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Location assessment, relocation and firm performance

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Location assessment, relocation and firm performance*

Erik Louw & Sylvia Jansen**

Paper to be presented at

**50th European Congress of the Regional Science Association International in Jönköping
(Sweden), 19-23 August 2010**

Abstract

Most studies on firm relocation focus on firms that did relocate. The reasons why they moved and why they settled somewhere else, are always seen as the location factors. The assumption behind this is that firms which did relocate assessed their former location unfavourable compared to their production requirements, while firms that did not relocate were more favourable to their location. By means of longitudinal panel survey data on firms in the Netherlands we investigate whether this assumption is valid.

First we focus on the location assessment and investigate which location factors are most important in the overall assessment. Next we analyse changes of the location assessment over time. Secondly we analyse stated and revealed relocations in relation to the locations assessment and firm performance (measured in the level of employment).

This paper concludes with a discussion on the notion of location factors. Particularly we will focus on their role in the relocation decision process which basically is a matching process between spatial production requirements put forward by firms and locational properties and characteristics of productions sites.

* This paper reflects the initial stages of the research. If you want to quote this paper please contact the authors.

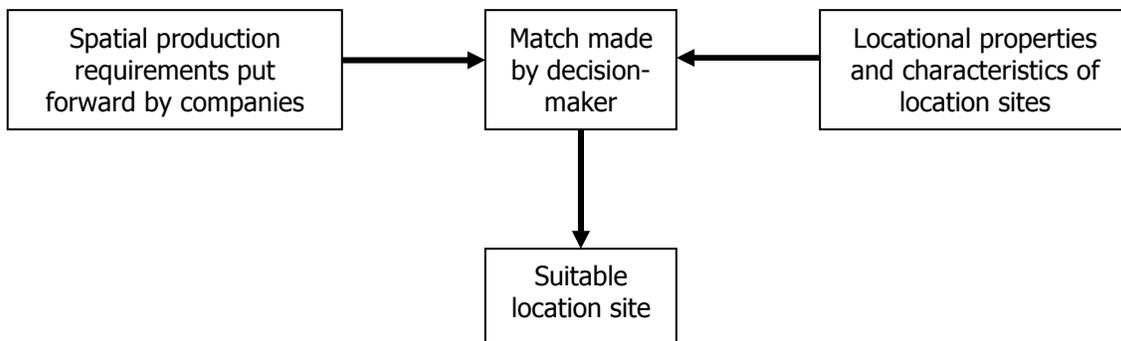
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1. Introduction

Most of our knowledge about the influence of location factors on relocation comes from research on firm relocations and analysis on regional settlement patterns of firms and employment. Many studies on firm relocation focus on firms that did relocate. The reasons why they moved and why they settled somewhere else, are always seen as the location factors. The assumption behind this is that firms which did relocate, evaluated their former location unfavourable compared to their spatial production requirements and their new location more favourable to these requirements. In fact location decision making is a matching process between spatial production requirements put forward by firms and locational properties and characteristics of sites (Witlox, 2000).

Figure 1 The process of finding a suitable location site through matching



Source: Witlox (2000: 137).

The studies that focussed on this matching analyze the role of various location factors during the decision making process of a relocation. They tried to answer the question which location factors are important during this process. However this does not mean that only at that moment matching occurs. We argue that matching is a continuous process which sometimes is made explicitly, but more often implicitly. This means that firms more or less continually assess their location if it still has the spatial production requirements they need. If this assessment (which is essentially a matching) is negative, theoretically companies will respond with relocation when the matching at the new site is better than at the old site. In theory changes in location assessment by firms may come from three different sources:

1. Changes in spatial production requirements of firms (for instance because the output increases, new products are produced or changes in organizational structures of goals).
2. Changes in locational properties and characteristics of location sites (for instance changes in accessibility of the site).
3. Relocations by firms (the assessment changes because an other site is assessed).

