behavioural matrix to the small sawmill entrepreneurs of North Karelia, the criticism of the classification is seemingly justified. It is difficult to call a sixty year old contracting sawmill which is located in the upper left hand quadrant of the matrix "unsuccessful"! The principle of the classification has utility, but it is better to employ a less emotive, although somewhat cumbersome, set of terms based simply on relative positions in the matrix: "upper left-hand quadrant", for relatively little information and relatively little ability; "upper right-hand quadrant", for relatively little information and relatively good ability, and so on, figure 7.

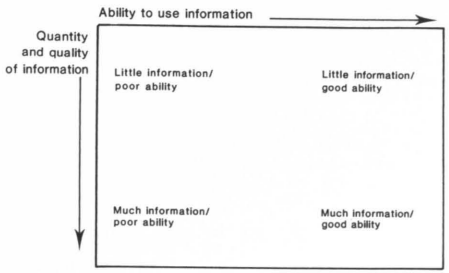

Figure 7. A four-fold classification within the behavioural matrix.

A further benefit of the behavioural matrix is its ability to plot all cases in the same behavioural space. This space, defined by its orthogonal axes, forms a basis for understanding the location of the individual in the context of the behaviour space as a whole. This being so, it should be possible to identify aspects of the dialectic relationship between the each entrepreneur's behavioural space — which can be considered to be part of his partial space — and his sawmill structure.

622. *Behavioural matrix concepts and the small sawmill entrepreneurs*

Pred's ideas had been taken into account, at least to some extent, at the outset of the investigation, and some questions relating to the concepts embodied in the behavioural matrix had been put to the small-sawmill owners during interviews conducted during the Spring of 1982. At that stage of the investigation, however, no plans had been made to empirically realize Pred's matrix. Consequently, the material available was not entirely suited for the task in hand. A solution to this problem was to construct new variables which could be considered to at least partly realize the "quantity and quality of information" and "ability-to-use" concepts in question. Principal components analysis was employed for this task.

Five variables were available for the realization of the ability-to-use concept:

ENAGE	Age of the entrepreneur
EDLEV	Level of education
MANLG	Length of management of present enterprise
ENTEX	Previous entrepreneurial experience
PROEX	Previous professional experience

Eight variables were available for the construction of an information concept or concepts. It has to be admitted at the outset, however, that the material available concerns only the quantity of information, not its quality. The variables are:

INFAT	Attitude towards information seeking
ADINF	Primary interest in seeking administrative information
RMINF	Primary interest in seeking information on raw material supply
PDINF	Primary interest in seeking information on product development
MKINF	Primary interest in seeking information on product marketing
OTINF	Primary interest in seeking information on other (unspecified) fields
PROAF	Number of professional affiliations
MKRNG	Marketing or activity range.

Table 10 presents the three component solution (additional information is given in Appendix E). The solution accounts for 51 % of the total variance, of which the first component accounts for 21 %, and components 2 and 3 account for 16 % and 13 % respectively. The three components are interpretationally straightforward.

Table 10. Principal component model for the realization of the behavioural matrix.

Variable	Component I	Component II	Component III	h^2_3
ENAGE	0.808	0.000	0.000	0.654
PROEX	0.696	0.000	0.000	0.525
MANLG	0.682	0.000	-0.337	0.585
EDLEV	-0.614	0.000	0.000	0.434
ENTEX	0.526	-0.290	0.490	0.600
ADINF	0.000	0.786	0.000	0.673
RMINF	0.000	-0.675	0.000	0.485
OTINF	0.275	-0.541	0.000	0.368
PRINF	-0.275	-0.431	0.591	0.679
MKRNG	0.000	0.000	0.561	0.342
INFAT	-0.344	0.440	0.476	0.537
PROAF	0.000	0.441	0.464	0.460
MKINF	0.000	0.000	0.489	0.256
Variance explained	2.712	2.112	1.780	
%	20.86	16.24	13.69	

where:

ENAGE	Age of the entrepreneur
EDLEV	Level of education
MANLG	Length of management of present enterprise
ENTEX	Previous entrepreneurial experience
PROEX	Previous professional experience
INFAT	Attitude to information seeking
ADINF	Primary interest in seeking administration information
RMINF	Primary interest in seeking information of raw material supply
PDINF	Primary interest in seeking information on product development
MKINF	Primary interest in seeking information on product marketing
OTINF	Primary interest in seeking information on other (unspecified) fields
PROAF	Number of professional affiliations
MKRNG	Marketing or activity area

Component I *(Entrepreneurial experience)* is considered to concern the entrepreneurs' experience. As the component strengthens the age of the entrepreneur increases (ENAGE); it becomes more likely that the entrepreneur has had an earlier profession (PROEX); the length of management increases (MANLG); and it becomes more likely that the mill owner has had previous entrepreneurial experience (ENTEX). By implication, the component is considered to relate to ability. The argument behind the implication follows Pred (1969; 37—38) who argues that it is not only the quantity of information that is important, experience in handling must also be taken into consideration. Thus, Pred, with reference to Shackle (1961; 57) argues that

"Any actor embarking upon a... decision-making process for the second, third, or nth time, can be viewed as working with more information than previously by the mere fact of his past experience. For even if the multi-decisional actor lived in total isolation from like actors he would still always have an informational increment due to the outcome (experience) if his last decision."

The justification for considering the positively loaded variables on Component I to concern ability is supported by the negatively loaded variables. As the component strengthens, the role of the entrepreneur's level of schooling diminishes (EDLEV). The variable concerning active or passive information gathering (INFATT) is also negatively loaded on component I. Thus, as the component strengthens (i.e. as age and experience increase) the attitude to information gathering becomes more passive, suggesting that the experience of the entrepreneur is of greater importance than the quantity of information (which may cause information overload, or which may often be irrelevant or redundant, Pred 1967; 38).

On the basis of the above reasoning, Component I is considered to offer an imperfect but nevertheless serviceable realization of the behavioural matrix concept of "ability to use information".

The interpretations of Component II *(administration-information seeking)* and component III *(production-information seeking)*

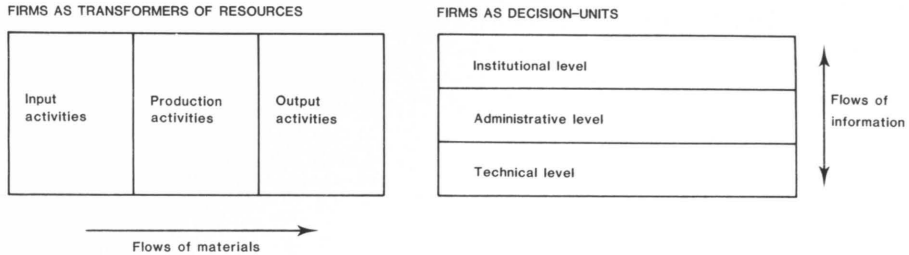

Figure 8. A two-dimensional structure of a firm (Thompson 1967).

are as follows: both concern aspects of information seeking.

As component II strengthens the entrepreneur expresses greater interest in administrative information (ADINF); he has more professional affiliations (PROAF); and he has an active attitude to information gathering (INFAT). Similarly, as the factor strengthens the entrepreneur expresses less interest in raw material supply information (RMINF); less interest in non- specified business related information (OTINF); and he is less likely to have had previous entrepreneurial experience (ENTEX). Thus, component II is considered to represent the entrepreneur's interest in seeking management-related administrative information.

Component III, being complementary to component II, stresses production-related information seeking. Thus, as the component strengthens interest in product development-related information increases (PDINF); the marketing or activity range of the sawmill increases (MKRNG); there is an increased likelihood of previous entrepreneurial experience (ENTEX); interest in product marketing-related information increases (MKINF); the entrepreneur's attitude to information is active (INFAT); and the entrepreneur has more professional affiliations (PROAF). Negatively loaded on the component is length of management (MANLG). Component III therefore contains a number of positively loaded variables related to product development and marketing information. Entrepreneurial experience and marketing range, also loaded on the component, do not detract from the interpretation. Rather, they support the interpretation in that, with the active attitude towards information, the component is further seen to represent motivated product-orientated sawmill entrepreneurs.

Theoretical support for the interpretation of the principal component model can be found by reference to Thompson's model of the firm (Thompson 1967, see Fredriksson & Lindmark 1979; 157—9). Thompson divides the functions of firms into two classes-decision units and transformers, figure 8. While neither Pred's behavioural matrix nor the principal components model, above, considers firms as transformers, both clearly address the same field as Thompson's "firms as decision units". Component II can be considered to relate to Thompson's "administrative level" information, and component III to his "technical level" information.

The principal components were converted to operational variables by computing the component scores for each case. However, the matrix has orthogonal axes, and so a solution had to be found to reducing three components into two for its realization. As components II and III are considered to be complementary, describing as they two aspects of information seeking activities, their scores were summed. Theoretical justification for this solution again being found with reference to Thompson's model of firm structure (Thompson 1967). However, before proceeding with the realization of the behavioural matrix, it is of value to examine the relationship of each component to the *a priori* sawmill typology and thereby to the entrepreneurs.

Table 11 deals with component I. The contracting sawmill entrepreneurs are seen to possess above average scores for ability. One reason for this is undoubtedly the presence of the entrepreneur's age (ENAGE) and length of management (MANLG) on the component as the contracting sawmills are mostly farm-related enterprises and, like their managers, have a high average age. The con-

Table 11. Entrepreneurs' ability according to component I, by sawmill types.

Component I scores	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Very low	1	3	0	0	5	35	6	9
Low	5	14	5	35	2	14	12	19
Average	12	34	4	28	4	28	20	31
High	16	45	5	35	3	21	24	38
Very high	1	3	0	0	0	0	0	1
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 18.2 d.f. 8 Prob. 0.01

Table 12. Entrepreneurs' administration-related information according to component II, by sawmill types.

Component II score	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Very low	0	0	4	28	2	14	6	9
Low	2	5	2	14	0	0	4	6
Average	30	85	6	42	5	35	41	65
High	3	8	2	14	3	21	8	12
Very high	0	0	0	0	4	28	4	6
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 31.8 d.f. 6 Prob. 0.00

Table 13. Entrepreneurs' production-related information according to component III, by sawmill types.

Component III scores	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Very low	2	5	0	0	0	0	2	3
Low	12	34	2	14	2	14	16	25
Average	18	51	5	35	6	42	29	46
High	3	8	5	35	3	21	5	17
Very high	0	0	2	14	3	21	5	7
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 15.70 d.f. 8 Prob. 0.04

tracting-commercial sawmill entrepreneurs are more evenly distributed, and do not receive very high or very low scores. The only entrepreneurs to score poorly on the ability component are some of the commercial sawmill entrepreneurs, which again may reflect the loading of length of management and entrepreneur's age on the component: the commercial sawmills and their entrepreneurs tend to be younger than the other sawmill types.

