

Pen, Cees-Jan

Conference Paper

Improving the behavioural location theory

39th Congress of the European Regional Science Association: "Regional Cohesion and Competitiveness in 21st Century Europe", August 23 - 27, 1999, Dublin, Ireland

Provided in Cooperation with:

European Regional Science Association (ERSA)

Suggested Citation: Pen, Cees-Jan (1999) : Improving the behavioural location theory, 39th Congress of the European Regional Science Association: "Regional Cohesion and Competitiveness in 21st Century Europe", August 23 - 27, 1999, Dublin, Ireland, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/114272>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Draft version June 30, 1999

**Faculty Of
Spatial Sciences**

PO Box 800

9700 AV Groningen

The Netherlands

Tel + 31 50 363 38 85

Fax + 31 50 363 39 01

E-mail: **Error! Bookmark not defined.**

Improving the behavioural location theory;

Preliminary results of a written questionnaire about strategic
decision-making on firm relocations

by

Cees-Jan Pen

University of Groningen

European RSA congress

Regional Cohesion and Competitiveness in 21st Century Europe

Dublin, 23-27 August 1999

1 Introduction

A behavioural perspective

Location choices of manufacturing and office firms are a well-known research area within economic geography. It is generally accepted that these location choices are most clearly observable during a firm migration process. Ebels (1997, page 14) defines firm migration as “a process of adjustment, whereby one location is substituted for another in order to better satisfy the needs and desires of each intended migrant”. In this paper and the related dissertation, we are interested in the so-called integral migrations, which means that the whole establishment moves from one location to another location.

In general within economic geography, neo-classical, behavioural, and institutional location theories are used to explain firm migration. In an earlier paper, Pen and Pellenbarg (1999) argue that we should use a behavioural perspective when studying decision-making processes and the influence of decision-makers regarding location choices¹. The publications of authors such as Townroe (1971), Pred (1967, 1969), Keeble (1977), North (1974), Cooper (1975), and Stafford (1969) in the seventies play a fundamental role within the development of behavioural economic geography. We connect with the English (for example Keeble, Townroe, Cooper) and related West European (for example Pred, Pellenbarg, Bade, Soderman) behavioural economic geography for three reasons.

(1) The used deductive approach, opposite to the inductive American approach, fits well into the Dutch geographical research tradition (see also Lambooy et. al., 1997) and the aims of my dissertation.

(2) The comparable geographical scale in Western Europe is different from the scale in the United States.

(3) American behavioural economic geographers are more spatial analysts, who focus on quantitative research concerning firm dynamics and have little attention for decision-making processes.

Defining the behavioural location theory

Hayter (1997, page 137) points out that “the behavioural location theory assumes that location choice is part of a strategic or long-term investment decision, which is complex, uncertain, inherently subjective, and conducted by individuals or groups of decision

¹ The publication ‘Behavioral theory of the firm’ of Cyert and March (1961) was the most pioneering work within the behavioural school.

makers, who do not have the capabilities of the ‘*Homo economicus*’”. Key elements of this theory are its emphasis on internal and external decision-makers and the analysis of the decision-making process concerning the relocation of individual firms.

This paper focuses on constructing a questionnaire to analyse this decision-making process. We elaborate on the conclusion of Hayter (1997), who stresses that the question of location choice in practice is an integrated part of an investment decision making process, which also involves choices in many other respects, including plant size and technology, employment, financing, management, marketing and distribution, engineering, and construction. This complex process can be simplified by distinguishing certain decision-making phases. The problem, however, is the question how many phases a strategic decision consists of (see section 4).

The main problem of the behavioural location theory is that the firm is regarded as a so-called ‘black box’. Dicken and Lloyd (1990, page 268) describe the ‘black box’ as “a component of a system, whose structure we know nothing about. Its behaviour is inferred from its input and output characteristics alone... we were following a long-established convention in economic geography: that the geographer’s interest stops at the factory gate”. It is curious that one of the leading behavioural economic geographers Townroe (1971, pages 6-7) stresses that “the principal impetus for change in the demand for space will come internally from the enterprise under consideration...the principal impetus to movement comes from the need to expand output”. Besides, De Pater and Van der Wusten (1996) argue that most behavioural geographical studies are descriptive and have an inventory character. For example hundreds of inquiries were executed regarding motives, which are underlying location decisions². Within economic geography, Katona and Morgan (1952) were the first to analyse location factors in a representative and methodological consistent manner. They recommend that location factors can best be traced with the help of the so-called sample survey method and by interviewing entrepreneurs. My PhD research, therefore, consists of these two empirical methods.

This paper only focuses on explaining the questions in the questionnaire related to the survey method. The problem, however, is that these survey studies so far have a small contribution to theoretical improvements of the behavioural location theory. Hayter (1997, page 159) concludes that that “little direct assessment of satisficing theory in studies of industrial location choice were made, although comments are offered from time to time”. Finally, Stafford already in 1969 points out that “the key to understanding industrial locations is to understand and analyse the decision-making process and its consequences....At present very little is known about the location decision, notwithstanding the lists of the major location factors....they only asked: why here?” We argue that preceding lead to one conclusion: we should develop questions about firm migration, which clarifies the decision-making process and open the ‘black box’.

² The first publication concerning the questioning of firm migration motives was the classical work ‘Why industry moves south’ by McLaughlin and Robock (1949). They also stress the importance of personal factors when studying firm migration, but argue that its is sometimes said that many plants are irrationally located according to the whims of company executives or their wives. None of the new plants included in this study in 1949 can be that simply explained.

Revitalisation of the behavioural location theory in the nineties

In 1991, Townroe published an article about 'the rationality of industrial location decision'. This article heralds the period of the so-called revitalisation of behavioural geography in the 1990s. Besides opening the firm as a 'black box', one of the main challenges within economic geography in the future will be the integration of the demography of firm approach and behavioural economic geography. Until now the demography of firms focuses on explaining and modelling deviating growth figures between regions with the help of concepts such as innovation, clustering, and learning processes³.

Van Dijk, Pellenbarg and Van Steen (1998) argue that relating the five firm demographic (birth, growth, decline, death, and migration) components with location decisions and decision-making will also improve the behavioural location theory. This prevents conclusions such as: "previous research on plant closures has little to say on the closure decision itself....we know very little about the number of factors considered in each decision or their relative importance within a specific decision...we also know little about the influence of the level at which the decision is taken (Kirkham and Watts, 1998, page 1565).

Finally, Townroe (1971) enumerates four future research areas, which should be analysed in behavioural research.

- (1) The decision-making process regarding location choice. Soderman (1975) adds that further study must be made of the variables and factors affecting behaviour in location choice situations.
- (2) Identifying the goals and means of concerned actors and the relation between personal and firm goals.
- (3) Analysing the financial problems of firms during and after the migration.
- (4) Unravelling the duration of location choice processes and the relationship with the economic conjuncture.

We argue that these four areas are still relevant nowadays. Keeble (1977) ends his study with an interesting remark for the questionnaire by stressing that it seems likely that future work in this particular field will be useful only where either new techniques are used or new questions posed. The central formulation of a problem in this paper, therefore, is to construct a questionnaire, which analyses the two key elements of the behavioural location theory 'the role of internal and external decision-makers and the course of the decision making process'. This questionnaire will be described in section four.

The underlying dimension of studying decision-making, concerning location choices focuses on improving the planning of industrial locations. Some of the presented studies in the next section such as Buck Consultants (1997), Ministry of Economic Affairs (1998), and Van Steen (1998) are examples of this underlying/practical dimension of the

³ The so-called structural embeddedness hypothesis is typical for this approach. Romo and Schwartz (1995) define this as regional economies comprise an intricate web of routinized transactions, most of which do not operate through markets. These relationships ultimately congeal into long-term dependencies that constrain the migration behavior of plants that could benefit from cost-structures in other regions of the country or the world.

behavioural approach. Section two describes the results of some typical inventory location studies in the Netherlands. Besides, this section gives us an impression of the context of firm migration, and the content and methodology of firm migration studies in the Netherlands. Section three presents theoretical ideas to improve the behavioural location theory. These ideas are integrated in the questionnaire, which will be described in section four. Section five present the preliminary results of the questionnaire and finally the main conclusions will be drawn in section six.