In this paper we will analyse the location assessment of firms in general and relate this to relocations and firm performance. There has been some research on location satisfaction of firms (Meester, 2004), but never with a longitudinal dataset. We will perform our analysis on a longitudinal panel survey dataset of firms in the Netherlands in which both stated and revealed information of individual firms was assembled. It is a representative set of firms in which not only relocated firms are present, but also firm which did not relocate. This opens up the opportunity to analyse relocation decisions within the context of the total population of firms, whereas traditional relocation research at the firm level only contained firms that were relocated. This paper is structure as follows. In the next section we introduce our dataset. In section 3 we start our analysis of the location assessment and investigate which factors are important in the overall assessment. In section 4 look at possible changes of the location assessment over time. Are these assessments stable over time or not, and is this assessment influenced revealed relocations? In section 5 we focus on the location assessment in relation to plans to relocate and actual relocations. In section 6 we investigate the relation between firm performance (measured in changes in number of employees) and relocation plans and actual relocations. In the last section we draw some conclusions.

2. The dataset

Our analysis uses survey datasets from the former Chamber of Commerce Rivierenland.¹ The region Rivierenland has 15 municipalities and is of the size of a NUTS 3 region. Rivierenland is situated in the middle of the Netherland between the rivers Lek and Meuse (see figure 1). The river Rhine flows in the middle of the region. It is mainly a rural area with four small towns: Tiel, Gorinchem, Culemborg and Leerdam. The major motorway A2 from Amsterdam to the south of

¹ In 2008 this Chamber merged with the Chamber of Commerce Utrecht and is now called Chamber of Commerce Midden-Nederland (Kamer van Koophandel Midden-Nederland).

the Netherlands runs through the regions and along this motorway there is a higher than average increase in employment.

Figure 1 Location of region Rivierenland in the Netherlands



In 1997-1998, 2000, 2004 and 2007 the chamber held four almost identical surveys among all companies in their region (appropriate 10,000 to 15,000 firms). The survey is called ‘Bedrijven onder Dak’ (BOD) which means “Firms under Cover”, with the aim to analyze the demand for employment land and commercial property in the region. Firms were asked to answer questions about:

- Their current land and floor space use, and location.
- Their satisfaction with their property and location.
- Their plans for renovation, relocation or firm closure.

The response rates of the surveys were relatively high, ranging from 50% in 2004 to 64% in 1997-1998 (see table 1). Because of these high response rates we can make large longitudinal datasets of firms that responded to successive surveys. For our analyses we use the 2004 and 2007 datasets because only these surveys contain questions about the satisfaction on location and property of firms. Firms were asked to provide an evaluation of the location of their current site on a ten-point scale. This mark provides an indication of the degree to which the spatial production requirements of firms match with the locational properties and characteristics of their site. In a subsequent question the firms were asked to indicate for each of 16 locational aspects whether or not they were satisfied with the particular aspect. These aspects represent several distinctive characteristics of their location and property.

Table 1 BOD-survey response

| Year | Number of returned questionnaires | Response rate |
|-----------|-----------------------------------|---------------|
| 1997-1998 | 6,949 | 64% |
| 2000 | 7,796 | 58% |
| 2004 | 7,075 | 50% |
| 2007 | 7,952 | 51% |

For the analysis we use one dataset including firms that responded to both the 2004 and 2007 survey. The 2004 – 2007 BOD dataset contains 3,211 firms, which seems a representative set for the whole population of firms in the region.² The largest group of firms are companies in the commercial service sector. About 36% of the firms belong to this sector. Other large sectors are the retail sector (18% of the firms), building industry (17%), wholesale (10%) and manufacturing (8%). Transport (6%) and catering (4%) are relatively small sectors.³ The public sector is not part of the BOD-survey.

Measured in terms of employment the majority of the firms are small. Two thirds of the firms have an employment of less than 5 full time equivalents (fte's). 14% of the firms have 5-9 fte and 9% 10-49 fte. Less than two percent of the firms have an employment of 50 fte or more. This last

² A thorough analysis on the response was not possible because data on the population at the time of the survey were not available anymore. However, comparing the frequency distribution of the firm location (municipality), sector and size (employment) from the survey with common statistics on these subjects revealed that no particular groups of firms seems to be over or under represented.