Table 12 illustrates the relationship between component II and sawmill typology. The contracting sawmill entrepreneurs, in particular, are shown to be strongly grouped around the mean of the component indicating a somewhat "neutral" relationship. Such a response is not out of keeping with the status of such sawmill enterprises. With respect to the contracting-commercial and commercial sawmill types, however, they have almost opposite behaviour. The former, while strongly grouped around the mean, nonetheless demonstrate little interest in administrative information (42 % receive low or very low scores), while only 14 % score positively on component II. The commercial sawmill entrepreneurs, on the other hand, are seemingly active seekers of administration-related information, as 50 % of them score highly or very highly on the component. Again, the result is consistent with the status of such enterprises.

The third component (PRODINF) should logically not be of great interest to con-

Table 14. The distribution sawmill (enterprise) types with respect to the four-fold classification of the behavioural matrix.

	Contract sawmills		Contract-commercial sawmills		Commercial sawmills		Total	
	No	%	No	%	No	%	No	%
Little information/ low ability	9	25	3	21	2	14	14	22
Little information/ good ability	20	57	3	21	1	7	24	38
Much information/ low ability	1	2	4	28	7	50	12	19
Much information/ good ability	5	14	4	28	4	28	13	20
Total	35	100	14	100	14	100	63	100

Pearson Chisquare = 22.53 d.f. 6 Prob. 0.000

tracting sawmillers, and this is in fact demonstrated as 40 % of them receive low or very low scores. Their residual interest in production-related information probably reflects the loading of marketing range (MKRNG) on the component. However, many contracting sawmill entrepreneurs follow the technical developments in their trade, and are also interested in quality developments. The contracting-commercial sawmill entrepreneurs show rather more interest in production-related information (50 % scoring positively). Surprisingly, perhaps, a slightly lower proportion of commercial sawmills scored positively, but 21 % scored very highly on the component, table 13.

The previous three tables are therefore straightforward in interpretation. As expected, the contracting sawmill entrepreneurs are less interest interested in administrative and production related information, but exhibited fairly high ability to use information. The contracting-commercial and commercial sawmill entrepreneurs, on the other hand, did not score so well on component I. This might suggest that they are particularly interest in the practical sides of their firms, but the result also reflects the structure of component I which contains age-related variables. These probably weight the scores in favour of the older contracting sawmills and their owners.

63. Alternative interpretations of the applied behavioural matrix

The discussion now returns to the experimental realization of Pred's behavioural matrix. Component I (entrepreneurial experience) was employed to represent Pred's concept of "ability to use information", and components II (administration-information seeking) and III (production-information seeking) represented the concept of "quantity and quality of information".

A realization of the behavioural matrix is presented in figure 9. The component scores are shown by the centrally located axis in broken lines. The outer parameters of the matrix are located subjectively, with due reference to the theoretical matrix, see figure 6. It is to be remembered that the origin of the parameters in the realized matrix is not zero, i.e. there can be no operational equivalent of B_{11}.

The structure of the component scores is, in fact, very convenient. All the cases with scores greater than the mean receive positive scores and all the cases with scores less than the mean receive negative scores. It is therefore easy to classify the cases with respect to their scoring, table 14.

The contracting sawmill entrepreneurs, who form the lower end of the entrepreneurial hierarchy, are found to be mostly located in the upper quadrants of the matrix classes (relatively little information), with over half (57 %) also possessing relatively good ability. The contracting-commercial small sawmill entrepreneurs, one step up the hierarchy, show a markedly more even distribution: 42 % are in upper two quadrants (relatively little information), and 56 % are in the lower quadrants (relatively much information). In each of these classes, the distribution is evenly distributed between those with relatively much and relatively little ability. At the highest entrepreneurial level,

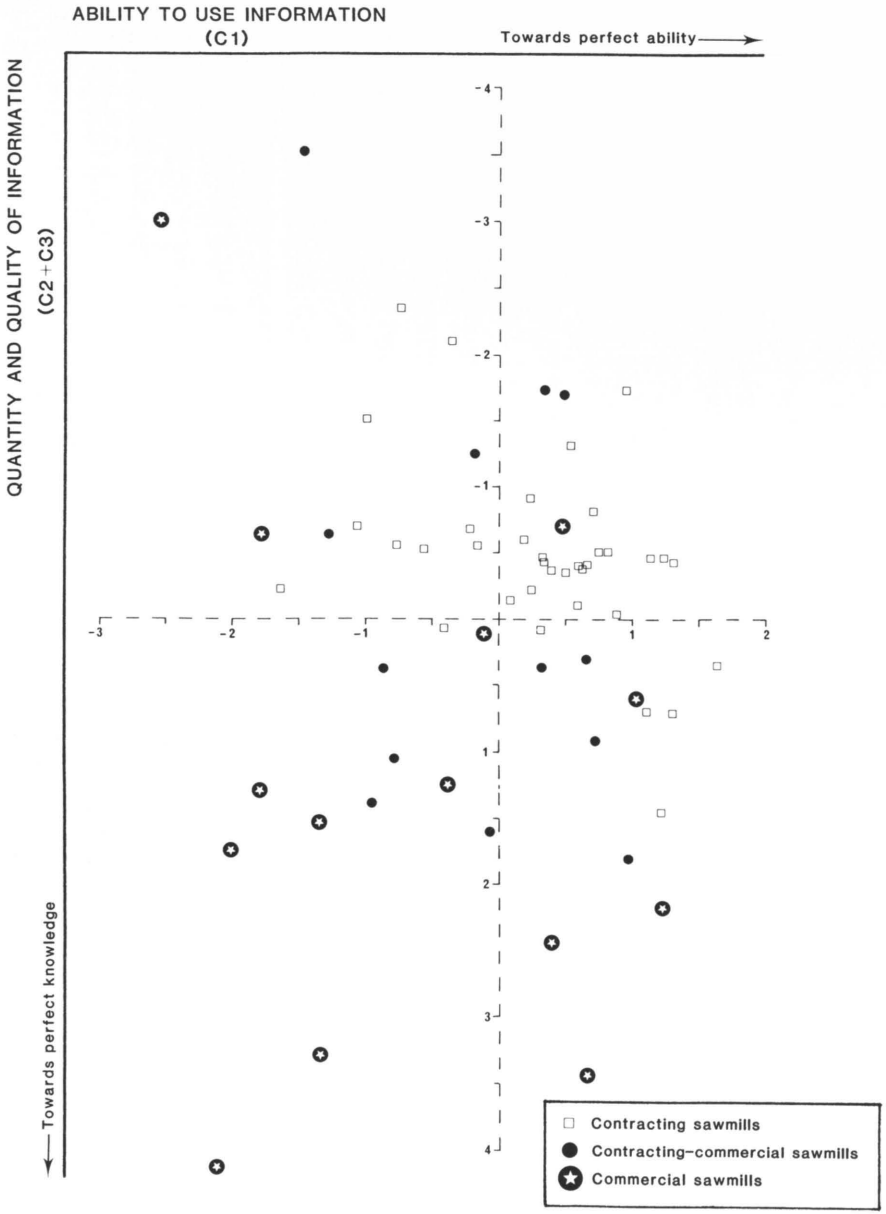

Figure 9. The behavioural matrix applied to the small sawmills of North Karelia, 1982.

the commercial small sawmills are strongly represented in the quadrants representing much information (78 %), but these entrepreneurs have a tendency to possess relatively low ability. A possible reason for the latter observation is the presence of the variable representing sawmill entrepreneurs' length of management on the ability factor, as noted in section 62.

Given the nature of the industry in question (its high mean age, its simple technology and its rural environment) it is logical to expect that the majority of the sawmills would be located in the right hand quadrants (much ability) of the behavioural matrix. Such an expectation stems from the fact that many farms have portable sawmills driven by tractors (Huttunen 1981). The extended survival of such sawmills can be seen as evidence of mildly successful acts on the part of the entrepreneurs in question. It is therefore surprising to find so many small sawmill enterprises located in the left-hand quadrants (representing relatively low ability). The result certainly seems to contradict the expectation that market forces will remove the inefficient, an event which has not happened according to the high average age of the studied enterprises.

It is to be remembered that job opportunities are few in rural areas. In the face of lowered incomes from his enterprise, the entrepreneur may be forced to lower his aspirations because the alternatives have negative utility for him. Abandoning sawmill production will mean reduced income where the sawmill is part of a farm, or it will mean unemployment were the sawmill is an independent unit. Unemployment in North Karelia is, locally, as high as anywhere in Finland. It is assumed, therefore, that the entrepreneur will not voluntarily opt for unemployment. This view is supported by Eskelinen & Vatanen (1988) who observed considerable enterprise formation activity in the region in the face of unemployment resulting from the closure of a significant employer in the wood working industry.

Further, it is assumed that ties-to-place will also act to reduce the attractiveness of migration (cf. Tuan 1974: 233—245). Given such unattractive or undesirable alternatives, therefore, the "unsuccessful" small sawmill entrepreneur is assumed to prefer to lower his aspirations and "make do", at least in the short run.

An alternative interpretation of the results of the realized behavioural matrix is as follows. The entrepreneurs in the upper left hand quadrant (little information/poor ability to use) have constructed an entrepreneurial partial space which is restricted. Thus the man-environment dialectic is also restricted. This in turn creates a dialectic causality — a cumulative and circular process — which, returning to the discussion of perceived environments, limits the entrepreneur's ability to perceive the business potential in the environment. Being intendedly rational, he reacts to his perceived poor environment by admitting to low aspirations and a low willingness to take risks.

Let us now consider the opposite end of the continuum. The entrepreneurs located in the lower right-hand quadrant of the behavioural matrix (much information/good ability to use) could be argued to have an extensive entrepreneurial partial space. The man-environment dialectic now works in their favour. The cumulative process means that as their partial space expands, their intended rationality towards their perceived environment for business enables them to exploit the environmental potential they perceive, and their firm expands accordingly.

7. SUMMARY AND DISCUSSION

71. Summary of the investigation

The aim of the investigation has been two-fold. The primary aim has been to determine the dialectic relationship between small scale entrepreneurs and their business environment and to see if this dialectic has a bearing on their business activities. A secondary aim has been to examine the utility of employing a post- positivistic epistemology in a peripheral region development context.

Chapter 2 established the context of the investigation by examining the structure of the small sawmills of North Karelia in the context of their socio-economic environment.