2 Facts and figures of firm migration

Introduction

Since the nineteen sixties many studies have been executed about the amount, direction, and underlying motives of firm migration in the Netherlands (Molle, 1979; Pellenbarg, 1985; Lambooy et. al., 1997; Schutjens et. al. 1998). One of the first migration studies in the Netherlands analysed 106 firms, which left Amsterdam in 1970.

It was found that 60% of the establishments migrated, because there was no space for them to expand their area; 14% conceded that traffic congestion was another weighty motive (Molle, 1979)⁴. The difference between this first migration study and the Dutch migration studies in the nineties is the larger research population nowadays and the more extensive figures about the amount, direction, and migration motives in the Netherlands. Lambooy et. al. (1997) significantly define the Dutch economic geographical research as pragmatic, applied science, interest in concrete problems, and quantitative analyses.

This section presents important recently published typical behavioural firm migration studies in the Netherlands. Compared to the location studies in the United Kingdom, we conclude that the only development of the behavioural location theory is the more extensive research population. The presented migration studies in the Netherlands are identical of the great days of English behavioural economic geography in the seventies.

The amount of firm migration

The so-called panel of firms of the Faculty of Spatial Sciences of the University of Groningen is an important data source for location choices (see section five). Each year the faculty sends a questionnaire about firm behaviour and firm dynamics to some 3.000 Dutch firms⁵. In 1997, the questionnaire focuses, in line with the publications of Townroe (1976) and Keeble (1977) in the United Kingdom, on firm migration and the demand for business areas in the Netherlands. Van Steen (1998) concludes that 900 of the 1338 active firms in the panel of 1994 moved one or more times during their life cycle.

⁴ In Germany Spanger and Treuner (1975) executed a regression analysis on the number of migrations effected in the whole of Germany during each year of the period 1950-1971. They found a significant relation with the business cycle for new branch-establishments.

⁵ Two third of these firms are so-called active firms and one third are so-called sleeping participants. The response rate of the active firms is 60% to 70%, which means that circa 900-1050 firms return the inquiry. The remaining passive firms have a response rate of circa 25%, which results in circa 150-250 returned inquiries. Finally, 1.000 new firms notified to participate, which results in circa 200 to 250 returned inquiries. Preceding leads to a total of circa 1.300 to 1.400 useful inquires each panel-round.

Another important data source is the so-called ‘Mutation balances’ of the joint Dutch Chambers of Commerce. This project delivers since 1985, national data about firm formation, firm migration, and firm closure. On the basis of these data a series of publications has been written to document and analyse the firm migration process in the past ten years. Table 1 presents the yearly migration factor and the amount of migrated Dutch firms in the business panel and in the Mutation Balance of the Chambers of Commerce.

Table 1. The annual migration factor

Year	Results firm panel		Results Mutation balances	
	N	% migrated	% migrated in Mutation Balance	Total amount
1981	1,131	2,6		
1982	1,152	2,8		
1983	1,168	2,1		
1984	1,197	2,8		
1985	1,220	2,5		
1986	1,244	2,3	5,0	27,085
1987	1,266	2,6	6,1	36,036
1988	1,286	3,4	6,4	39,138
1989	1,309	3,4	6,7	43,008
1990	1,345	4,8		
1991	1,362	3,7	7,5	48,000
1992	1,368	3,9	7,6	56,000
1993	1,380	3,3	7,4	58,000
1994	1,385	2,3		
1995	1,336	3,7	7,9	67,700
Average		3,1	6,8	

Source, Van Steen, 1998, page 27 and Pen and Pellenbarg, 1998, page 8.

Table 1 illustrates that the migration rate in the firm panel varies between 2,1% (1983) and 4,8% (1990). The figures of the Chamber of Commerce are twice as high as the business panel. It should, however, be noted that the panel has an under-representation of very small firms. This confirms the criticism in the Netherlands about the reliability of the Chamber of Commerce data. Some people stress that between 30% to 60% of the registered migrations by the Chamber of Commerce are real migrations. Despite all the criticism, Pellenbarg (1998) argues that the migration data of the Chambers of Commerce offer a faithful reflection of spatial trends in the location dynamism of the Dutch trade and

industry. One of the main conclusions is that migrated firms are small (average of three employees), young, innovative, and fast growing. Pellenbarg (1998) adds that the mobility of firms is greater than is often assumed. In terms of numbers of firms it is not much less important than the much more debated issue of new firm formation. In the Netherlands, the three components of 'business demography' actually account to annual totals of 80,000 new firms, 68,000 firm moves, and 42,000 firm closures (Ministry of Economic Affairs, 1998).

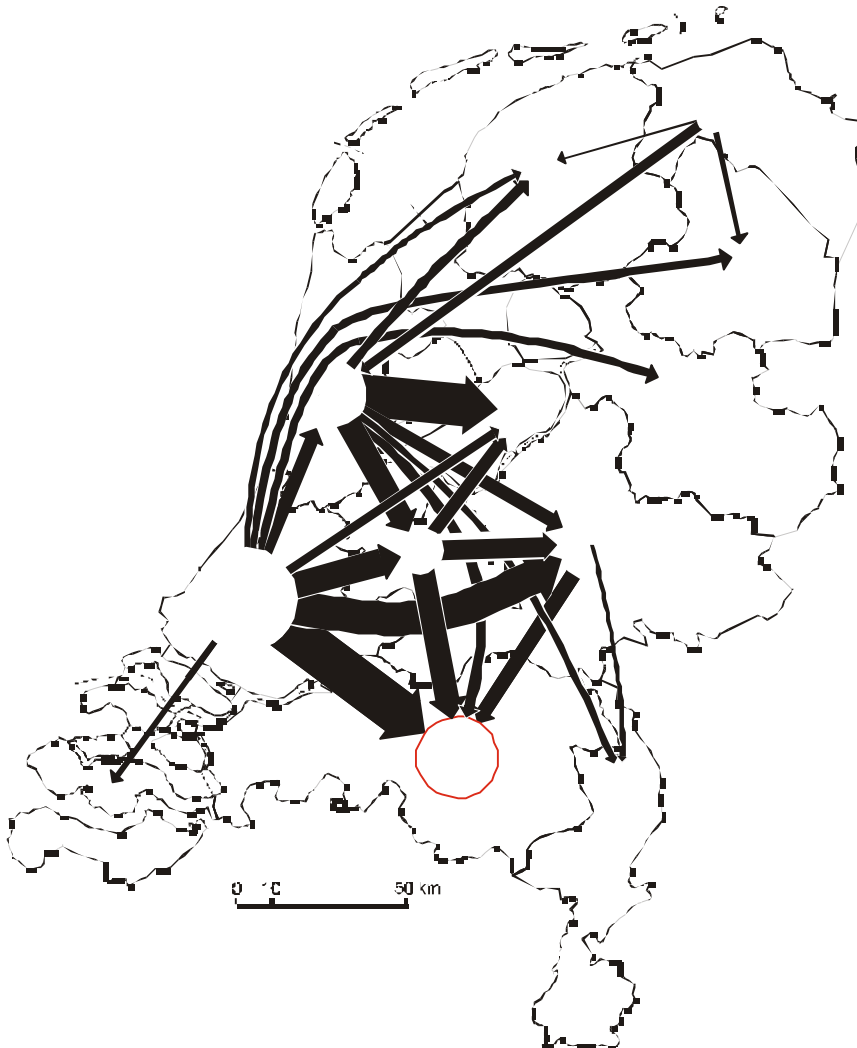
The direction of firm migration

Sant (1975) was according to Townroe (1978) the first who visualised the industrial movement in the United Kingdom. A few years later Keeble (1977, page 137) visualised the sub-regional manufacturing movement within the United Kingdom on a different way. In the Netherlands, Pellenbarg and Kemper (1986, 1988, 1991, 1993, and 1995) periodically publish on the basis of the Mutation Balances in Economic Statistical Reports about the amount and direction of firm migration in the Netherlands. Table 1 already describes the amount of firm migration, but what is the direction of these migrated firms. Generally, firm migrations are short distance moves within the region, but long distance moves lead to a change of the spatial economic landscape.