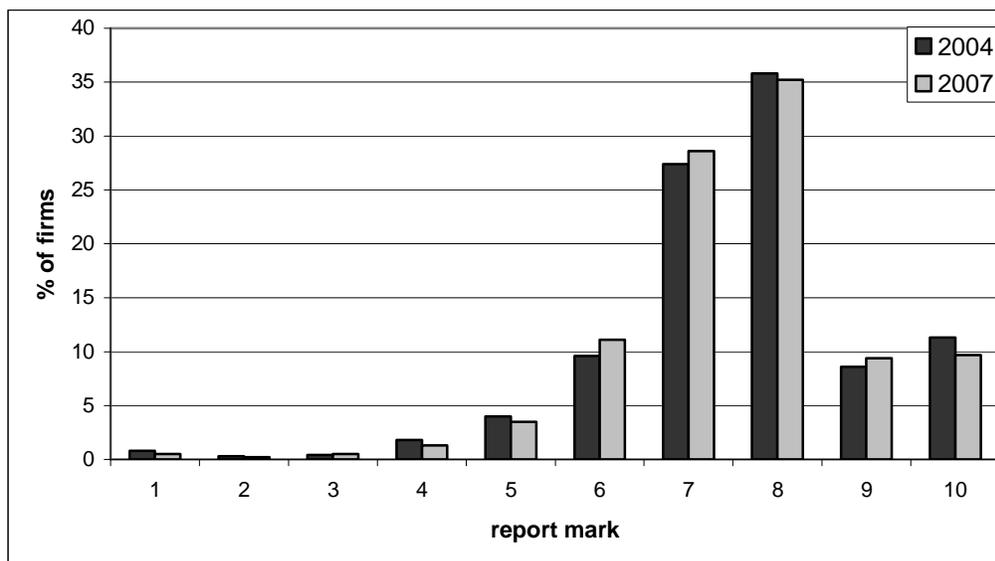
³ There are some small differences in sector composition between the 2004 and 2007 data, because several firms changed their activity from one sector to another.

group is small in number but represents about a third of the total (commercial) employment in the regions.

3. Location assessment

Respondents were invited to express their evaluation of the current location of their firm on a ten-point category scale ranging from 1 (“extremely bad”) to 10 (“excellent”). This response scale is very common in the Netherlands, where, for example, at school report marks are provided on the same ten-point scale. This way, care was taken that the response scale fitted the respondents’ experience when it comes to providing evaluations. The turning point between negative and positive is between 5 and 6 marks. A 5 is negative and a 6 is just positive. In figure 2 the frequencies of the marks are shown. Most firms are rather content with their current site. Only a minority of the firms is negative (a mark below 6) in their judgement. For both years the distribution of the report marks are almost identical. The average report mark in both years is 7.6 and the standard deviation 1.5 (2004) and 1.4 (2007).

Figure 2 Frequency distribution of report marks in 2004 and 2007



The firms were also asked to indicate whether they are satisfied or dissatisfied with the next 16 aspect of their location and property:

- Accessibility
- Road signs
- Maintenance of public space
- Public Transport
- Parking
- The amount of storage area
- Possibilities for loading and unloading
- The possibilities to expand their site
- The possibilities to expand their building
- The utilization of their accommodation
- The representativeness of their building
- The utilization costs of the building (rent, energy, maintenance, etc.).
- The size of the accommodation (firms were asked if their accommodation was too large)
- Security / crime
- Inconveniences such as environmental problems
- Other