Chapter 3 addressed question of "context" by means of an ontological and epistemological discussion of the behavioural characteristics of *real* human beings rather than their theoretical, model-oriented approximations. Thus the entrepreneurs dialectic relationship with their life world was revealed, and considered to be part of the decision making process which effects the level of entrepreneurial activity. The existential phenomenological concept of partial space was applied to the present problem setting, on the basis of which the term "entrepreneurial space" was derived. Methodological implications of the chosen epistemology, as well as the material for the empirical investigation, were discussed in Chapter 4.

Chapter 5 approached the small sawmill entrepreneur through the medium of his attitudes. With the material available, two clearly defined classes of entrepreneurs were identified — those who minimized risk and were generally sufficers, and those who were somewhat aggressively competitive and not sufficers. Taking into account the effects of the man-environment dialectic identified in the epistemological frame of reference, it was considered that the social environment appeared to play a role in the formation of attitudes. Certainly, the low-risk sufficing entrepreneurial attitude is associated with scattered settlement areas, i.e. areas which were likely to exhibit traditional (*Gemeinschaft*) social values.

Entrepreneurial attitudes were therefore considered to reflect the man-environment dialectic. The more restrictive *Gemeinschaft*-type social environment resulted in entrepreneurs whose attitudes were passive, confined to low-risk taking and sufficing. The structural manifestation of the dialectic was considered to be the typology of the small sawmills in question. The restricted partial space created and experienced by the sufficing entrepreneurs was considered to result in a low level of aspiration and a simple firm typology. An extended partial space was considered to result in a more active dialectic and a higher enterprise typology. The empirical results supported the behavioural assumption of intended rationality as an actor in the dialectic.

In Chapter 6, attention was paid to the environment for business as perceived by the small sawmill entrepreneurs, as well as the role of information and ability to use information in the construction of entrepreneurial (partial) space. A two-factor model of entrepreneurs' perceived environments was first examined. The first factor was interpreted as the *perceived conditions for production* (Pe1), and the second as *service oriented perception* (Pe2). As might be expected from their non-commercial sawmilling status, the contracting sawmill entrepreneurs achieved low scores on Pe1. Conversely, the contracting-commercial and commercial sawmill entrepreneurs scored rather highly. As for Pe2, the contracting sawmill entrepreneurs scored rather better than on Pe1, the commercial sawmill entrepreneurs also scoring well. The contracting-commercial sawmill entrepreneurs scored weakly, i.e. they perceived a poor service environment. This was interpreted as an indication that these sawmill entrepreneurs were in discontinuity with their environment, perhaps having reached the limit of their ability, or having developed their firm beyond the tolerance of the local potential and dialectic.

Forming as they do the upper end of the entrepreneurial hierarchy, the (good) performance of the commercial sawmill entrepreneurs in the perceived environment model, was considered to be important not only concerning the interpretation of the results of the model itself, but also in determining the role of the man-environment dialectic. The structural manifestation of the entrepreneur's intendedly rational response to his perceived environment was revealed, i.e. the man-environment dialectic. The more positive his perceptions were, i.e. the more extensive was his partial space, the higher was his level of enterprise.

Next, the empirical analysis in Chapter 6 examined the entrepreneurs' partial space for business in more detail. This was achieved by realizing Pred's behavioural matrix, with its concepts of quantity and quality of information, and the ability to use information. Principal component analysis was employed to realize the behavioural matrix concepts. A three-component solution was considered acceptable for experimental purposes. The first component was considered to reflect the ability concept, whereas the second and third components realized two aspects of information, one concerning administration-related information, the other production-related information. The interpretation of the components was supported theoretically by the firm structure model of Thompson (1967).

The contracting sawmill entrepreneurs scored best on the ability component. This was considered to be at least partly a technical result of the high age of both the entrepreneurs and their firms. As might be expected from the nature of the contracting sawmills, these entrepreneurs scored rather poorly with respect to the information-related components. The contracting-commercial and commercial sawmill entrepreneurs performance on the two information components were in direct relationship to their commercial aspirations, both scoring relatively highly, but with the highest scores being achieved by the commercial sawmill entrepreneurs.

The application of these components to the realization of the behavioural matrix was successful, within the limitations of the material available. A continuum of information and ability reflected the sawmill typological hierarchy fairly closely. The commercial sawmill entrepreneurs were more likely to be located in the lower quadrants of the matrix (more information), and still more likely to be located in the lower-right quadrant (more information/good ability).

Given the preceding empirical results, the realized behavioural matrix was considered to demonstrate the entrepreneurs partial space, i.e. his "entrepreneurial space". The more information the entrepreneur possessed, and the greater his ability, the more extensive his partial space appeared to be.

A terse conclusion might therefore be as follows: with extended partial space comes greater room for manoeuvre, aspirations can be higher without necessarily incurring greater risk. The partial space can therefore be related to the man-environment dialectic. The ability to use information increases the amount of information available, in a dialectic process. In existentialist terms, the entrepreneur is more able to create his own world.

72. An epistemological review of the results

The investigation began by adopting a non- or post-positivist epistemology, as an earlier positivist approach to the study of small sawmill entrepreneurs had proved disappointing. "Humanistic" epistemologies were examined and phenomenological and existentialist approaches to knowledge seemed appropriate as they aimed to make values explicit, and addressed lived experience. The main aim in these approaches is not to explain, rather it is to appreciate the nature of an act. It is therefore pertinent to ask whether the approach has been justified, and the discussion now attempts to answer this question.

The socio-economic space created by the small sawmill entrepreneurs in this investigation is, primarily, a partial space. It is also the basis for a unification. To explain. The personal partial space created by each entrepreneur differs from that created by each other entrepreneurs in detail but not in substance. This tendency has been indicated by the perceive environment model. Thus, while no two entrepreneurs gained identical scores, their perceptions where sufficiently close to form the factors. This is because values are rarely private. They are communicated by language which is learned to deal with the metaphors of reality. Via language and communication, therefore, private partial space becomes a shared partial space, the

life-world of the community, which in turn creates the context and language of the man-environment dialectic. This is the dynamic unity of the phenomenological approach.

On the other hand, in existential terms, the entrepreneur is seen as creating his own world, creating his own partial space for his entrepreneurial activities. Thus, within the limitations set by the environment as perceived, the small-scale entrepreneur is dynamically participating in the man-environment dialectic. He is creating his own reality.

To understand the above argument is to deny a purely positivistic approach to the explanation of human behaviours. In the present investigation, the seemingly sub-optimal locations and performances of small sawmills could not have been explained by objective measures alone; as already noted, such an approach was tried, and failed. The reason for that lack of success was that the motives, life-worlds and the *process* of the man-environment dialectic could not be measured in objective terms. Further, the positivistic epistemology and methodology requires strong assumptions to be made about human behaviours, assumptions which are invariably normative and which do violence to real human behaviours based on real human values. These is, in fact, much evidence for the argument that decisions based on subjective, even irrational, values play a dominant role human actions and behaviours.

A positivistic approach to the investigation would have entailed imposing an *a priori* model of entrepreneurial behaviours in peripheral areas. Such a model, based on normative assumptions, would, for all its apparent rigor, have been a mental construct based on the *investigator's* own imperfect knowledge of reality. The model would therefore have been a projection upon reality of the investigator's own subjective choice of theories, assumptions and values, i.e. at best *objective subjectivity,* at worst *illusory subjectivity,* to follow Wright's terminology (Wright 1947).

While the post-positivistic approach does not avoid such problems, it does recognize their existence and attempts to minimize them. It is (sometimes) better to recognize the irrationality, or rather *intended* rationality, of human beings and thereby give status to the intersubjective values of the observer and the observed.

73. Conclusions and implications

We return now to the *context* of the small sawmills under discussion. Chapter 2 briefly outline the socio-economic environment prevailing in North Karelia, and its recent trends. The picture is not encouraging despite the fact that the large-scale out migration has, at least temporarily, abated. Nonetheless, the "move to the centres" will continue for some time, as it is seemingly encouraged by the "structural change" policy now operating in Finland.

The reality of North Karelia is a province dominated by communes declining in one way or another. With the demographic shift towards the urban-like centres, has followed general socio- economic decline in most of provinces communes. Varmola (1987) identifies several types of declining commune in a nationwide investigation, each type is represented in North Karelia, see section 2.2.1. Thus, given the local nature of much of the small sawmilling industry, the future can be seen to be bleak, for without a marked change in the trends, the peripheral communes, and the peripheral villages in communes, will soon be devoid of an economically active population. The market for small sawmill goods and services will therefore cease. It is therefore pertinent to inquire on what basis the small sawmill entrepreneurs located in scattered settlement areas can possibly perceive "good" environments for business. Where they do, the answer would appear to rest with their sufficing behaviours, and perhaps the abandonment of even intentional rationality. Such an interpretation is supported by the creation of many small enterprises in the province after the closure of a significant employer in the woodworking industry, and the otherwise declining employment situation in the regions forest sector (Eskelinen & Vatanen 1988). In other words, the employment situation does not provide alternatives that would otherwise attract the less successful small firms to close.

Sundin (Sundin & Wiberg 1987, and in personal communication) has argued that the death of old firms is, perhaps, a prerequisite for industrial renewal in a region. That is, it is simply not enough to keep old firms alive, new firms — presumably in new sectors — have to be created to form a dynamic economy. To prevent firms from closing could therefore have a negative effect on a region. The danger with such an argument in the case of a region such as North Karelia is that the physical and social environment of most of the region cannot support such a dynamism. Further, dynamism brings its own instability — many firms, even when support by "start-up" and "venture" grants and loans do not survive more than a few years. In such cases "dynamism" is itself a negative force, depleting a regions confidence and bringing instability.

In the case of the small sawmills of North Karelia, it would seem that the sawmills located in or near "urban-like" centres, who have been demonstrated to possess better attitudes, perceptions, and information, may possess sufficient ability to survive. The local demographic and economic forces are not working against them, at least not for the time being. The part-time, and rurally located contracting, and contracting-commercial sawmills are seemingly in a more critical position. They are most threatened by the current changes in the countryside. This doubtless one reason why the contracting-commercial sawmill entrepreneurs received poor scores on the *service oriented perception* factor (Pe2) in chapter 6.

Finally, it has been argued above that while existential man "makes himself", he is also constrained by his perceptions. His perceptions are delimited by the man-environment dialectic and the creation of individual partial space. Thus, exogenous influences affecting the construction of partial space are of considerable significance in a local development context Detrimental changes in the parameters of "entrepreneurial space" will, in the short-run be tolerated, as sufficing behaviours will absorb the changes by lowering aspirations and "making do". However, once incentives to the entrepreneur (e.g. income, but also subjective values such as status and satisfaction) fall systematically below the level of contributions (e.g. costs, labour input, loss of free time, etc), he will look for alternative locations for his business or even consider a change in profession.