Keeble (1977) adds that migration trends are likely to be a more sensitive indicator of significant shifts in area location advantage within a country. Figure 1 presents on a similar manner as the British studies in the seventies for the period 1994-1995 the so-called average inter-provincial firm migration in the Netherlands within industry, wholesale trade, and business services. The figure describes that the prevailing trend in the non-local moves (10-20% of all firm migrations) is more and more a south and eastward shift of firms out of the *Randstad*. The arrows in figure 1 represent the amount of migrated firms, which moved over a relatively long distance.

Figure 1. Inter provincial firm migration in the period 1994-1995.

b) 1994-1995



Source: Kemper and Pellenbarg, 1997, page. 509.

Firm migration motives

The next question is of course why these firms move. We distinguish between push and pull factors. Push factors are reasons why a firm wants to leave the present location.

Pull factors are attractive elements of a new location, which causes a firm to move to this new location.

As we said earlier, hundreds of firm migration studies were executed in Western Europe. This section focuses only on the Dutch situation. To illustrate that the Dutch methodology is identical to studies in the United Kingdom, we first present an example of a list of migration motives presented by Townroe (1978). Townroe interviewed 531 recently moved firms in the United Kingdom in the period 1973-1974 and simply asked representatives of firms: why did you move? Table 2 describes these migration motives. The figures in the table present the percentages per factors of all questioned firms.

Table 2. What caused you to consider a new plant in a new location?

	Major reason	Minor reason	Outstanding single reason
To permit an expansion of output	83	8	20
Inadequate existing premises or site	50	11	8
Unsatisfactory labour supply at existing location	40	11	15
Inducements and facilities made available by official bodies	27	14	2
Opportunity to purchase or rent premises or site at the new location	20	8	3
Too far from established or potential markets	19	1	9
Refusal/expected refusal of Industrial Development Certificate (IDC)	12	4	5
Town planning difficulties	11	3	4
Lease or former premises fell in, or good offer received	5	2	3
Desire to be in more attractive surroundings	4	8	1
Too far from supplies, actual or prospective, of materials or services	3	2	1
More profitable to operate where, no other postulated reason being major	1	-	1
No one outstanding reason	-	-	28*

* The last reason was asked to 392 firms, having been added after some interviews had taken place.

Source: Townroe, 1978, page 34.

In the study of Van Steen (1994) the response of 795 Dutch firms could be used to trace the most important migration motives. Table 3 presents the percentage of the quoted ten most important motives.

Table 3. Most important push and pull motives (N=795)

Push	%	Pull	%
No possibility of expansion	77,0	Possibility of expansion	61,1
Premise not representative	31,6	Representative premise	50,4
Parking possibilities	29,4	Parking possibilities	46,7
Transport of goods	25,7	Accessibility by car	45,0
Accessibility by car	17,4	Transport of goods	36,0
Location of consumers and clients	10,4	Too large premise	29,3
Location of suppliers	4,8	Location of consumers and clients	19,2
Quality of living environment	4,3	Accessibility of public transport	16,0
Expropriation, fire, selling of premise	3,6	Location of suppliers	9,2
Fusion/reorganisation	3,4	Quality living environment	7,3

Source: Van Steen, 1998, pages 42-43.

In 1997, the Ministry of Economic Affairs ordered the consultant bureau B&A to analyse the most important location factors for four economic sectors. We include this study, because of its subdivision in sectors and the results of the inquiry shows the similarity with the firm migration motive studies. Table 4 outlines the main results.

Table 4. Important location factors per sector on a regional and local level

Industry	Commerce	Traffic and transport	Services
1 Accessibility by road	Accessibility by road	Accessibility by road	Parking
2 Loading and unloading	Loading and unloading	Parking	Accessibility by road
3 Parking	Parking	Loading and unloading	Personnel
4 Personnel	Premise	Telecommunication	Premise
5 Premise	Telecommunication	Personnel	Telecommunication
6 Telecommunication	Personnel	Premise	Representative environment
7 Rent/ground price	Rent/ground price	Rent/ ground price	Accessibility public transport
8 Space for expansion	Representative environment	Representative environment	Rent/ground price
9 Representative environment	Space for expansion	Telecommunication	Landscape quality
10 Accessibility transport	public Accessibility transport	public Space for expansion	Space for expansion

Source: Ministry of Economic Affairs, 1998, page 86.

Practical relevance of firm migration studies

Section one stresses that the practical reason of studying firm migration and underlying motives focuses on planning industrial locations. The publications of Keeble (1977), Townroe (1978), and Buck Consultants International (1998) confirm this practical reason. Dutch firms are for example especially interested in business areas located near highways and not too far from urban areas. Besides, firms regard parking of great value. A few weeks ago the municipality of Amsterdam for example stresses that many firms are looking for a suburban location due to the strict parking regulations in the inner city areas. Most centrally located firms in Dutch cities have no space for expansion on the existing location. The Dutch Study Centre (*Nederlands Studie Centrum*) not for nothing in November 1999 organises a congress titled “Movement of business activities from the urban area; advantage for the city and the firm”. The Dutch central government uses preceding information and trends to develop two spatial planning concepts: the complete city and corridors. The built and urbanised areas around cities are regarded as complete cities and the development axes between the major cities are regarded as corridors. The main goals of developing these concepts focuses on preventing for example ribbon developments along highways, counteracting the sub-urbanisation of firms and households from the central city, and reduce the contrast town-countryside.

3. Improving the behavioural location theory

Introduction

In the first section, we describe that the used theoretical approach regards the location of firms as a decision-making process. This complex process can be simplified by distinguishing between one to seven decision phases, but except from Louw (1996), in

theory little is known about the location decision process itself and the amount of decision phases. Besides, advocates of the firm demography approach such as Van Wissen (1996) and Van Dijk, Pellenbarg, and Van Steen (1998) argue that the location decision process should be more related to the five demographic components.

Section two illustrates that in practice firm migration research in the nineties is more or less similar to the English location choice studies in the seventies. Most of these studies enumerate lists of geographical location factors, which regard the firm as a ‘black box’ and are mainly based on the question: why did you move or why did you choose this site? We open this ‘black box’ by on the one hand dividing the location factors in organisational, premise, and environmental factors. This connects with the remark of Townroe (1971, page 5) that “by looking at locational choice...the internal and external environment of a company at a point in time becomes important as a source of pressure on the decision taken”. On the other hand we compare the location factors resulting in relocations with location factors resulting in other location strategies (see next subsection).

We present a train of thought, which can be used to improve the behavioural location theory and stimulate the revitalisation of behavioural economic geography by combining the criticism of what we know in theory and in practice. Section 3 therefore presents a well-grounded motivation of the questions described in the questionnaire.

Attempts to improve the behavioural location theory

Townroe (1991) initiates the renewed interest in the behavioural location theory⁶. In the Netherlands, Louw (1996) is the first advocate for a revitalisation of this location theory. His dissertation focuses on incorporating the role of the premise in the location decision process. Louw interviewed 40 recently moved office organisations personally. The most important migration motives of Louw’s interviews are not surprisingly lack of space for expansion, business organisational reasons, and the integration of settlements and premises. We argue that the coupling of location factors (inclusive the premise) with the three decision phases orientation, selection, and negotiation is the most innovative aspect of this dissertation⁷. Louw concludes that the use of the difference in three decision phases is a useful tool to unravel the location choice process and the importance of business internal and external factors. Table 5 presents the main results of this coupling.