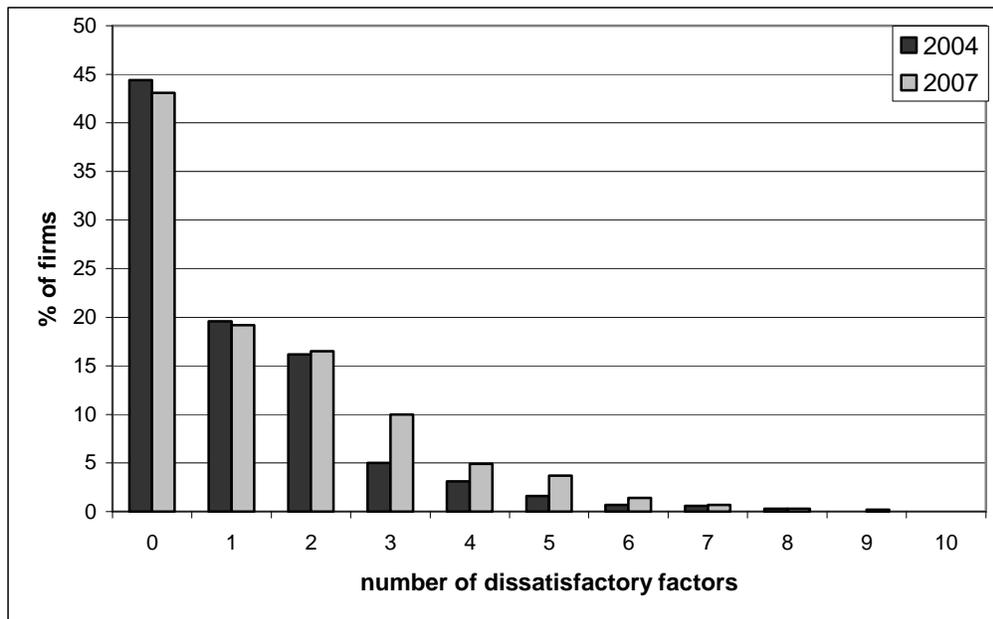
If firms indicated to be satisfied with each of these 16 aspects, we call them completely satisfied. Our hypothesis was that completely satisfied firms would provide a higher mark for the satisfaction with the location of their site than firms that were not completely satisfied. Again the 2004 and 2007 surveys show great resemblance. In 2004, 44% of the firms were completely satisfied and in 2007 43%. The mean mark of the completely satisfied firms was 8.1, while the mean mark for the not completely satisfied firms is 7.1 (2004) and 7.2 (2007) (see table 2). An independent samples t-test shows that the mean marks of both groups differ statistically significantly ($p < 0.01$) in both 2004 and 2007. The results show that firms that have indicated to be satisfied on 16 aspects generally provide a higher mark, thus are more satisfied with the current location of their firm.

Table 2 Mean and standard deviation for completely and not completely satisfied firms

| | mean mark | std. deviation | N |
|-------------------------------------|-----------|----------------|------|
| Completely satisfied firms 2004 | 8.2 | 1.2 | 792 |
| Completely satisfied firms 2007 | 8.1 | 1.2 | 1096 |
| Not completely satisfied firms 2004 | 7.1 | 1.5 | 977 |
| Not completely satisfied firms 2007 | 7.2 | 1.4 | 1443 |

The firms that are not completely satisfied generally mention only one or just a few aspects on which they are not satisfied (see figure 3). The mean number of dissatisfied aspects is 1.42 in 2004 and 1.45 in 2007. Again, the results are quite similar for the 2004 and 2007 surveys. One of the main differences is that in 2007 the frequency on dissatisfaction with 3 to 6 factors is higher than in 2004.

Figure 3 **Frequencies for the number of dissatisfactory factors in 2004 and 2007**



We explored whether the number of aspects on which firms were dissatisfied had an influence on the satisfaction with their current site. For this purpose, we performed a regression analysis (ordinary least squares) with report mark as dependent variable and the number of dissatisfied aspects as predictor, for both years. The analyses showed that such a negative relationship indeed exists. In 2004, the coefficient for ‘number of dissatisfied aspects’ is 0.37 ($R^2 = 17\%$). This means that, on average, the report mark decreases with 0.37 points with each additional dissatisfied aspect. In 2007, this coefficient is 0.28 ($R^2 = 12\%$). Apparently, the effect is stronger for 2004 than for 2007. This raises the question of whether the weight of the various factors in explaining the report mark has changed between 2004 and 2007.

To analyse this we performed a regression analysis (ordinary least squares) in which the report mark is the dependent variable and the predictors are formed by the 16 aspects. These were coded

as “0” if satisfied with the particular aspect and “1” if not satisfied. The results of these analyses are shown in table 4. Most independent variables have the expected negative sign. In 2004, 9 predictors have a statistically significant ($p < 0.05$) impact on satisfaction with the current location and ten predictors in 2007. Eight of these predictors have a statistically significant impact on the satisfaction with the current location in both 2004 and 2007. The predictors can be interpreted in the following way: one unit change in the predictor (thus, from being satisfied to being dissatisfied on the particular aspect) leads to a change in the mark the size of the coefficient. For example, dissatisfaction with accessibility in 2004 is estimated to lead to a decrease in satisfaction of 1.02 points. In both years parking and representativeness of the building have the highest standardized beta's, thus the highest impact on satisfaction. The R^2 for both years is different. In 2004, 25% of the variance in the report mark is explained by the 16 factors and in 2007 only 14%. Apparently the impact of the location and property aspects on the satisfaction with the current location is stronger in 2004 than in 2007.