The above process is not automatic, however. The irrationality of man is such that subjective values, such as emotional ties-to-place, for example, must not be underestimated. Indeed, it has been well demonstrated that sense-of-place, and ties-to-place play a fundamental role in human geographies (e.g. Tuan 1976, Pred 1984, Relph 1976, 1981 and Desbarats 1983). While this aspect of human behaviour will not be discussed further at this juncture, there can be no doubt of its significance in the locational acts of real human beings and in the dynamics of local development (or decline) in peripheral regions.

REFERENCES

Alchian, A.A. 1950. Uncertainty, evolution, and economic theory. Journal of Political Economy 58: 211—221.

Alueelliset hyvinvointierot. Sisäasiainministeriön Aluepoliittisia Tutkimuksia ja Selvityksiä 1988: 6.

Atkinson, J.W. 1957. Motivational determinants of risk-taking behavior. Psychological Review, 64(6): 359—372.

Bannister, D. & Mair, J.M. 1968. The Evaluation of Personal Constructs. London: Academic Press.

Barfield, O. 1957. Saving the Appearances. New York: Harcourt Brace Jovanovich.

Berger, P.L. & Luckmann, T. 1967. The Social Construction of Reality: a Treatise in the Sociology of Knowledge. New York: Anchor Books.

Bhaskar, R. 1975. A Realist Theory of Science. Brighton: Harvester Press.

Boden, M.A. 1979. Piaget. London: Fontana.

Brinkmann, M. 1935. Economics of the Farm Business. Berkeley.

Bunting, T.E. & Guelke, L. 1979. Behavioral and perception geography: a critical appraisal. Annals of the Association of American Geographers 69: 448—468.

Butt, R. 1979. On Britain's decline. Encounter (52(3); 43—47.

Buttimer, A. 1974. Values in Geography. Association of American Geographers, Commission on College Geography, Resource Paper 24.

— 1976. Grasping the dynamics of Lifeworld. Annals of the Association of American Geographers 66: 277—291.

— 1978. Charism and context: the challenge of La Géographie Humaine. In: Ley, D. & Samuels, M., 1978. Humanistic Geography. p. 58—76. London: Croom Helm.

— 1979. Erewhon or nowhere land. In: Gale, S. & Olsson, G. (eds.) 1979. Philosophy in Geography. p. 9—38. Dordrecht: Reidel.

Caws, P. 1965. The Philosophy of Science. Princeton.

Cox, K.R. & Golledge, R.G. (eds) 1969. Behavioral Problems in Geography: a Symposium. Northwestern University Studies in Geography No. 17. Evanston, Ill.

Desbarats, J. 1983. Spatial choice and constraints on behavior. Annals of the Association of American Geographers 73: 340—357.
Earl, P. 1983. The Economic Imagination. Brighton: Wheatsheaf Books.
Elffers, H. 1980. On the uninterpretability of factor analysis results. Transaction of the Institute of British Geographers 5(3): 318—329.
Enroth, R-R. 1987. Metsäteollisuustuotteiden kauppa. Helsingin Yliopisto, Puumarkkinatieteen laitos. MS.
Entrikin, J.N. 1976. Contemporary humanism in geography. Annals of the Association of American Geographers 60: 615—632.
Eskelinen, H. & Vatanen, E. 1988. Metsäteollisuuden näkymät Pohjois-Karjalassa. Joensuun Yliopisto, Karjalan Tutkimuslaitoksen Julkaisuja 85.
Fransella, F. & Bannister, B. 1977. A Manual for Repertory Grid Technique. London: Academic Press.
Fredriksson, C.G. & Lindmark, L.G. 1977. Regionalpolitisk eller regional utveckling? Några synpunkter utifrån ett Norrländskt perspektiv. Plan, 6.
— 1979. From Firms to Systems of Firms: A Study of Interregional Dependence in a Dynamic Society. In: Hamilton, F.E.I. & Linge, G.J.R. (eds.). Industrial Systems, Volume 1. Chichester: Wiley.
Gibson, B. 1978. Understanding the subjective meaning of places. In: Ley, D. & Samuels, M. (eds.) 1978. Humanistic Geography. p. 138—154. London: Croom Helm.
Golledge, R.G. 1973. Some issues related to the search for geographical knowledge. Antipode 5 (2), 60—6.
— 1979. Reality, process, and the dialectic relation between man and environment. In: Gale, S. & Olsson, G. (eds.) 1979. Philosophy in Geography. p. 109—120. Dordrecht: Reidel.
Gregory, D. 1981a. Phenomenology. In: Johnston, R. (ed): A Dictionary of Human Geography. Oxford: Blackwell.
— 1981b. Human agency and human geography. Trans. Inst. Brit. Geogr. 6; 1—18.
Grene, M. 1959. Introduction to Existentialism. Chicago: University of Chicago Press.
Guelke, L. 1976. On the philosophy of idealism. Annals of the Association of American Geographers 66: 168—169.
— 1978. Geography and logical positivism. In: Herbert, D.T. & Johnston, R. (eds.) 1978. Geography and the urban environment, Vol.1. p. 35—61. Chichester: Wiley.
Hagen, E.E. 1962. On the Theory of Social Change: How Economic Growth Begins. Homewood.
Hahtola, K. 1971. Faktorianalyysi metsänomistajien käyttäytymistutkimuksissa. Silva Fennica 3: 247—275.
— 1973. The rationale of decision making by forest owners. Acta Forestalia Fennica 130.
Harman, H.H. 1960. Modern Factor Analysis. Chicago.
Harris, C. 1978. The historical mind and the practice of geography. In: Ley, D. & Samuels, M. (eds.) 1978. Humanistic Geography. p. 123—137. London: Croom Helm.
Harvey, D. 1969a. Explanation in Geography. London: Arnold.
— 1969b. Conceptual and measurement problems in the cognitive-behavioural approach to location theory. In: Cox, K.R. & Golledge, R.G. (eds). 1969. 35—67.
— 1974. What kind of geography for what kind of public policy? Transactions of the Institute of British Geographers 63: 18—24.
Hayter, R. & Watts, H.D. 1983. The geography of Enterprise. Progress in Geography 7(2). London: Arnold.
Heidegger, M. 1927. Being and Time. Trans. Macquarrie, J. & Robinson, E. New York: Harper and Row, 1962.
Huttunen, T. 1981. Suomen piensahat 1980. Summary: Small sawmills in Finland, 1880. Folia Forestalia 457.
Håkansson, H. & Johansson, J. 1982. Analys av industriella affärsförbindelser. Att utveckla marknadsföringsstrategin på industriella marknader. MTC 18, Stockholm.
Jackson, P. 1981. Phenomenology and social geography. Area 13: 299—305.
Jaspers, K. 1969. Philosophy, Vol.1. Chicago: University of Chicago Press.
Johnston, R. 1978. Multivariate Statistical Analysis in Geography. London: Longman.
— 1983. Philosophy and Human Geography. London: Arnold.
Järveläinen, V.P. 1971a. Factors influencing silvicultural activity. Communicationes Instituti Forestalis Fenniae 73(2).
— 1971b. Vähäsen faktorianalysista. Silva Fennica 3; 281—290.
— 1988. Hakkumahdollisuuksien käyttöön vaikuttavat tilakohtaiset tekijät maan länsi- ja itäosissa. Folia Forestalia 707.
Karjalainen, E. 1988. Main migration trends in Kainuu, 1980—1985. Paper to the Symposium on the Change from Resource to Knowledge Economy in Northern Scandinavia, Tornio, 18.5 & 19.5.1988.
Katona, G. 1951. Psychological Analysis of Economic Behavior. New York: McGraw-Hill.
Kelly, G.A. 1955. The Psychology of Personal Constructs, Vols. 1 & 2. New York: Norton.
Kendall, M.G. 1957. A Course in Multivariate Analysis. London: Griffin.
King, L.J. 1979. The seventies: disillusionment and consolidation. Annals of the Association of American Geographers 69: 155—157.
Kockelmanns, J.J. 1969. The World in Science and Philosophy. Milwaukee: The Bruce Publishing Co.
Kunnas, H. 1980. Suomen sahateollisuus. Teollistumisrahasto OY, A; 12. Helsinki.
Lawrence, P.R. & Lorsch, J.W. 1967. Organization and Environment: Managing Differentiation and Integration. Boston.
Lazarus, R.S. 1966. Psychological Stress and the Coping Process. New York.
Leff, H.L., Gordon, L.R. and Ferguson, J.G. 1974. Cognitive set and environmental awareness. Environment and Behavior 6(4): 395—447.
Lenneberg, E.H. 1962. The relationship of language to the formation of concepts. Synthese 14: 103—109.
Ley, D. 1977. Social geography and the taken-for-granted world. Transactions of the Institute of British Geographers 2(4): 498—512.
— 1981. Behavioural geography and the philosophies of meaning. In: Cox, K.R. & Gollege, R.G. 1981. Behavioural Problems in Geography Revisited. p. 209—230. London: Methuen.
Ley, D. & Samuels, M. (eds.) 1978. Humanistic Geography. London: Croom Helm.
— 1978b. Introduction: contexts of modern humanism in geography. In Ley, D. & Samuels, M. 1978.
Loikkanen, H.A., Kuuluvainen, J. & Salo, J. 1985. Hintatekijät ja yksityismetsänomistajien ominaisuudet puuntarjontakäyttäytymisen selittäjinä: alustavia tuloksia. Kansantaloudellinen aikakauskirja 1985(2): 189—216.
— 1986. Timber supply of private non-industrial forest owners: evidence from Finland. Research Report 50, Institute of Economics, Helsinki University.
Lowenthal, D. 1961. Geography, experience, and imagination: towards a geographical epistemology. Annals of the Association of American Geographers 51: 241—260.
— (ed.) 1967. Environmental Perception and Behavior. University of Chicago Department of Geography Research Paper 109.
March, J.G. & Simon, H.A. 1958. Organizations. New York.
McGuire, J.W. 1964. Theories of Business Behavior. Englewood Cliffs.
Mercer, D.C. & Powell, J.M. 1972. Phenomenology and related non-positivistic viewpoints in the social sciences. Victoria: Monash University Publications in Geography.
Muir, R. & Paddison, R. 1981. Politics, Geography and Behaviour. London: Methuen.
Myrdal, G. 1957. Economic Theory and Under-developed Regions. London: Duckworth.
Nenonen, T. & Niittykangas, H. 1988. The Possibilities of New Firm Formation in the Rural Areas of Finland. Paper to the Symposium on the Change from Reseaurce to Knowledge Economy in Northern Scandinavia. Tornio, 18.5 & 19.5.1988.
OECD. 1979. Facing the Future. Mastering the Probable and Managing the Unpredictable. Paris.
Ohlin, B. 1933. Interregional and International Trade. Cambridge, Mass.
Palmgren, K. 1964. Kehittyneisyyden alueittaisista eroavuuksista Suomessa. Summary: Regional differences in the degree of development in Finland. Valtakunnan suunnittelutoimiston julkaisusarja A: 15.
Palomäki, M., Granfelt, J. & Palmgren, K. 1967. Suomen keskus- ja vaikutusaluejärjestelmä. Summary: The system pf functional centres and areas in Finland. Valtakunnan suunnittelutoimiston julkaisusarja A: 19.
Pickles, J. 1985. Phenomenology, Science and Geography. Cambridge: Cambridge University Press.
Pred, A. 1967. Behavior and Location: Pt 1. Lund Studies in Geography Series B 27.
— 1969. Behavior and Location: Pt 2. Lund Studies in Geography Series B 28.
— 1984. Places as historically contingent process. Structuration and time-geography of becoming places. Annals of the Association of American Geographers 74: 279—297.
Pöyry Oy. 1981. Pohjois-Karjalan metsäteollisuuden kehittämistutkimus. Helsinki.
Radnitsky, G. 1973. Contemporary Schools of Metascience. Chicago: Gateway Edition.
Ramström, D. 1967. Att studera företag och regioner. SOU 1974(3). Stockholm.
Relph, E. 1970. An inquiry into the relations between phenomenologyu and geography. The Canadian Geographer 14, 193—201.
— 1976. Places and Placelessness. London: Pion.
— 1977. Humanism, phenomenology and geography. Annals of the Association of American Geographers 67, 177—9.
— 1981. Rational Landscapes and Humaniatic Geography. London: Croom Helm.
Riihinen, O. 1965. Teollistuvan yhteiskunnan alueellinen erilaistuneisuus. Summary: Regional differentiation of the industrial society. University of Helsinki, Institute of Social Policy. Repreint Series B: 18.
Riihinen, P. 1963. Metsänhoidon tason vaihtelu Suomen maatilametsäloillä. Summary: Variations in the level of silviculture on the Finnish farm woodlots. Acta Forestalia Fennica 75.
Rogers, E. 1968. Diffusion of Innovations. New York.
Rose, C. 1981. Wilhelm Dilthey's philosophy of historical understanding: a neglected hertitage of contemporary human geography. In: Stoddart, D.R. (ed.) 1981. Geography, Ideology and Social Concern. Oxford: Blackwell.
Saarinen, T.F., Seaman, D. and Sell, J.L. (eds.). 1984. Environmental Perception and Behavior. University of Chicago Department of Geography Research Paper 209.
Samuels, M.S. 1978a. Existentialism and human geography. In: Ley, D. & Samuels, M. 1978. Humanistic Geography. p. 22—40. London: Croom Helm.
— 1978b. Individual and landscape: thoughts of China and the Tao of Mao. In: Ley, D. & Samuels, M. 1978. Humanistic Geography. p. 283—296. London: Croom Helm.
— 1981. An existential geography. In: Harvey, M.E. & Holly, B.P. (eds.) 1981. Themes in Geographical Thought. p. 115—133. London: Croom Helm.
Schütz, A. 1970. Concept and theory formation in the social sciences. In: Emmet, D. & MacIntyre, A. (eds). Sociological theory and philosophical analysis. New York: MacMillan.
Selby, J.A. 1980. Field afforestation in Finland and its regional variations. Communicationes Instituti Forestalis Fenniae 99(1).
— 1981a. Regional Variations in Field Afforestation in Finland. Ph.D. Thesis. Faculty of Science and Engineering, University of London.
— 1981b. Hiearchical levels in spatial analysis. Fennia 160(2): 295—301.
— 1983. Small sawmills in rural Finland. Actes du Seminaire Agriculture et Foret. Nancy.
— 1984. Entrepreneurs in Rural Areas: a humanistic approach to the study of small sawmills in North Karelia, Finland. Metsäntutkimuslaitoksen Tiedonantoja 146. Finnish Forest Research Institute.
— 1985: Entrepreneurs' perceived environments and local development: a case study of small sawmill owners in eastern Finland. In: ó Cearbhaill, D. (ed.) 1986. New Approaches to the Development of Marginal Regions, Vol. 2: The Organization and Development of Local Initiatives. p. 40—77. Galway: University College Galway.
— 1986. Small sawmills: some backward and forward linkages in a local development context. Manuscript. Finnish Forest Research Institute.
— 1987a. On the operationalization of Pred's behavioural matrix. Geografiska Annaler 69B(1): 81—90.
— 1987b. The perception of environmental potential by rural small-scale entrepreneurs. In: Wiberg, U. & Snickars, F. (eds.) 1987. Structural Change in Peripheral and Rural Areas. Swedish Council for Building Research, Document D12: 100—118.
Seppälä, H. 1979. Forestry and regional development project: The province of North Karelia, Finland. Manuscript. Finnish Forest Research Institute.
Shackle, G.L.S. 1961. Decision, Order and Time in Human Affairs. Cambridge: Cambridge University Press.
Siirilä, S. 1984. Spatial structure and social well-being. Fennia 162: 117—126.