Table 5. Relative importance of location factors in three decision phases

Location factors	Orientation	Selection	Negotiation	Total
Premise	15,3	12,3	7,1	11,9
Functional	19,4	18,4	7,1	16,1
Technical	3,1	4,2	2,0	3,4

⁶ This paper argues the case for widening the perspectives used in the analysis of industrial location decisions to consider both procedural rationality and expressive rationality alongside the standard instrumental view.

⁷ These three phases are identical to the famous business management article of Mintzberg, et. al (1976) about the structure of unstructured decision making processes in Administrative Science Quarterly.

Financial	12,2	14,2	52,5	22,5
Site/business area	43,9	36,0	12,1	32,3
Remaining	6,1	14,6	19,2	13,8
Total	100	100	100	100

Source: Louw, 1996, page 154.

The main conclusion of table 5 is that financial and spatial location factors determine more than 55% of the outcome of the location decision. This paper elaborates on Louw's approach, but questions the existence of three decision phases and the usefulness of the difference in the six presented groups of location factors. We argue that the following statement of Townroe (1971, page 6) is still relevant and useful for our topics in the questionnaire: "the importance of the stages in the decision process have been discussed by other investigators.... But previous surveys have not looked closely at such questions as the position in the company of the individual who undertook the search, how the criteria for the final choice were established, who was consulted both within and outside the company, how long the search process took and then how long it was before production started in the new plant, what steps were taken for financial evaluation, etc.". Besides, we argue that relating the five business-demographic components with location decisions and decision-making would also improve the behavioural location theory.

The goal of my dissertation not for nothing focuses on identifying the underlying business internal and external factors, which are being put forward in migration decisions. For example, the most important migration motive lack of space for expansion is the consequence of other causal factors such as new product technology, market developments, workplace regulations and flexibility, and environmental policy. Another important migration motive insufficient accessibility during an in-depth interview in one firm proved to be a consequence of changed transport methods and demands, the building of a housing area, the changed production system, and the demands of commuting employees.

Preceding section implies that the questionnaire focuses on.

- (1) Analysing the six location strategies: relocation, junction, division, expansion on site, taking-over, and disposal.
- (2) Comparing the location factors related to the organisation, premise, and environment for all location strategies.
- (3) Unravelling the (re)location decision process.
- (4) Relating location strategies to the business life cycle.

Henceforth this paper, we will, in connection with the sending the new 'business panel questionnaire' in June/July 1999, focus on presenting the preliminary results of the questionnaire, which was send to mainly relocated firms in June 1999. We assume that almost every firm has made location strategies the last decade. This implies that the questions can be send to all firms.

4 The questionnaire

The research population of the questionnaire

The panel population in 1999 (total 3,116 firms) consists of three parts⁸.

(1) The active firm population of 1,969 firms will be contacted in July 1999. These firms are titled as active, because they contribute to at least one of the two most recent distributed questionnaires.

(2) The passive firm population of 189 firms contacted in June 1999. These firms are titled passive, because they did not contribute to the two most recent distributed questionnaires.

(3) The new firm population of 958 ‘registered’ relocated firms contacted in June 1999. These firms are collected with a rather pragmatic and cheap method⁹. First, we searched the names and addresses (with the help of Post Office service on the Internet (**Error! Bookmark not defined.**)) of the 517 electronically available newspaper article-archives collected on the Internet about relocated firms. These newspaper articles were used for our paper at the ERSA Congress in Vienna august 1998 (for details see Pen and Pellenbarg, 1999). The other 436 firms are collected by sending on the one hand, e-mails to the larger municipalities in the Netherlands with a known Internet address. On the other hand, we send faxes to 16 representatives of larger municipalities we met personally at Dutch congresses concerning industrial location planning the past two years. In this e-mail or fax we simply asked these municipalities to send names and addresses of relocated firms. Most of the contacted municipalities appeared to be rather reserved in sending names and addresses of relocated firms. Besides, some of the municipalities did not register relocations or referred to other organisations such as the province, the local Chamber of Commerce or the local business club. We, therefore, received in most of the cases only between 5 to 10 firm names. All in all, this resulted in 436 names of relocated firms.

The response rate

Table 6 describes the ‘response rate’ of the send 958 questionnaires to the new addresses. A wrong address means that (1) the address or the name of the firm is wrong, unknown or incomplete; (2) the firm has left; (3) the firm died or (4) the firm does not belong to the manufacturing or tertiary sector. The column co-operation simply means that the representative answered the questions and not that the firm has relocated.

Table 6. Response of the send 958 questionnaires (by 30-06-1999)

	Wrong address	No co-operation	Co-operation	No response (yet)
Amount	25	8	52	873

Source: Own calculation.

⁸ These firms belong to the manufacturing sector and the tertiary sector.

⁹ We could also have bought 1,000 addresses of firm migrations from the Chamber of Commerce, but recent studies of Buck Consultants International (1997) and INBO Advisors (1999) after a labour intensive check up showed that more than 50% of these migrations appeared to be wrong.

No co-operation includes four firms who refused to co-operate without motivation. These firms send the blank questionnaire in the return envelope. Besides, two other firms send an official letter to motivate their refusal. One 'firm' appeared to be a governmental organisation and one firm demanded 50 guilders to co-operate. Table 7 presents the 'response rate' of the send 189 'passive' business panel firms in June 1999. The listed columns have the same meaning as the columns in table 6 and the firm who was not willing to co-operate also send an official letter.

Table 7. Response of the send 189 questionnaires (by 29-06-1999)

	Wrong address	No co-operation	Co-operation	No response (yet)
Amount	10	1	5	173

Source: Own calculation.

The questionnaire

The questionnaire consists of three parts: (1) Introducing questions, (2) underlying aspects of relocation decisions, (3) phases of the decision-making process and additional questions about this process. Its main aim is to take stock of the real underlying location factors and the most common amount of decision phases. Before presenting the main results, we have to stress that due to the relatively low amount of received questionnaires no statistical calculations will be executed. This means that this paper will have a descriptive character. We only present some preliminary results to illustrate our train of thought and outline possible statistical calculations of our questionnaire in future.

(1) Introducing questions.

The respondent should indicate if the firm since 1-01-1995 was involved in one of the six listed location strategies in table 8. This date is used, because we assume that respondents have forgotten or misinterpreted important details of the location strategy after more than four and a half years due to memory and information problems. In cases where the firm was involved in more than one location strategy, the most recent strategy will be used for the same reason. Finally, the column 'none' contains firms, which did not execute a location strategy after 1-01-1995. The location strategies of the 57 co-operating firms are listed in table 8.

Table 8. Location strategies of the responding firms (by 30-06-1999)

	Relocation	Junction	Division	Expansion on site	Taking-over	Disposal	None	Total
Amount	30	2	2	5	1	1	16	57

Source: Own calculation.

In two cases, relocation was related to expansion on site and relocation was combined with disposal by one firm. One firm had to expand, because of the junction strategy.

The next part relates to the typical behavioural question of the involved business internal and business external decision-maker during the relocation decision.

Due to the limitations of using a written questionnaire, we could only ask firm representatives to indicate if the director personally, the board or the head-office executed the decision to relocate. If we compare the quantity of decision-makers with the size of the firm, we can estimate that a positive relation exists between the size of the firm and the amount of people involved in the relocation decision. We assume that preceding relationship connects with the existence of a special commission or taskforce, which coordinates the relocation process. Besides, a special commission indicates that the relocation process is often complex and important. Finally, we test the assumption that smaller firms have less need for such special commissions.