Table 3 Regression analysis for the report mark in 2004 and 2007

| | 2004 | 2007 |
|---|----------------------|---------------------|
| Accessibility | -1.02** (-6.270) | -0.37** (-4.540) |
| Road signs | -0.48** (-4.053) | -0.05 (-.512) |
| Maintenance of public space | -0.81** (-6.590) | -0.43** (-3.907) |
| Public transport | 0.07 (.706) | 0.03 (.304) |
| Parking | -0.81** (-8.319) | -0.42** (-5.882) |
| The amount of storage area | -0.22 (-1.912) | -0.24* (-2.463) |
| Possibilities for loading and unloading | -0.21 (-1.574) | -0.34** (-3.355) |
| The possibilities to expand the site | -0.38** (-3.678) | -0.27** (-2.995) |
| The possibilities to expand the building | -0.17 (-1.635) | -0.15 (-1.675) |
| The utilization of their accommodation | -0.18 (-.906) | -0.03 (.167) |
| The representativeness of their building | -0.98** (-7.338) | -0.94** (-8.559) |
| The utilization costs of the building (rent, energy, maintenance, etc.) | 0.01 (.068) | -0.20 (-1.271) |
| The size of the accommodation (firms were asked if their accommodation was too large) | 0.15 (.422) | -0.28 (-.913) |
| Security / Crime | -0.37** (-2.677) | -0.35** (-2.814) |
| Inconveniences such as environmental problems | -0.75** (-4.710) | -0.68** (-4.354) |
| Other.... | -0.61** (-4.4470) | -.51** (-3.877) |
| R² | 0.247 | 0.140 |

t-values in parentheses.

** = $p < 0.01$; * = $p < 0.05$.

4. Location assessment over time: stable or not?

We showed previously (see table 2) that the mean satisfaction of completely satisfied firms and that of not completely satisfied firms did not seem to change between 2004 and 2007. We used a paired t-test for related samples to explore the stability of the mean satisfaction over time (see table 4). The results showed that the mean satisfaction with the location did not change statistically significantly over time.

Table 4 Paired sample statistics on report mark in 2004 and 2007

| | Mean | N | St. deviation | Std. error mean |
|------------------|------|------|---------------|-----------------|
| Report mark 2004 | 7.6 | 1608 | 1.5 | .036 |
| Report mark 2007 | 7.6 | 1608 | 1.4 | .035 |

However, when looking at the 16 aspects there are some striking differences in the number of times that the aspects had been indicated over time (see table 5). There are 4 aspects which show statistically significant differences over time with regard to being satisfied or not (McNemar change test for related samples: $p < 0.05$). Firms indicated more frequently to be dissatisfied with the factors accessibility, road signs, and parking in 2007 than in 2004. For the factor 'Other..' it is the other way round: less firms here dissatisfied in 2007 than in 2004. Apparently these changes did not have a major effect on the mean report mark, which was stable over time. What we do see is that their beta coefficients in table 4 are much lower in 2007 than in 2004. With regard to road signs, this was a statistically significant predictor for satisfaction in 2004, but not in 2007.

Table 5 Changes in share of dissatisfied firms and report marks for the 16 factors (gray marked cells imply a significant change between 2004 and 2007)