Simon, H.A. 1957a. Administrative Behavior. New York.
— 1957 b. Models of Man: Social and Rational. New York: Wiley.
— 1959. Theories of decision-making in economics and behavioural science. American Economic Review 69: 253—283.
Smith, N. 1979. Geography, science and post-positivist modes of explanation. Progress in Human Geography, Vol. 3; 3. London: Arnold.
Spiegelberg, H. 1975. Doing Phenomenology. The Hague: Martinus Nijhoff.
— 1976. The Phenomenological Movement: A Historical Introduction. The Hague: Matinus Nijhoff.
Sundin, E. & Wiberg, U. 1987. The entrepreneurial setting of regional economic renewal. In: Wiberg, U. & Snickars, F. (eds.) 1987. Structural Change in Peripheral and Rural Areas. Swedish Council for Building Research, Document D12: 119—128.
Thompson, J.D. 1967. Organizations in Action: Social Sciences Bases of Administrative Theory. New York.
Thorngren, B. 1970. Hur påverkar kontaksystem den regional utvecklingen. Bilaga 15, SOU 1970(15). Stockholm.
Townsend, J.G. 1977. Perceived worlds of the colonists of tropical rainforests, Colombia. Transactions of the Institute of British Geographers 2(4): 430—458.
Tuan, Y-F. 1974. Space and place: humanistic perspective. Progress in Geography 6: 211—252. London: Arnold.
— 1975. Space and place: humanistic perspective. Progress in Geography 6, 211—52.
— 1977. Space and Place. London: Arnold.
Tönnies, F. 1957. Community and Society. East Lansing.
Törnqvist, G. 1970. Contact systems and regional development. Lund Studies in Geography B; 35.
Ullrich, R.A. 1972. A Theoretical Model of Human Behaviour in Organizations. Morristown, N.J.
Valkonen, T. 1971. Haastattelu- ja kyselyaineiston analyysi sosiaalitutkimuksissa. Helsinki.
Van de Geer, J.P. 1971. Introduction to Multivariate Analysis for the Social Sciences. San Francisco: Freeman.
Vanhanen, H. 1985. Small sawmills in wooded areas — a local development role? Paper to the 9th International Seminar on Marginal Regions, Galway, 1985.
— 1988. Small firms in the periphery: a discussion on the small sawmills of North Karelia. Metsäntutkimuslaitoksen Tiedonantoja 318. Finnish Forest Research Institute.
Varmola, R. 1987. Maaseutukuntien luokittelu. Pellervo-seuran Markkinatutkimuslaitos, Raportteja ja Artikkeleita 10.
Wolpert, J. 1964. The decision process in spatial context. Annals of the Association of American Geographers 54: 537—558.
Wallace, I. 1978. Towards a humanized conception of economic geography. In: Ley, D. & Samuels, M. 1978. Humanistic Geography. p. 91—108. London: Croom Helm.
Wright, J.K. 1947. Terrae incognitae: the place of imagination in geography. Annals of the Association of American Geographers 37: 1—15.
Zelinsky, W. 1975. The Demigod's delemma. Annals of the Association of American Geographers 65: 123—143.

A total of 139 references

SELOSTE

Tutkimus yrittäjyydestä: piensahat Pohjois-Karjalassa

Tässä tutkimuksessa tarkastellaan pienyrittäjien ja heidän sosioekonomisen liiketoimintaympäristönsä välistä vuorovaikutusta. Vuorovaikutuksen tunnistamisessa käytettiin jälkipositivistista lähestymistapaa, joka tässä tutkimuksessa on lähellä eksistentialistista fenomenologiaa. Lähestymistapa kiinnittää huomiota ennemminkin todelliseen inhimilliseen toimintaan kuin teoreettisiin, malliorientoituneisiin oletuksiin. Vastaavasti yrittäjien kokemusmaailma katsottiin päätöksentekoprosessin keskeiseksi tekijäksi. Ihmisen havainnot ja kokemukset hänen elinympäristöstään synnyttävät hänelle itselleen vaillinaisen näkemyksen todellisesta maailmasta. Tätä vaillinaista näkemystä kutsutaan yritysympäristöksi. Tutkimuksessa kiinnitetään huomio juuri tähän yritysympäristöön.

Ensiksi selvitettiin piensahayrittäjien liiketoiminnalliset asenteet. Havaittiin, että voidaan määrittää kaksi selvästi toisistaan erottuvaa luokkaa; yrittäjät, jotka minimoivat riskin ja ovat yleisesti tyytyväisiä, ja yrittäjät, jotka ovat agressiivisesti kilpailevia eivätkä ole tyytyväisiä. Näillä yrittämisasenteilla näytti olevan deterministinen vaikutus yrityksen rakenteeseen eli kun yritykset oli luokiteltu rakenteeltaan kolmeen hierarkiseen luokkaan, vuokrasahoihin, vuokra-kaupallisiin ja kaupallisiin sahoihin, kasvoi yrittäjän tyytyväisyyden asenteen voimistuessa myös todennäköisyys siitä, että yritys pysyi kahdessa alemmassa rakenneluokassa.