Furthermore, the assistance of an external advisor shows that firms need knowledge and expertise from outside. Therefore, this question also confirms the complexity of the decision. Besides, we try to find out if a negative relation exists between the size of the firm and hiring an external advisor. We assume that larger firms have more knowledge and expertise and need less external assistance. On the contrary, one could also assume that a larger firm possesses more financial means to hire an external advisor. Finally, it is noteworthy that all respondents answered the question: who decided to relocate. On the contrary, some respondents due to business economic secrecy and unacquaintance did not answer the involvement of a special commission and especially the involvement of an external advisor. This is shown by a question mark in table 9.

Table 9. Involved actors in the relocation strategy (N = 30)

	Who decided to relocate?					Special commission			External advice			Total
	Director personally	Board	Director / board	Share-holders	Head-office	Yes	No	?	Yes	No	?	
Relocate	18	10	1	1		10	18	2	8	12	10	30
< 20	11	6	1			4	12	2	5	8	5	18
20-50	5	1					6		1	4	1	6
50-200	2	3		1		6			2		4	6
< 200												

Source: Own calculation.

Table 9 indicates that the director personally is often responsible for relocations (60%) and especially for the relocation decision in smaller firms (< 50 employees). The board of the firm is not surprisingly more involved in the relocation decision of larger firms (> 50 employees). This contrast with the findings of Townroe (1971, page 43), who described that “75% of the relocation were executed by the director”. It is noteworthy that all respondents answered the question: who decided to relocate. On the contrary, two firms filled in a question mark for the occurrence of a special commission. According to us ten firms did not answer due to mainly (business economic) secrecy the question of hiring an external advisor.

The table clearly shows that smaller firms (< 50) do not have a special commission to co-ordinate the relocation, but larger firms (> 50) noteworthy often install such a commission. Furthermore, there is no evidence that the firm size is connected with hiring

such an advisor. We argue that the answer of not hiring an external advisor by twelve firms is striking.

In practice due to the assumed complexity and lacking experience of firms with the relocation process, firms should always hire an external advisor. Preceding result may be explained by the assumption that firms regard for example an architect, a remover, or a construction industry not as an external advisor.

(2) Underlying aspects of location decisions.

On the basis of an extensive review of especially geographical (e.g. Ministry of Economic Affairs, 1998; Pellenbarg, 1985; Van Steen, 1998; Louw, 1996, and Ebels, 1997), but also business management (e.g. Hickson et. al., 1986 and Pool, 1990) and economic literature (e.g. Brickley, 1997), we construct a list of underlying internal and external location factors influencing (re)location decisions. These location factors are divided into three groups: (1) premise, (2) organisation, and (3) environment. The tables 10, 11, and 12 at first sight are except from the amount of location factors identical to the earlier presented tables in section two. But, we argue that dividing the location factors into three groups including strategic business economic processes slightly opens the ‘black box’ of the relocated firm. In the future, if all questionnaires will be sent and a minimum of 400 returned we estimate (by using statistical techniques appropriate for a (grouped) ordinal scale) the relation between certain factors. Besides, the differences between the location factors of the six location strategies will be analysed and possibly clarify what makes a relocation or other location decision so particular.

For each table the respondents should indicate the importance of each factor on a four point ordinal scale: (-) unimportant (= 0), (+) slightly important (= 1), (++) important (= 2), and (+++) very important (= 3). Due to the limitations of using an ordinal scale, only the median for each location factor in the tables 10, 11, and 12 can be estimated. Furthermore, we assume that the mind of the representative of the firm thinks on a continuous scale instead of a discrete scale. Wonnaccott en Wonnaccott (1990, page 32) define the median as “the middle observation or 50th percentile.... If the array consists of a large number of observations grouped into cells, then the median can be approximated by covering the appropriate distance across the median cell”. For example, suppose that 30% of the observations were accumulated to the left of the median cell. To get the median, we must therefore pick up another 20% of the observations. Since the median cell includes 32% of the observations, we move 20/32 of the way through it, starting at the boundary and remember the cell width. The cell boundaries of the values in table 10, 11, and 12 are respectively -0.5 - 0.5 (-), 0.5 – 1.5 (+), 1.5 – 2.5 (++) , and 2.5 – 3.5 (+++). For example the calculation of the median of the relocation factor radiation in table 10 is as follows: 1.5 (cell boundary column ‘+’) + 3.5/8*1 (cell width) = 1.9.

Table 10 shows that location factors related to the premise are more important for relocations than other location strategies. Especially, the radiation, the space, the flexibility and the division of the premise determine the decision to relocate with respect to the premise. The relative unimportance of financial and calculating aspects such as rent/ground price, rent contract/ownership, exploitation charges, and marketability of the premise is noteworthy, because of for example the conviction that financial grants and policies of governments can attract firms by lowering the price of these financial factors.

Finally, the spatial situation of the premise appeared to be the central location factor for other location strategies. We conclude that preceding results confirm the choice of Louw (1996) to incorporate real estate theories in the location theory.

Table 10. Location factors related to the premise (N = 40)

	Relocation				Other location strategy				Median
	-	+	++	+++	-	+	++	+++	
Radiation	3	7	8	9	4	2		3	1.9 – 0.8
Rent/ground price	10	5	8	2	4	2		3	1.0 – 0.8
Workplace regulations and security	12	6	5	2	5	4			0.6 – 0.4
Old age	13	2	5	7	5	3		1	0.8 – 0.4
Too much or too less space	3		5	18	3	1		5	2.8 – 2.6
Rent contract/ownership situation	19	2	1	3	6		2	1	0.2 – 0.3
Space for expansion	6		6	16	3	1	2	3	2.6 – 1.8
Climate/sound/(sun)light	15	7	1	3	6	3			0.4 – 0.3
Flexibility	7	6	2	11	6	1	2		1.5 – 0.3
Division	7	5	5	9	6	1	1	1	1.7 – 0.3
Exploitation charges	22	2		1	6	1		2	0.1 – 0.3
Quality equipment	15	5	1	3	5	1	2	1	0.3 – 0.4
Facilities	12	8	2	4	5	1	1	2	0.6 – 0.4
Marketable	15	5	2	3	5	2	2		0.3 – 0.4
Maintenance situation	15	3	6	2	6		2	1	0.4 – 0.3

Source: Own calculation.

Table 11 presents that organisational location factors, for all location strategies are less important than location factors related to the premise, but have less mutual differences in the listed factors between relocation and other location strategies. Apparently, three of these factors are important with respect to relocations: business strategy, internal communication/logistics, and efficiency of the primary process.

Table 11. Location factors related to the organisation (N = 40)

	Relocation				Other location strategy				Median
	-	+	++	+++	-	+	++	+++	
Information/communication technology	13	10	2		6		1	2	0.5 – 0.3
Profit development	8	7	6	4	7		1	1	1.1 – 0.1
New management/board	20	3		2	7	1		1	0.1 – 0.1
Reorganisation/fusion and/or take over	21	3	1		9				0.1 – 0.0
Personnel policy	19	5		1	8			1	0.2 – 0.1
Business strategy	5	6	8	6	2	1	4	3	1.7 – 2.0
Development production methods	13	8	1	3	7	1	1		0.5 – 0.1
Quality demands organisation/product	8	6	7	4	4	3	2		0.3 – 0.7
Production and turnover growth	3	9	3	12	3		4	2	1.0 – 1.9
Internal communication/logistics	6	6	9	4	4	1	2	2	1.6 – 1.0
Policy for storage/supply	6	10	3	7	5	2	1	1	1.2 – 0.4

Saving total business costs	11	4	6	5	6	1	1	1	1.0 – 0.3
Subjective/personal goals	12	7	5	1	8	1			0.6 – 0.1
Efficiency primary process	5	5	10	5	4		4	1	1.8 – 2.6
Working and production flexibility	8	11	2	4	4	2	1	2	0.9 – 0.8

Source: Own calculation.