| | Share dissatisfied firms | | Mean report mark satisfied firms | | Mean report mark dissatisfied firms | |
|---|--------------------------|------|----------------------------------|------|-------------------------------------|------|
| | 2004 | 2007 | 2004 | 2007 | 2004 | 2007 |
| Accessibility | 4.0 | 12.3 | 7.6 | 7.7 | 5.9 | 6.9 |
| Road signs | 8.5 | 12.1 | 7.6 | 7.6 | 6.8 | 7.1 |
| Maintenance of public space | 7.7 | 7.5 | 7.6 | 7.6 | 6.4 | 6.9 |
| Public transport | 11.5 | 12.5 | 7.6 | 7.6 | 7.3 | 7.4 |
| Parking | 14.4 | 18.1 | 7.7 | 7.7 | 6.5 | 7.0 |
| The amount of storage area | 10.9 | 10.7 | 7.6 | 7.6 | 6.8 | 7.0 |
| Possibilities for loading and unloading | 7.4 | 8.2 | 7.6 | 7.6 | 6.6 | 6.7 |
| The possibilities to expand the site | 19.2 | 17.7 | 7.7 | 7.7 | 6.8 | 7.0 |
| The possibilities to expand the building | 17.4 | 16.6 | 7.7 | 7.7 | 6.9 | 7.0 |
| The utilization of their accommodation | 3.2 | 2.7 | 7.6 | 7.6 | 6.5 | 6.8 |
| The representativeness of their building | 6.8 | 7.4 | 7.6 | 7.6 | 6.2 | 6.5 |
| The utilization costs of the building (rent, energy, maintenance, etc.) | 3.5 | 3.4 | 7.6 | 7.6 | 7.0 | 7.1 |
| The size of the accommodation (firms were asked if their accommodation was too large) | 0.6 | 0.9 | 7.6 | 7.6 | 7.8 | 7.1 |
| Security / Crime | 5.6 | 5.7 | 7.6 | 7.6 | 6.9 | 7.0 |
| Inconveniences such as environmental problems | 4.4 | 3.8 | 7.6 | 7.6 | 6.5 | 6.7 |
| Other.... | 6.0 | 3.8 | 7.6 | 7.6 | 6.7 | 6.9 |

5. Relocations and location assessment

In the previous section we analyzed the location assessment in general. In this section we focus on the (possible) changes in locations assessment in relation to planned relocations and actual relocations. In the survey firms were asked whether they had plans to relocate. From their actual address we knew if relocation took place between 2004 and 2007. From previous research on the same dataset we know that almost 30% of the firms with relocation plans actually did move. On the other hand 10% of the firms which did not have relocation plans did move between 2004 and 2007 (Goetgeluk et al., 2009). Actually more firms without plans in 2004 had moved between 2004 and 2007 than companies with plans to relocate (see table 6).

Table 6 Intensions to relocate and actual relocation between 2004 and 2007 in % of total (N=3.211).

| | Moved 2004-2007 | Stayed 2004-2007 | Total |
|------------------------|-----------------|------------------|-------|
| Intension to move 2004 | 2% | 5% | 0.07 |
| Intention to stay 2004 | 9% | 84% | 0.93 |
| Total | 11% | 89% | 100% |

Source: Goetgeluk et al., (2009)

Analysis on report mark

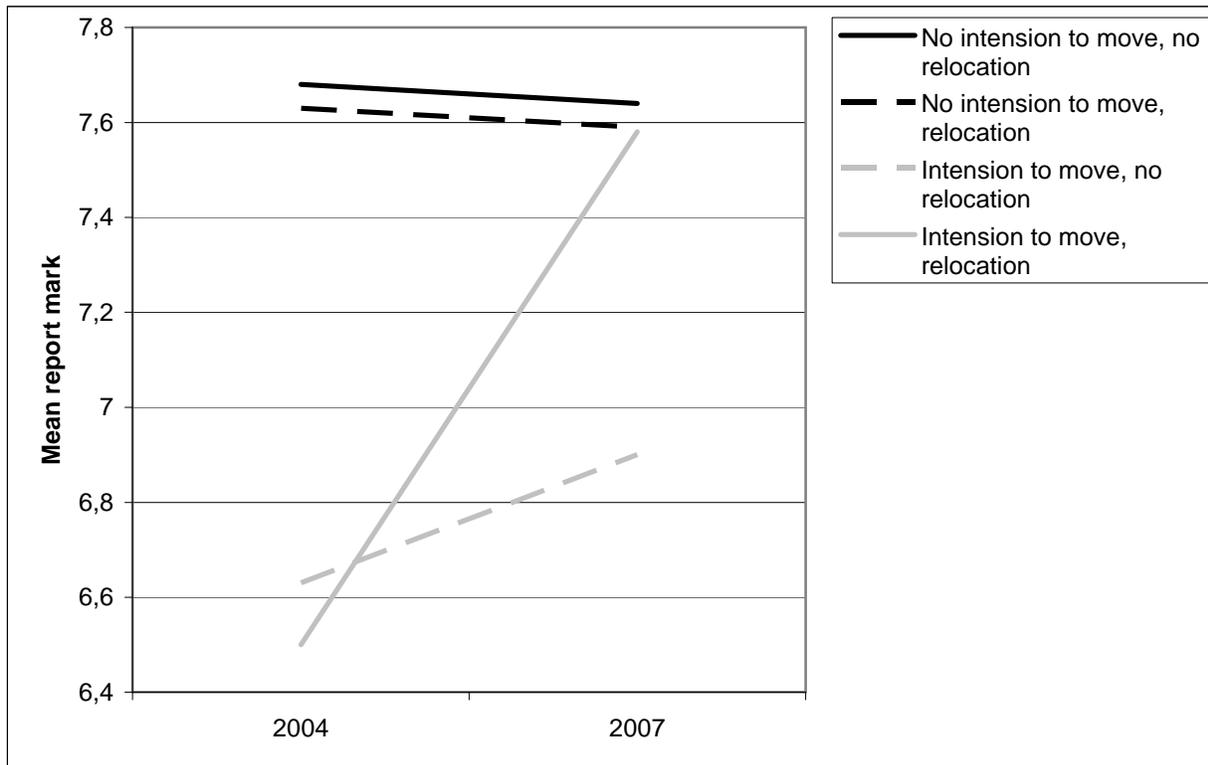
The theoretical assumption behind relocations is that relocations occur because there is an insufficient match between spatial production requirements and locational properties and characteristics of sites. This implies that relocation should improve this match. In our data set we were able to explore this potential effect by looking into changes in the mean report marks and the rates of dissatisfaction on the 16 factors. Because of our longitudinal dataset we can make a distinction in four groups of firms based on their stated and revealed preference on relocation (see also table 6):