Seuraavaksi tutkittiin piensahayrittäjien havaitsemaa liiketoiminnallista ympäristöä. Yrittäjien havaitsemasta ympäristöstä muodostettiin 2-faktorinen malli. Ensimmäinen faktori tulkittiin tuotannollisten olosuhteiden havannoinniksi (Pe1) ja toinen tulkittiin orientoituneeksi palveluhavaintokyvyksi (Pe2). Pe1:n kohdalla vuokrasahaajat saivat alhaisia latauksia, kuten voitiin olettaa heidän ei-kaupallisesta sahaustoiminnan tasostaan. Käänteisesti kaupallis-vuokra- ja kaupalliset piensahayrittäjät saivat tällä faktorilla melko korkeita latauksia. Faktorin Pe2 osalta vuokrasahayrittäjät saivat melko paljon korkeampia latauksia kuin Pe1 kohdalla. Myös kaupalliset piensahayrittäjät saivat tämän faktorin kohdalla melko korkeita latauksia. Kaupallis-vuokrasahaajat saivat melko alhaisia latauksia eli he havaitsivat, että heidän palveluympäristönsä oli huono. Tämä tulkittiin osoitukseksi siitä, että nämä sahayrittäjät ovat ehkä saavuttaneet taitojensa rajat tai ovat kehittäneet yritystään enemmän kuin paikallinen toleranssi on mahdollistanut. Kaupallisten sahayrittäjien osalta oli todettavissa, että mitä myönteisempiä asioita he havaitsivat ympäristöstään eli mitä laajempi oli heidän yrittäjätilansa, sitä korkeammalle hierarkiselle tasolle heidän yrityksensä oli sijoittunut.

Tutkimuksen empiirisessä analyysissä käsiteltiin yrittäjien liiketoiminnallista yrittäjätilaa yksityiskohtaisemmin myös Predin käyttäytymismatriisin avulla, joka sisältää informaation laadun ja määrän käsitteen sekä käsitteen kyvystä käyttää tätä informaatiota. Pääkomponenttianalyysi tuotti kolme komponenttia. Ensimmäisen komponentin katsottiin kuvastavan kykykäsitettä, kun taas toinen ja kolmas komponentti sisälsivät informaatiokäsitteet. Informaatiokäsitteistä toinen koskee yrityksen johtamiseen liittyvää informaatiota ja toinen tuotantotoimintaan liittyvää informaatiota.

Vuokrasahayrittäjät saivat kykykomponentin kohdalla korkeimmat latauksset. Tämän katsottiin olevan ainakin osittain tulos sekä yrittäjien että heidän yritystensä korkeasta iästä. Vuokrasahaajat saivat melko alhaisia latauksia informaatioon liittyvän komponentin kohdalla, kuten vuokrasahauksen olemuksesta osattiin olettaa. Kaupallis-vuokra- ja kaupallisten sahayrittäjien esiintyminen kahden informaatiokomponentin kohdalla oli suoraan verrannollinen heidän kaupallisiin pyrkimyksiinsä. Molemmat sahayrittäjät saivat näiden kahden komponentin kohdalla suhteellisen korkeita latauksia kaupallisten sahayrittäjien saadessa kuitenkin korkeimmat latauksset.

Käyttäytymismatriisia muodostettaessa arvioitiin näiden komponenttien käytön onnistuneen tuloksellisesti, kun otetaan huomioon käytettävissä olleen aineiston rajoitukset. Informaation/kyvyn kokonaisuuden havaittiin kuvastavan melko läheisesti sahan rakennehierarkiaa. Suurin osa kaupallisista sahayrittäjistä sijoittui matriisin alempaan puoliskoon (paljon informaatiota), ja enemmistö heistä sijoittui tämän alemman puoliskon oikeanpuoleiseen lohkoon (paljon informaatiota/ hyvät kyvyt).

Edellisistä analyyseistä voidaan tehdä seuraava johtopäätös: muodostetun käyttäytymismatriisin katsotaan osoittavan yrittäjien osittaistilat eli heidän "yrittämistilansa". Mitä enemmän yrittäjällä on informaatiota ja mitä paremmat ovat hänen kykynsä, sitä laajempi on hänen yrittäjätilansa. Laajempi yrittäjätila tuottaa laajemmat toimintamahdollisuudet, ja yrittäjän pyrkimykset voivat olla korkeammalla ilman, että yrittäjä saattaa itsensä suurempaan vaaraan. Yrittäjätila kuvastaa jälleen ihmisen ja hänen elinympäristönsä vuorovaikutusta. Kyky käyttää informaatiota todennäköisesti lisää informaation määrää vuorovaikutusten tapahtumasarjassa.

Monen maaseudun kunnan köyhä ja rappeutuva sosioekonomia ja demografinen rakenne määrää epäilemättä tulevaisuudessa syrjäseutujen elinkelpoisuuden Pohjois-Karjalassa. Kuntien sisäisen muuttoliikkeen malli ja sosioekonomisen rakennemuutoksen paineet suosivat kaupunkimaiseen tyyliin hallittavia kyliä ja kuntia lähellä kaupunkia. Väistämätön tulos tästä suuntauksesta tulee olemaan piensahatuotteiden ja -palvelujen kysynnän väheneminen. Vain niillä piensahoilla, jotka sijaitsevat lähellä kaupunkimaisia keskuksia, näyttäisi olevan tulevaisuuden mahdollisuuksia.

APPENDIX A: Varmola's extended factor analysis (Varmola 1987; 10)

Varimax factor model:

Variable	Factor1	Factor2	Factor3	Factor4	Factor5
AGWAGE	0.89	0.04	0.10	-0.03	0.26
FLDPROP	0.80	0.20	-0.10	-0.01	-0.34
AGDBT	0.78	-0.05	0.14	0.01	-0.04
SLTRINC	0.64	0.01	-0.29	0.06	-0.40
EAP	0.54	0.52	-0.21	0.07	0.00
DISAB	-0.52	-0.49	0.37	0.22	0.00
JOBLES	-0.73	-0.06	0.25	0.22	-0.15
POPCHNG	0.02	0.89	-0.03	-0.18	-0.03
MANSHARE	0.13	0.78	-0.13	0.01	-0.08
TAXDEG	0.29	0.70	-0.35	0.16	0.35
POPDEN	0.14	0.65	-0.21	0.33	0.14
OLDSHARE	0.37	-0.75	-0.34	0.04	0.20
MLKINC	0.02	-0.15	0.89	0.09	0.15
SHIFTWK	-0.03	-0.14	0.07	0.91	0.01
SERVPT	-0.16	0.52	0.11	0.69	-0.04
FRSTINC	-0.13	-0.06	0.16	0.06	0.75
FMCHNG	-0.29	-0.14	0.46	0.19	-0.58
	3.92	3.76	1.70	1.63	1.47

Total variance explained = 73.7 % n = 425.

Factor interpretation:
Factor 1 Agriculture dominated commune
Factor 2 General level of development
Factor 3 Dairy dominated commune
Factor 4 Work-place self-sufficiency
Factor 5 Forest dominated commune

Where:

AGWAGE Farmer's wage-income per farm, FIM, 1983
FLDPROP Proportion of land area under fields, %, 1983
AGDBT Average agricultural debt per farm, FIM, 1983
SLTRINC Average gross income from slaughtering per farm, FIM, 1983
EAP Economically active population, %, 1980
DISPROP Proportion of the population disabled, %, 1984
JOBLES Average unemployment 1981—1984, %
POPCHGE Population change 1960—1980 (1960 = 100)
MANSHARE Proportion of economically active population engaged in manufacturing, % 1980
TAXDEG Taxation rate per inhabitant, FIM, 1982
POPDEN Population density, inh/km^2, 1983
OLDSHARE Proportion of the population over 65 years old, %, 1984
MLKINC Average fross income from milk per farm, FIM, 1983
SHIFTWK Day-shift/night-shift work ratio, 1980.
SERVPT Number of service outlets, 1985
FRSTINC Average income from forests per farm, FIM, 1983
FMCHNG Change in the number of farms, 1959—1980 (1959 = 100)

Grouping analysis:

Group	Number of communes		Group means by factors				
	Whole Country	North Karelia	1	2	3	4	5
Urban-like communes	34	1	0.1	1.5	-0.5	1.5	0.6
Growing industrial communes	48	1	-0.0	1.4	-0.1	-1.6	0.0
Intensive agriculture communes	63	0	1.1	-0.2	-0.7	0.0	-1.1
Strong dairying communes	82	4	0.5	-0.1	1.2	0.0	0.1
Primary production communes in decline	105	9	-0.9	-0.1	0.2	0.3	-0.5
Communes in general decline	93	4	-0.1	-0.7	-0.5	-0.2	0.9

APPENDIX B: Varmola's restricted factor model (Varmola 1987; 14)

Varimax factor model:

Variable	Factor1	Factor2	Factor3	Factor4	Factor5
MANSHARE	0.86	0.16	0.16	-0.05	0.15
POPCHGE	0.82	0.23	0.03	-0.11	0.15
TAXDEG	0.56	0.36	0.33	-0.10	0.36
SERVPT	0.17	0.91	-0.10	0.10	0.03
POPNR	0.28	0.89	0.00	-0.14	0.04
FLDAR	0.21	0.00	0.92	-0.02	0.06
JOBLES	-0.01	0.16	-0.71	0.46	-0.25
CENDIST	-0.15	-0.05	-0.15	0.94	-0.04
AGWAGE	0.29	0.04	0.16	-0.06	0.92
	1.98	1.87	1.54	1.18	1.09

Total variance explained = 85.3 % n = 425.