Related to relocation, the same counts for the other location strategies, except that internal communications/logistics is replaced by production and turnover growth and efficiency of the primary process is even more important. Furthermore, strategic organisational changes such as a new board, reorganisations or take-overs are of minor importance for all location strategies. Finally, partly due to the used questionnaire, the typical behavioural factor ‘subjective and personal goals’ appeared to be relatively unimportant. Finally, recent Dutch newspaper articles and directors of six relocated firms stress the importance of personnel (policy), but so far table 11 (and also the regional labour market in table 12) show no signs of this trend.

Table 12. Location factors related to the environment (N = 40)

	Relocation				Other location strategy				Median
	-	+	++	+++	-	+	++	+++	
Facilities loading/unloading	5	7	7	9	6	1	2		1.8 – 0.3
Parking facilities	5	7	4	12	5	2	1	1	2.0 – 0.4
Proximity inner city/provisions	16	5	2	2	7	1		1	0.3 – 0.1
Commuting distance	16	4	2	3	7		1	1	0.3 – 0.1
Criminality/security	18	4	2	1	7	1	1		0.2 – 0.1
Accessibility	5	4	7	10	5		5		2.1 – 0.5
Representative environment	3	8	7	9	4	1	2	2	1.9 – 1.0
Environmental policy/-limitations	13	5	5	3	5	2	1	1	0.5 – 0.4
Inconvenience of/on environment	12	7	1	6	6	1	2		0.6 – 0.3
Municipal development plan	17	5	2	3	8		1	1	0.3 – 0.1
Distance to suppliers/clients	19	4	1	1	9		1		0.2 – 0.1
Proximity transport terminal	21	3	1		9				0.1 – 0.0
Regional labour market	18	6	1		8		1		0.2 – 0.1
Quality housing and living environment	17	3	5		7		2		0.2 – 0.1
International contacts	17	6		1	9				0.2 – 0.0
Market interest location/premise	14	4	3	4	8		1		0.4 – 0.1

Source: Own calculation.

Table 12 describes that environmental location factors for relocations and especially for the other location strategies are not so important as the assumed importance in the presented studies in section two. Not surprisingly for the Netherlands, infrastructure factors related to (un)loading, parking, and accessibility are most important. Furthermore, in the Dutch practice of planning industrial locations, concepts such as green and durable business areas, business area management, and park management gain more interest. The popularity of such concepts result from the listed importance of a representative

environment. The result that only a representative environment may be important for other location strategies, implies that government investments in the spatial economic structure should always focus on maintenance and management of a representative environment and developing the earlier mentioned concepts. The relative low score on the factors proximity to the inner city and the commuting distance illustrates the contrast between the Dutch firm demands and the Dutch mobility policy (e.g. the so-called *ABC*-policy and *VINEX*-policy) of concentrating working as well as living conditions near urban areas. Finally, the assumed impact of international contacts due to the often cited impact of the globalisation process appeared to be rather unimportant.

(3) Phases of the decision-making process and additional questions about this process.

Louw (1996), following the ideas of Mintzberg et. al. (1976) argues that the location decision process consists of three phases and on the other hand Edwards (1983) subdivides seven location decision phases. Besides, for example Hayter (1997) distinguishes five phases and Townroe (1971) uses four phases. Therefore, we trace how many phases the questioned relocated firms identify. First, we present a sequential list and a short description of all seven theoretically used decision-making phases.

- a) Identification: chances, problems and crises are the motives.
- b) Diagnosis: identification and formulation of the problems and starting the relocation process.
- c) Search: collecting information and evaluating reactions of concerned actors.
- d) Development: developing solutions and alternatives. This will lead to the planning of certain solution directions.
- e) Evaluation: comparing alternatives and solutions.
- f) Strategy: determining the strategy on the basis of earlier phases.
- g) Implementation: making the definite decision and starting the actual relocation.

The main problem of propounding such a difficult question in a written questionnaire is that respondents are inclined to quickly confirm the seven decision phases. This implies that if we would use another sequence, respondents will confirm this sequence. Despite these drawbacks, we combine the seven phases with the average duration per phase. This combination will clarify the weight of each phase. Besides, we are interested in the deviations with respect to the sequence and the amount of phases. Furthermore, by adding the average duration (in months) of each decision phase, we argue that this will be an indication of the importance and complexity of the identified phase, no matter the earlier mentioned criticism in this paragraph. The amount of phases corresponds with the appeared different types of phases. This means that for example the sequence F-A-C-F-G corresponds with four phases and the duration of phase F is just an addition of both two F's. The last row of table 13 indicates that for example phase G occurs in 22 of the 24 relocations. Due to the complexity of the question, six of the 30 respondents were not able to give a useful answer

Table 13. Average duration of phases decision making process of relocations (N = 24)

Phases	A	B	C	D	E	F	G	Duration
--------	---	---	---	---	---	---	---	----------

7	10.4+?	2.6	22.0	3.8	2.8	3.0	6.0	49,3+?
6	2.5	7.0	9.0	7.3	4.5	9.0	6.5	45.8
5	5.0	2.3	4.8	1.0	3.0	1.3	4.8	22.2
4		4.8	4.0	2.8	1.0	2.0	2.2	16.8
3	5.3	3.0	3.0			1.0	2.3	14,7
2								0.0
1								0.0
Total	17	20	17	18	14	18	22	

Source: Own calculation.

Table 13 shows that a positive relation exists between the amount of phases and the duration of the relocation decision-making process. It is evident that there are no firms, which identified one or two decision-making phases. Besides, it is noteworthy that the duration of the decision-making process especially consumes a long time period if the process is divided in six or seven phases. The diagnosis and implementation phase occurs most of the time during a relocation process and the evaluation phase not surprisingly in least of all the cases. Generally, the duration of the search phase took the largest time period of the total decision-making process. This connects with the findings of Townroe (1971, page 59) who described that “the search phase of 34% of the relocated firms exceeded twelve months”. Finally, the presented alphabetical sequence ABCDEFG is only confirmed by 5 of the 24 relocated firms. We, therefore, conclude that the presented sequence only has a limited impact on the results.

The most difficult task for the respondents focuses on indicating which of the five groups location factors are important during each of the identified phases. We construct a similar challenging table as Louw (1996, page 154), with the exception of five groups of location factors instead of three groups of location factors. These five groups are logically the three groups of the tables 9, 10, and 11 and also personal considerations and government policy and rules (see Townroe, 1971, chapter 7). Personal considerations are added because of the assumed behavioural subjectivity of decision-makers, although we acknowledge that a written questionnaire is not the most suitable instrument to test this assumption. Finally, Pen and Pellenbarg (1999) conclude that government policy and rules are important with respect to firm migration in the Netherlands. We, therefore, ask ourselves how this factor relates to the other groups and at which phase this factor is important. Related to the core tasks of the government, table 12 should indicate that this factor is most important in the search and implementation phase.

The respondents have to indicate for each identified phase if the listed groups of five location factors are not important (= 0), important (= 1) or very important (= 2). The results are presented in table 14. The figures in table 14 represent the average value of all scores per cell. This means that the first cell is an average of all the premise scores firm representatives identified if they selected phase A. Due to the complexity of this topic, only 16 relocated firms answered this question. Besides, the reader should acknowledge that some of the 16 firms only valued location factors, which were important/relevant. The results in table 14, therefore, show an upward tendency.

Table 14. The importance of groups of location factors during decision-making phases (N = 16)

	A	B	C	D	E	F	G
Premise	1.3	1.0	1.3	1.2	1.3	1.5	1.7
Organisation	1.0	1.1	0.6	1.3	1.3	1.3	1.4
Environment	0.8	0.8	1.4	1.2	1.3	1.3	1.4
Personal	0.8	0.8	0.7	1.0	1.1	1.0	1.1
Government	0.4	0.2	0.8	0.5	0.9	0.8	0.7

Source: Own calculation.

Table 14 describes that the importance of all five groups location factors are highest in the implementation phase.