- Firms who intended to relocate in 2004 but stayed at their site. (n = 146)
- Firms who intended to relocate and did relocate between 2004 and 2007. (n = 47)
- Firms who intended to stay, but relocated between 2004 and 2007.(n = 85)
- Firms that intended to stay and stayed at their site.(n = 1298)

The changes in the mean report mark are shown in figure 4. This figure shows clearly that firms which had relocation plans in 2004 reported lower satisfaction with their site than firms without relocation plans. A paired-samples t-test showed that the mean satisfaction scores of these groups differed statistically significantly in 2004. Figure 4 also shows that firms with the intention to relocate in 2004 and that did relocate between 2004 and 2007 did give their new 2007 site a statistically significant ($p < 0.01$) higher report mark than their former 2004 site. On the basis of this result we can conclude that relocation improves the match spatial production requirements and site characteristics. However, there is also a group of firms that relocated and that did not improve this match (their mean report mark did not change between 2004 and 2007). This group, which is larger than the former, had no relocation plans in 2004, but did relocate between 2004 and 2007. This seems to imply that for this group relocation is not induced by a dissatisfactory

match (at least not in 2004). Finally, in the group who wanted to relocate but did not do so, the satisfaction with the current location did not change over time.

Figure 4 Mean report mark of stated/revealed groups in 2004 and 2007.



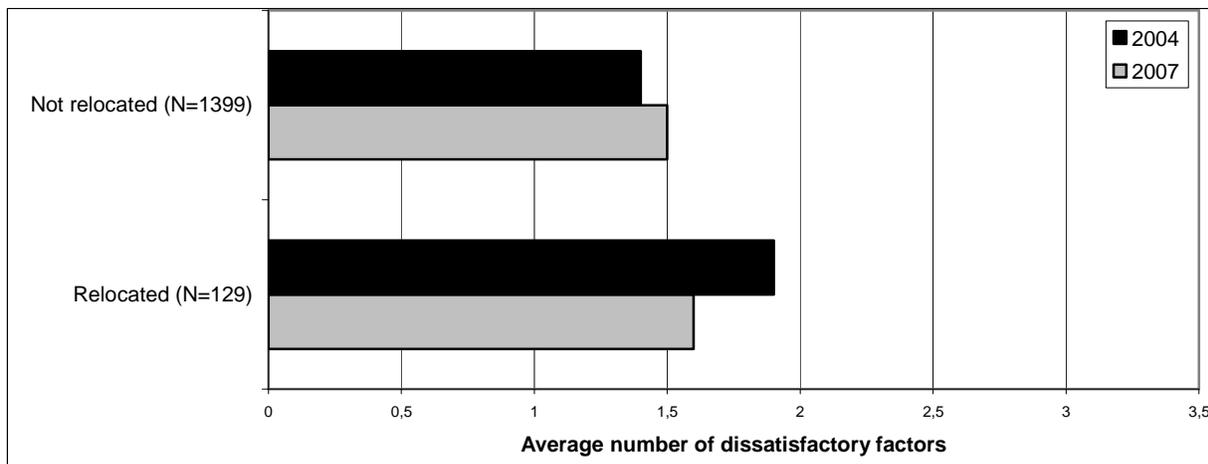
So, we now have two groups of firms that did relocate. One group in which an initially dissatisfactory match seems to have influenced the relocation and another (larger) group in which there was no initially dissatisfactory match. This corresponds with the findings of Van Dijk en Pellenbarg (2000). Their results indicate that the decision to relocate is mainly determined by firm internal factors and to a lesser extent by site related factors. However, we have to realize that we only have an indication about the match in 2004 and 2007. Within these three years much can happen which might have influenced this match. For instance firm internal factors can change rapidly which have an initially negative effects on the match. This requires immediate action in