Factor interpretation:
Factor 1 — Industrialized development
Factor 2 — Service sector oriented development
Factor 3 — Extensive agriculture
Factor 4 — Peripheral commune
Factor 5 — Supplementary income from agriculture

Where:

MANSHARE Proportion of economically active population engaged in manufacturing, % 1980
POPCHGE Population change 1960—1980 (1960 = 100)
TAXDEG Taxation rate per inhabitant, FIM, 1982
SERVPT Number of service outlets, 1985
POPNR Population, 1984
FLDAR Average field area per farm, ha, 1983
JOBLES Average unemployment 1981—1984, %
CENDIST Distance to regional centre, km
AGWAGE Farmer's wage-income per farm, FIM, 1983

Grouping analysis:

Group	Number of communes		Group means by factors				
	Whole Country	North Karelia	1	2	3	4	5
Supp.income dominated agricultural commune	15	0	-1.2	-0.5	-0.2	-0.4	2.8
Industrialized communes	49	1	1.8	-0.5	-0.3	-0.3	0.1
Agriculture dominated commune	73	0	-0.0	-0.3	1.4	0.2	-0.2
Urban-like commune	9	1	0.1	4.3	0.0	-0.9	0.2
Declining commune	158	13	-0.5	-0.2	-0.3	-0.4	-0.3
High service level commune	68	1	0.3	0.7	0.2	-0.1	0.6
Peripheral commune	53	3	-0.1	0.2	-0.7	1.7	-0.3

APPENDIX C: Variables for the attitude model (Chapter 5)

Statistics

	mean	std.dev.	min	max
INPLN	1.35	0.48	1	2
MKTRG	3.13	0.85	1	4
SATDG	3.68	0.59	2	4
LVPOR	3.19	1.50	1	5
MNVAL	3.89	1.31	1	5
SAFLF	4.44	0.88	1	5
RSKTK	3.87	1.17	1	5
WKGO	3.46	1.45	1	5
DOTRY	4.43	0.87	2	5
OWNRS	3.16	1.48	1	5
ELBOW	3.06	1.38	1	5
PROSL	3.22	1.24	1	5
OWNXP	3.95	1.11	1	5
URBLF	2.22	1.20	1	5
GSCHG	3.57	1.03	1	5
LNDOW	3.67	1.30	1	5

Where:

INPLN Are investments planned? (D)
MKTRG Marketing/activity range
SATDG Degree of personal satisfaction
LVPOR It is better to live poorly on one's own resources than to contract debts
MNVAL Money only has value if it earned by hard work
SAFLF A moderate by safe living is of more value than a high position and salary
RSKTK Many times in life it is worth taking risks
WKGO It is natural that the weaklings perish
DOTRY Nowadays it is worth everyone to strive for better conditions in life
OWNRS It is a shame if one cannot depend upon one's own resources
ELBOW Regretably, every one has to "elbow" to succeed in life
PROSL It is a mistake to choose one's profession on the basis of money
OWNXP It is better to trust one's experience than the views of, e.g. scientists, which are constantly changing
GSCHG It is a good think that society changes as the changes are usually for the better
LNDOW Landowning is the safest guarantee of security and independence

CORRELATION MATRIX

	INPLN	MKTRG	SATDEG	LVPOR	MNVAL	SAFLF	RSKTK	WKGO	DOTRY	OWNRS	ELBOW	PROSL	OWNXP	URBLF	GSCHG	LNDOW
INPLN	1.00															
MKTRG	0.09	1.00														
SATDG	-0.00	-0.30	1.00													
LVPOR	-0.29	-0.23	0.11	1.00												
MNVAL	-0.24	-0.30	0.10	0.31	1.00											
SAFLF	-0.22	-0.16	-0.07	0.35	0.14	1.00										
RSKTK	0.14	0.18	-0.11	-0.32	-0.10	-0.10	1.00									
WKGO	-0.00	-0.06	-0.22	0.12	0.07	0.03	0.10	1.00								
DOTRY	0.06	-0.18	-0.04	0.08	0.09	0.13	0.02	0.08	1.00							
OWNRS	-0.03	-0.00	-0.18	0.07	0.01	0.09	0.08	0.28	0.08	1.00						
ELBOW	-0.13	0.07	-0.27	-0.01	-0.05	-0.12	-0.04	0.28	-0.09	0.14	1.00					
PROSL	0.11	-0.04	0.08	0.12	0.01	0.12	-0.06	0.05	-0.06	0.04	0.06	1.00				
OWNXP	0.21	-0.04	-0.05	0.15	0.25	0.15	-0.04	0.16	0.29	0.20	-0.14	-0.12	1.00			
URBLF	-0.30	-0.12	-0.15	0.07	0.16	0.04	-0.21	0.07	-0.09	0.21	0.09	0.05	-0.09	1.00		
GSCHG	-0.08	0.01	0.01	0.03	-0.18	0.11	0.03	0.01	0.06	0.11	-0.04	0.20	-0.20	0.09	1.00	
LNDOW	-0.10	-0.09	-0.12	0.03	0.24	0.03	0.09	0.39	0.23	0.39	0.10	-0.00	0.22	0.11	0.10	1.00

Factor scores

Case & Sawmill type		Factor B1	Factor B2	Case & sawmill type		Factor B1	Factor B2
1	ctr	1.67	0.26	33	cc	-0.18	-0.07
2	cc	0.41	-0.15	34	ctr	-0.60	-0.31
3	ctr	1.40	-0.13	35	ctr	-0.64	-0.71
4	com	-0.66	-0.94	36	cc	0.72	-1.34
5	ctr	0.66	1.47	37	cc	-0.47	0.03
6	com	0.35	-0.41	38	cc	-1.37	-0.18
7	ctr	0.94	0.85	39	ctr	-0.53	0.17
8	cc	-0.15	0.65	40	ctr	0.86	-1.14
9	ctr	1.31	0.35	41	ctr	-0.41	-0.11
10	com	-0.11	-0.13	42	ctr	-0.87	-1.60
11	cc	0.25	0.90	43	cc	-0.98	0.56
12	ctr	-0.33	0.38	44	com	-0.23	0.82
13	cc	-0.31	-0.18	45	ctr	0.22	0.45
14	cc	-0.40	-0.77	46	ctr	-1.34	1.27
15	com	-0.31	-0.57	47	com	-1.82	-0.03
16	com	-1.37	-1.92	48	ctr	-1.17	-0.04
17	ctr	-0.37	0.29	49	ctr	0.90	1.16
18	com	-1.12	1.56	50	com	-0.68	-1.49
19	ctr	0.14	-0.54	51	cc	0.27	0.79
20	ctr	0.01	0.28	52	cc	0.58	-0.67
21	ctr	0.59	0.98	54	ctr	0.20	-0.47
22	ctr	0.02	0.14	55	com	-1.26	0.65
23	ctr	1.04	-1.19	56	com	-0.32	1.53
24	ctr	0.42	-0.28	57	cc	0.39	-0.95
25	ctr	1.07	0.51	58	ctr	-0.23	-0.37
26	ctr	0.66	0.16	59	com	0.14	-0.40
27	ctr	1.38	0.60	60	ctr	0.34	-1.85
28	ctr	0.50	0.02	61	ctr	1.24	0.57
29	cc	0.37	-1.18	62	ctr	-1.25	-0.41
30	ctr	0.72	0.11	63	ctr	-0.44	0.49
31	com	0.00	0.81	64	com	-1.35	1.29
32	ctr	1.48	0.46				

Where:

Factor B1 (SUFFIC): Low risk sufficer
Factor B2 (COMPIND): Competitive independence

ctr = Contracting sawmills
cc = Contracting-commercial sawmill
com = Commercial sawmill

APPENDIX D: Variables for the percieved environment for business model (Chapter 6)

Statistics

Variable	Mean	S.D.	Min	Max
SMLOC	1.21	0.41	1	2
URBDI	12.65	9.28	1	40
RMSUP	3.83	0.94	2	5
TRANS	3.65	1.05	1	5
MKTAC	3.56	0.88	2	5
SRVSU	3.48	0.96	1	5
BSCLM	3.65	0.79	3	5
PWRSU	3.75	0.97	2	5
LABSU	3.75	1.00	1	5

Where:

(BSCLM) Perceived business climate
(PWRSU) Perceived reliablity of power supply
(RMSUP) Perceived availability of raw materials
(LABSU) Perceived availability of labour
(SMLOC) Location, by settlement type
(URBDI) Distance to nearest urban centre
(MKTAC) Perceived access to markets
(TRANS) Perceived availability of transport

CORRELATION MATRIX

	SMLOC	URBDI	RMSUP	TRANS	MKTAC	SRVSU	BSCLM	PWRSU	LABSU
SMLOC	1.00								
URBDI	-0.48	1.00							
RMSUP	0.10	0.14	1.00						
TRANS	0.28	-0.25	0.23	1.00					
MKTAC	0.31	-0.41	0.20	0.53	1.00				
SRVSU	0.57	-0.29	0.07	0.42	0.39	1.00			
BSCLM	0.23	-0.11	0.50	0.34	0.47	0.43	1.00		
PWRSU	0.26	-0.13	0.52	0.18	0.30	0.25	0.65	1.00	
LABSU	0.25	-0.19	0.47	0.33	0.27	0.28	0.67	0.57	1.00

Factor scores

Case & sawmill type		Factor I	Factor II	Case & sawmill type		Factor I	Factor II
1	ctr	-0.89	-0.32	34	ctr	-1.25	1.99
2	cc	0.33	-1.53	35	ctr	-0.84	-0.07
3	ctr	-0.89	-0.32	36	cc	-0.19	0.11
4	com	0.74	1.44	37	cc	0.96	-0.74
5	ctr	-1.02	0.11	38	cc	1.03	-0.53
6	com	0.76	-0.50	39	ctr	-0.89	0.12
7	ctr	-0.21	0.35	40	ctr	-0.11	-0.85
8	cc	1.30	-0.95	41	ctr	0.65	0.16
9	ctr	-0.88	-0.34	42	ctr	-0.82	-0.75
10	com	0.65	-0.36	43	cc	0.71	0.91
11	cc	1.07	-0.59	44	com	1.38	1.31
12	ctr	-1.18	1.49	45	ctr	-0.84	-0.46
13	cc	0.24	0.42	46	ctr	-0.74	-0.53
14	cc	0.14	-1.08	47	com	1.50	0.40
15	com	1.58	0.45	48	ctr	-1.02	0.86
16	com	0.55	1.90	49	ctr	-0.95	-0.14
17	ctr	1.32	1.72	50	com	1.38	0.57
18	com	0.51	0.84	51	cc	-0.40	-1.10
19	ctr	-0.15	-0.96	52	cc	0.01	-1.56
20	ctr	-0.94	-0.17	54	ctr	-0.87	-0.14
21	ctr	-0.64	-1.05	55	com	0.55	0.01
22	ctr	-0.20	-1.04	56	com	0.31	0.46
23	ctr	-0.89	-0.32	57	cc	1.67	0.18
24	ctr	-0.86	-0.40	58	ctr	-0.73	-0.79
25	ctr	-0.97	-0.08	59	com	1.41	0.09
26	ctr	-1.09	0.65	60	ctr	-0.81	-0.55
27	ctr	-0.81	-0.55	61	ctr	0.30	0.46
28	ctr	-0.92	-0.23	62	ctr	-1.24	1.96
29	cc	1.00	0.41	63	ctr	-0.65	0.53
30	ctr	0.18	-0.64	64	com	1.32	1.72
31	com	1.06	-0.23				
32	ctr	-0.78	-0.64				
33	cc	1.06	-1.16				

Where:

Factor I: Perceived conditions for production
Factor II: Service oriented perception

ctr = Contracting sawmill
cc = Contracting-commercial sawmill
com = Commercial sawmill