Location factors related to the premise are most important of the five selected groups. In contrast with the results in table 11, personal factors appear to be relevant during the relocation process. Besides, the table clearly indicates that governmental factors are despite the conclusions of Pen and Pellenbarg (1999) of secondary importance. But, the results clearly show that the conclusion of Townroe (1971, page 89) “that the main impact of the local authorities was at the time of the initial search and choice between areas” is out of date. It is noteworthy that organisational factors are not so important in the search phase. We argue that this result can be explained by the external focus of the firm in this phase. Environmental location factors become important from the search phase and personal factors after ending the search. Finally, it could be predicted that governmental factors are important in the search phase and after the development phase.

Additional questions about the relocation decision-making process

We wondered if an extra evaluating decision phase should be added, after the firm executes the definite location strategy. Therefore, the respondent should indicate if the location strategy is evaluated with a simple yes or no. Furthermore, a judgement is given regarding the decision making process and the final decision retrospectively. These results present general information about the satisfaction of the course of the process and the executed decision. The respondents should indicate on a scale of 1 (very unsatisfied) to 10 (very satisfied) how satisfied they are with the final decision and the decision process. One firm did not answer these questions and two other firms filled in the judgement with pluses and minus.

Table 15. Relocation strategy evaluated (N = 30)

	Evaluate location strategy		Average judgement decision-making process	Average judgement executed decision	N
	Yes	No			
Relocation	18	11	7.5	8.5	29

Source: Own calculation.

More than 60% of the relocated firms evaluated their location strategy. This result contrasts with the notion that relocations are too complex and strategic to be evaluated. We, therefore, cautiously recommend that a phase H ‘ex post evaluation’ should be added to the presented seven theoretical decision-making phases on page 17. Besides, it is exceptional that the 27 firms who filled in their judgement are so positive about the relocation (process). The actual economic growth in the Netherlands and the confidence in the Dutch economy may influence this result. Table 15 also shows that firms regard the decision to relocate as a ‘wise’ decision, but they are not wholly satisfied with the decision-making process.

Furthermore, we examine if a relationship exists between the average duration of the decision making process and the appearance of an additional evaluative stage. The duration of the process is also related to the judgement about the process and the executed decision. We predicted that there is a negative relation between the duration and the judgement of the process and the final decision.

Table 16. Relation between the evaluated relocation strategy and its duration (N=24)

	Duration relocation strategy				
	< 1 year	1-2 years	2-3 years	< 3 years	Total
Evaluation	2	7	1	5	15
No evaluation	3	5		1	9
Average judgement decision-making process	8	7	7	6.8	
Average judgement executed decision	8.6	8.2	9.0	8.9	
Total	5	12	1	6	24

Source: Own calculation.

Table 16 presents three interesting results:

1. The duration of most of the relocations is longer than one year;
2. If the duration of the relocation process exceeds two years, there is a sharp increase of the need to evaluate this strategy;
3. Apparently, a small negative relation exists between the duration of the process and the judgement of the decision-making process.

Section one describes the importance of integrating the demography of firm approach and behavioural economic geography. One of the main results of this integration is the generally accepted conclusion that relocating firms are small and fast growing firms. We examine the growth of firms on the basis of two commonly used indicators: (1) the development of the amount of employees (table 17); (2) the actual life cycle of the firm and the life cycle of the firm in two years (table 18).

(1) We have little information about the relationship between the development of employees and relocation. Table 17 examines this relationship by describing the difference in the amount of employees in 1995 and 1999 of the relocated firm. Firms started after 1995 are not included.

Table 17. Employment change of relocated firms (N = 28)

	< -100%	-100% - -50%	-50% - 0%	0%	0% - 50%	50% - 100%	> 100%
Firms		1		2	9	7	9

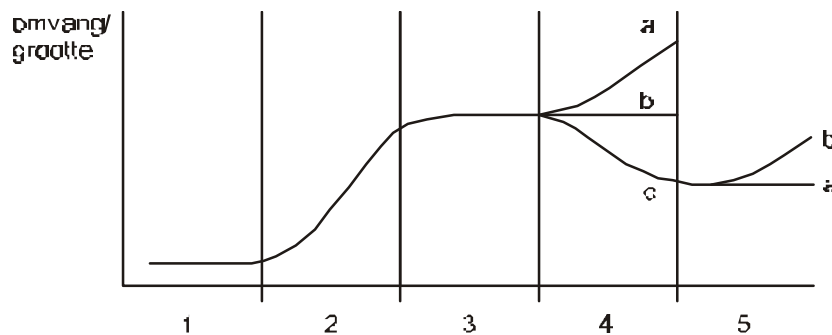
Source: Own calculation.

Table 17 stresses that relocation often results in employment growth and this further lead to business growth. The business economic benefits of relocation are often larger than the costs. We argue that these preliminary findings on the basis of 28 relocated firms are important for what we know about firm migration: ‘apparently relocation is good for the business economic situation of a Dutch firm’. Preceding contrasts, with the notion that many Dutch firms postpone or cancel the relocation, because of business economic risks. In the next paragraph, this finding will be tested with the help of the business life cycle diagram.

(2) Based on figure 2, the respondents marked the actual stage in the life cycle and the predicted stage in two years. The y-axis (*omvang/grootte*) of figure 2 represents the size of the firm.

Identical to the preceding point, little is known about the relationship between the life cycle and relocation. Table 14 presents the results of the business life cycle of the 26 relocated firms nowadays and the predicted life cycle in two years. Column 1 in table 18 concerns the actual amount of relocated firms in phase 1. 1’ presents the amount of firms, which will be in the starting phase in two years. Firms started after 1995 are excluded. Besides, two relocated firms did not fill in this part and one firm only filled in the actual life cycle.

Figure 2. The business life cycle.



Source: Own calculation.

Table 18. Business life cycle (N = 26)

	1	1'	2	2'	3	3'	4a	4a'	4b	4b'	4c	4c'	5a	5a'	5b	5b'
Relocation			13	8	6	4	4	10	1	2			1		1	1

Source: Own calculation.

Table 18 illustrates that 17 of the 26 relocated firms are in a growth phase and 7 of the 26 relocated firms have a stable situation. 18 of the 25 relocated firms predict that in two years the firms will be in a growth phase and 6 of the 25 relocated firms will be in a stable situation. We conclude on the one hand that relocated firms are often growing firms and on the other hand that relocation has a positive impact on the business economic situation of a firm. This partly explains why a positive relation exists between economic growth and the amount of firm migration.

5. Conclusions

My dissertation and this related paper focus on clarifying the strategic decision-making process on relocations. The first section of the paper describes that the so-called behavioural location theory inspired by the ideas of Cyert and March (1961) and Simon (1956) and later Pred (1967; 1969) and Townroe (1971), connects with our research aims. It is generally accepted that the decision-making process can best be analysed by distinguishing certain phases. One of the problems however is the absent agreement on the most common amount of decision phases.

Another main problem of our used theoretical perspective is the statement that the firm is mainly regarded as a 'black box', where our interest stops at the factory gate. Preceding results in the main aims of our questionnaire: (1) analysing the decision-making process, (2) slightly opening the 'black box'. Furthermore, the end of section one describes that we should also try to combine and relate the firm demographic events with location decisions and relocations in particular.

Section two shows that the practical dimension of this type of behavioural research focuses on improving the planning of industrial locations. Dutch firms are for example especially interested in business areas located near highways and not too far from urban areas. The Dutch central government used this information to develop two new spatial policy concepts: the complete city and corridors. Besides, it is shown that the mobility of firms in terms of numbers of firms is much less important than the much more debated issue of new firm formation. The underlying reasons of these firm movements are often divided in push and pull factors. Since the fifties hundreds of migration studies were executed and they often stressed the importance of two location factors: lack of space for expansion and accessibility.

Before describing the questioned topics, we first motivate why these topics are included in the questionnaire. Especially the ideas of Townroe (1971) and Louw (1996) inspired us to divide the location factors in internal, premise and external determinants. Furthermore, the dissertation of Louw (1996) underlines the usefulness of dividing a relocation decision in phases and relate this with the preceding three groups of determinants. This last theoretical section also stresses that we distinguish six location strategies for two reasons: (1) analyse the difference between relocation and other location strategies, (2) enlarge the response of our research population of 3,116 questionnaires.

The results in this paper relate to 1,147 questionnaires, which were send 21 June 1999. By June 30, this resulted in 30 received questionnaires about relocations and 11 received questionnaires about other location strategies. In this conclusion, we only describe the

most important preliminary results for the three parts of the questionnaire: (1) introduction, (2) underlying aspects of location decisions, (3) phases of the decision making process and additional questions.

(1) The director personally is involved in 60% of the relocation decisions, and this appears especially the case for relocations of smaller firms. The board is more involved in migration of larger firms and furthermore these firms often install a special commission to co-ordinate the process.

(2) Tables 10, 11, and 12 show that location factors related to the premise are more important for relocations than for other location strategies. Furthermore, these premise factors are with respect to the other two group location factors also the most important group of migration motives. Finally, the main migration determinants of all three groups are: radiation, space, flexibility, and the division of the premise (I), business strategy, internal communication/logistics, and efficiency of the primary process (II), (un)loading facilities, parking, accessibility and a representative environment (III).

(3) All firms identified a minimum of three decision phases and besides that it was evident that the duration of the decision-making process is positively related to the amount of decision phases.

The duration of the search phase appeared to consume the largest part of the process. Furthermore, the conclusion that personal factors despite using a written questionnaire almost have the same importance as the other three groups of location factors confirms our used behavioural perspective.

Table 15 illustrates that we should add an evaluative phase after the execution of the relocation. The same table also shows a noteworthy high judgement about the final decision and the decision-making process. Besides, it was shown that the duration of relocation exceeded one year and a slight negative relation exists between the duration of the process and the judgement. Finally, the tables 17 and 18 evidently show that relocated firms are often growing firms and relocation has a positive impact on the business economic situation of a firm.

References

- Brickley, J A, C W Smith, J L Zimmerman, 1997, **Managerial Economics and Organizational Architecture**, Chicago (Irwin).
- Buck Consultants International (BCI), 1997, **Locatievoorkeuren recent verhuisde bedrijven**, Nijmegen (BCI).
- Cooper, M J M, 1975, **The industrial location decision making process**, Birmingham (Centre for urban and regional studies University of Birmingham).
- Cyert, R M, J G March, 1961, **A behavioral theory of the firm**, New Jersey (Prentice-Hall inc.).
- Dicken, P, P E Lloyd, 1990, **Location in space; theoretical perspectives in economic geography**, New York (Harper Collins publishing).

Dijk, J van, P H Pellenburg, P J M van Steen, 1998, **Determinants of firm migration in the Netherlands;**

an exercise in the demography of firms approach, Paper presented at the 45th North American Meetings of the RSA, 11-14 November, Santa Fé, New Mexico, USA.

Ebels, H J, 1997, **Oudere stadsdelen en de ruimtelijke effecten van bedrijfsverplaatsingen**, Amsterdam

(Universiteit van Amsterdam (AME)).

Edwards, L, 1983, Towards a process model of office-location decision making. In: **Environment & Planning A**, **15**, pages 1327-1342.

Hayter, R, 1997, **The dynamics of industrial location; the factory, the firm and the production system**, Chichester (John Wiley & Sons).

Hickson, D J, et.al., 1986, **Top decisions; strategic decision making in organizations**, Oxford (Basil Blackwell).

Katona, G, J N Morgan, 1952, The quantitative study of factors determining business decisions. In: **Quarterly journal of economics**, **66**, pages 67-90.

Keeble, D, 1977, **Industrial location and planning in the United Kingdom**, London (Methuen).

Kemper, J, P H Pellenburg, 1997, De Randstad als hogedrukpan. In: **Economisch Statistische Berichten**, **82**, pages 508-512.

Kirkham, J D, H D Watts, 1998, Multi-locational manufacturing organizations and plant closures in urban

areas. In: **Urban Studies**, **35**, pages 1559-1575.

Lambooy, J G, E Wever, O A L C Atzema, 1997, **Ruimtelijke Economische Dynamiek**, Bussum (Coutinho).

Louw, E ,1996, **Kantoorgebouw en vestigingsplaats; Een geografisch onderzoek naar de rol van huisvesting bij locatiebeslissingen van kantoorhoudende organisaties**, Delft (Delftse Universitaire Pers).

Ministry of Economic Affairs, 1998, **Ruimte voor economische dynamiek**, Den Haag (Ministry of Economic Affairs).

Mintzberg, H, D Raisinghani, A Theoret, 1976, The structure of unstructured decisions processes. In: **Administrative Science quarterly**, **21**, pages 246-275.

Molle, W T M, 1977, Industrial mobility – A review of empirical studies and an analysis of the migration of industry from the city of Amsterdam. In: **Regional Studies**, **11**, pages 323-335.

North, D J, 1974, The process of locational change in different manufacturing organizations. In: **Spatial perspectives on industrial organisation and decision-making** (ed. F E I Hamilton), London (John Wiley & Sons).

Pater, B de, H van der Wusten, 1996, **Het geografisch huis; de opbouw van een wetenschap**, Bussum (Coutinho).

Pellenburg, P H, 1985, **Bedrijfsrelokatie en ruimtelijke cognitie**, Groningen (Geografisch Instituut).

- Pellenburg, P H, 1998, A system to identify local industrial development potentials. In: **European Planning Studies**, **6**, pages 141-165.
- Pen, C J, P H Pellenburg, 1998, **Firm migrations, theory and practice; an analysis of empirical studies concerning the impact of government policies**, Paper presented at the Conference at the University of Lodz, about industrial restructuring on 26 to 27 March 1999 in Lodz.
- Pool, J, 1990, **Sturing van strategische besluitvorming; mogelijkheden en grenzen**, Amsterdam (VU Uitgeverij).
- Pred, A, 1969; 1971 **Behavior and location Part I and II**, Lund (University of Lund).
- Romo, F P, M Schwartz, 1995, The structural embeddedness of business decisions; the migration of manufacturing plants in New York State, 1960-1985. In: **American Sociological Review**, **60**, pages 874-907.
- Schutjens, V A J M, R van Kempen, B Wiendels, 1998, **Werk-geïnduceerde migratie over lange afstand: een vooronderzoek**, Utrecht (Urban research Center University of Utrecht).
- Soderman, S, 1975, **Industrial location planning**, Stockholm (Almqvist & Wicksell International).
- Spanger, U, P Treuner, 1976, **Standortwahl der Industriebetriebe in Nordrhein-Westfalen 1955-1971**, Dordmund (Institut fuer Landes- und Stadtentwicklungsforschung des Landes Nordrhein-Westfalen).
- Stafford, H A, 1969, An industrial location decision model. In: **Proceedings of American Geographers**, **1** pages 141-145.
- Steen, P J M van, 1998, **Bedrijvenlandschap 2000+; Bedrijfsverplaatsingen en de vraag naar bedrijfslocaties in Nederland**, Groningen (Faculteit der Ruimtelijke Wetenschappen).
- Townroe, P M, 1971, **Industrial location decisions; a study in management behaviour**, Birmingham (Centre for urban and regional studies University of Birmingham).
- Townroe, P M, 1978, **Industrial movement; experience in the US and the UK**, Kettering (David Green).
- Townroe, P M, 1991, Rationality of the industrial location decision. In: **Urban Studies**, **28**, pages 383-392.
- Wissen, L van, 1996, Ontwikkeling van bedrijven onderwerp van demografische studie. In: **DEMOS**, **8**, pages 69-72.
- Wonnaccott, T H, R J Wonnaccott, 1990, **Introductory statistics**, Toronto (John Wiley & Sons).