APPENDIX E: Variables for the realization of Pred's behavioural matrix

Statistics

Variable	Mean	S.D.	Min	Max
ENAGE	44.49	10.07	22	63
EDLEV	1.52	0.96	1	4
MANLG	14.21	10.75	1	36
ENTEX	1.67	0.48	1	2
PROEX	1.78	0.61	1	3
INFAT	1.16	0.37	1	2
ADINF	3.30	1.17	1	6
RMINF	3.27	0.99	1	6
PDINF	3.46	1.09	1	6
MKINF	3.57	1.17	1	6
OTINF	2.97	0.25	1	3
PROAF	1.49	1.13	0	4
MKRNG	3.13	0.85	1	4

Where:

ENAGE Age of the entrepreneur
EDLEV Level of education
MANLG Length of management of present enterprise
ENTEX Previous entrepreneurial experience
PROEX Previous professional experience
INFAT Attitude to information seeking
ADINF Primary interest in seeking administration information
RMINF Primary interest in seeking information of raw material supply
PDINF Primary interest in seeking information on product development
MKINF Primary interest in seeking information on product marketing
OTINF Primary interest in seeking information on other (unspecified) fields
PROAF Number of professional affiliations
MKRNG Marketing or activity area

CORRELATION MATRIX

	ENAGE	EDLEV	MANLG	ENTEX	PROEX	INFAT	ADINF	RMINF	PDINF	MKINF	OTINF	PROAF	MKRNG
ENAGE	1.00												
EDLEV	-0.39	1.00											
MANLG	0.68	-0.29	1.00										
ENTEX	0.40	-0.35	0.23	1.00									
PROEX	0.31	-0.21	0.07	0.47	1.00								
INFAT	-0.14	0.31	-0.21	-0.34	-0.06	1.00							
ADINF	-0.15	0.19	-0.23	-0.19	-0.22	0.45	1.00						
RMINF	-0.07	-0.12	0.08	-0.15	-0.01	-0.16	-0.46	1.00					
PDINF	-0.23	0.30	-0.46	-0.07	0.18	0.22	-0.16	0.09	1.00				
MKINF	0.03	0.09	-0.11	-0.14	-0.07	0.20	0.01	0.00	0.20	1.00			
OTINF	0.20	-0.20	0.11	0.18	0.16	-0.29	-0.29	0.29	0.05	-0.16	1.00		
PROAF	0.04	0.01	0.03	0.04	0.14	0.16	0.28	-0.29	-0.03	0.20	-0.06	1.00	
MKRNG	-0.03	0.09	-0.06	-0.05	0.06	0.35	0.19	0.06	0.04	0.25	0.02	0.22	1.00

Component scores

Case & sawmill type		Component I	Component II	Component III	Case & sawmill		Component I	Component II	Component III
1	ctr	-0.73	-0.10	-2.26	33	cc	0.34	-0.91	1.25
2	cc	0.52	-0.29	-0.08	34	ctr	0.19	0.53	-1.14
3	ctr	0.75	-0.07	-0.45	35	ctr	-0.43	0.10	-0.07
4	com	-1.79	0.82	0.45	36	cc	-1.46	-1.67	-1.19
5	ctr	0.66	-0.14	-0.27	37	cc	-1.27	-1.94	1.29
6	com	-0.42	1.34	-0.13	38	cc	-0.07	0.91	0.69
7	ctr	0.27	0.03	-0.27	39	ctr	-0.36	-0.71	-1.42
8	cc	-0.87	1.31	-0.24	40	ctr	1.13	-0.24	0.92
9	ctr	0.80	-0.04	-0.48	41	ctr	0.32	-0.00	0.08
10	com	-2.06	-0.04	1.75	42	ctr	0.59	-0.08	-0.04
11	cc	0.96	-0.12	1.90	43	cc	0.73	-1.09	2.14
12	ctr	-1.00	-0.11	-1.44	44	com	-1.35	1.57	-0.05
13	cc	0.39	-1.85	0.11	45	ctr	1.25	0.10	-0.58
14	cc	0.66	0.07	0.24	46	ctr	0.07	-0.26	0.10
15	com	-0.10	0.28	-0.17	47	com	-1.32	2.39	0.89
16	com	-1.79	-1.72	1.04	48	ctr	-1.08	0.11	-0.81
17	ctr	0.56	0.35	-0.77	49	ctr	1.65	0.49	-0.14
18	com	0.41	-0.39	3.19	50	com	-2.15	4.22	-0.12
19	ctr	0.41	0.10	-0.46	51	cc	-0.96	0.10	1.25
20	ctr	1.22	0.16	1.27	52	cc	0.51	-0.36	-1.35
21	ctr	1.18	0.07	-0.55	54	ctr	1.29	0.42	0.29
22	ctr	-0.15	-0.14	-0.44	55	com	1.12	0.99	1.22
23	ctr	0.31	-0.14	-0.37	56	com	1.06	0.35	0.23
24	ctr	-0.55	0.58	-1.11	57	cc	-0.15	-1.61	0.35
25	ctr	0.96	-0.20	-1.54	58	ctr	0.72	-0.24	-0.60
26	ctr	1.35	0.12	-0.56	59	com	0.68	1.58	1.83
27	ctr	0.88	0.17	-0.22	60	ctr	0.32	-0.23	-0.25
28	ctr	0.62	-0.24	-0.17	61	ctr	-0.24	-0.29	-0.41
29	cc	-0.87	-0.30	0.67	62	ctr	-0.78	-0.15	-0.44
30	ctr	0.53	-0.32	-1.00	63	ctr	-1.64	-0.93	0.77
31	com	-2.53	-2.41	-0.65	64	com	0.49	0.33	-1.05
32	ctr	0.25	-0.28	-0.64					

Where:

Component I: Entrepreneurial experience
Component II: Administrative-information seeking
Component III: Production-information seeking

ctr = Contracting sawmill
cc = Contracting-commercial sawmill
com = Commercial sawmill

Instructions to authors — Ohjeita kirjoittajille

Submission of manuscripts

Manuscripts should be sent to the editors of the Society of Forestry as three full, completely finished copies, including copies of all figures and tables. Original material should not be sent at this stage.

The editor-in-chief will forward the manuscript to referees for examination. The author must take into account any revision suggested by the referees or the editorial board. Revision should be made within a year from the return of the manuscript. If the author finds the suggested changes unacceptable, he can inform the editor-in-chief of his differing opinion, so that the matter may be reconsidered if necessary.

Decision whether to publish the manuscript will be made by the editorial board within three months after the editors have received the revised manuscript.

Following final acceptance, no fundamental changes may be made to the manuscript without the permission of the editor-in-chief. Major changes will necessitate a new submission for acceptance.

The author is responsible for the scientific content and linguistic standard of the manuscript. The author may not have the manuscript published elsewhere without the permission of the publishers of Acta Forestalia Fennica. The series accepts only manuscripts that have not earlier been published.

The author should forward the final manuscript and original figures to the editors within two months from acceptance. The text is best submitted on a floppy disc, together with a printout. The covering letter must clearly state the manuscript is the final version, ready for printing.

Form and style

For matters of form and style, authors are referred to the full instructions available from the editors.

Käsikirjoitusten hyväksyminen

Metsäntutkimuslaitoksesta lähtöisin olevien käsikirjoitusten hyväksymismenettelystä on ohjeet Metsäntutkimuslaitoksen julkaisuohjesäännössä.

Muista käsikirjoituksista lähetetään Suomen Metsätieteellisen Seuran toimitukselle kolme täydellistä, viimeisteltyä kopiota, joihin sisältyvät myös kopiot kaikista kuvista ja taulukoista. Originaaliaineistoa ei tässä vaiheessa lähetetä.

Vastaava toimittaja lähettää käsikirjoituksen valitsemilleen ennakkotarkastajille. Tekijän on otettava huomioon ennakkotarkastajien ja toimituskunnan korjausesitykset. Korjaukset on tehtävä vuoden kuluessa siitä, kun käsikirjoitus on palautettu tekijälle. Jos tekijä ei voi hyväksyä korjausesityksiä, hänen on ilmoitettava eriävä mielipiteensä vastaavalle toimittajalle tai toimituskunnalle, joka tarvittaessa ottaa asian uudelleen käsittelyyn.

Acta Forestalia Fennican toimituskunta päättää kirjoituksen julkaisemisesta ennakkotarkastajien lausuntojen ja muiden ilmenneiden seikkojen perusteella. Päätös tehdään kolmen kuukauden kuluessa siitä, kun käsikirjoituksen lopullinen korjattu versio on saapunut toimitukselle.

Hyväksymisen jälkeen käsikirjoitukseen ei saa tehdä olennaisia muutoksia ilman vastaavan toimittajan lupaa. Suuret muutokset edellyttävät uutta hyväksymistä.

Tekijä vastaa kirjoituksen tieteellisestä asiasisällöstä ja kieliasusta. Tekijä ei saa julkaista kirjoitusta muualla ilman Acta Forestalia Fennican julkaisijoiden suostumusta. Acta Forestalia Fennicaan hyväksytään vain aiemmin julkaisemattomia kirjoituksia.

Tekijän tulee antaa lopullinen käsikirjoitus ja kuvaoriginaalit toimitukselle kahden kuukauden kuluessa hyväksymispäätöksestä. Käsikirjoituksen saatteesta pitää selvästi ilmetä, että käsikirjoitus on lopullinen, painoon tarkoitettu kappale. Teksti otetaan mieluiten vastaan mikrotietokoneen levykkeellä, jonka lisäksi tarvitaan paperituloste.

Käsikirjoitusten ulkoasu

Käsikirjoitusten asun tulee noudattaa sarjan kirjoitusohjeita, joita saa toimituksesta.

1989

205 **Selby, J. Ashley.** An exploratory investigation of entrepreneurial space: the case of small sawmills, North Karelia, Finland. Seloste: Tutkimus yrittäjyydestä: piensahat Pohjois-Karjalassa.

206 **Atipanumpai, Ladawan.** *Acacia mangium:* Studies on the genetic variation in ecological and physiological characteristics of a fast-growing plantation tree species. Tiivistelmä: *Acacia mangium:* tutkimuksia nopeakasvuisen viljelypuulajin ekologisten ja fysiologisten tunnusten geneettisestä vaihtelusta.

207 **Hakkila, Pentti.** Logging in Finland. Tiivistelmä: Puunkorjuu Suomessa.

208 **Finér, Leena.** Biomass and nutrient cycle in fertilized and unfertilized pine, mixed birch-pine and spruce stands on a drained peatland. Seloste: Biomassa ja ravinteiden kierto ojitusalueen lannoitetussa ja lannoittamattomassa männikössä, koivu-mäntysekametsikössä ja kuusikossa.

ISBN 951-40-1067-1
ISSN 0001-5636