the form of a relation to improve the match. If this happens within a period of three years the change in report mark and plans for relocation will be unnoticed.⁴

Analysis on 16 factors

Firstly, we explore the relationship between actual relocation and the dissatisfaction with the 16 aspects. Firms that relocated between 2004 and 2007 had statistically significantly (independent samples t-test , $p < 0.01$) more dissatisfactory factors in 2004 (mean = 1.9) than firms that did not relocate (mean = 1.4). In 2007 this distinction between the groups had disappeared ($p = 0.65$) (see figure 5).

Figure 5 Average number of dissatisfactory aspects in 2004 and 2007 for the groups that did relocate and did not relocate (the population is the group of firms with at are not totally satisfied).

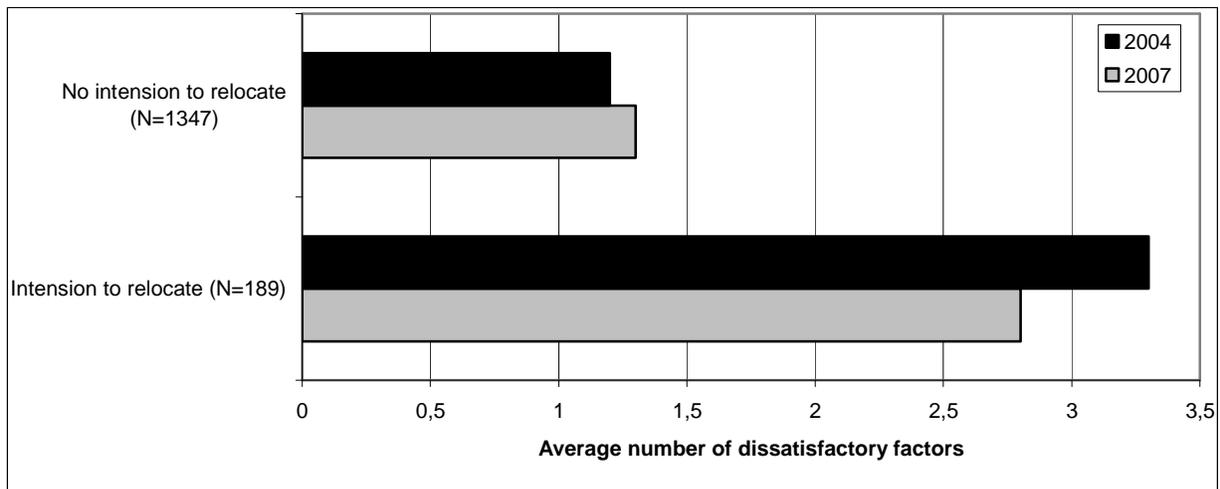


Next, we explored whether firms with relocation plans in 2004 indicated more dissatisfactory aspects (see figure 6). Firms with relocation plans in 2004 had significantly more dissatisfactory aspects than firms without plans to relocate ($p < 0.01$). In 2007 this was also the case: firms with relocation plans in 2004 still had significantly more dissatisfactory factors in 2007 than firm without relocation plans ($p < 0.01$). This is probably due to the fact that most of the firms with relocation plans did not relocate at all. Figure 6 also displays a small reduction in the number of

⁴ It can also be argued that Van Dijk and Pellenbarg use another conceptual model then we do. In our matching model all firms internal and external factors do have an influence on the behaviour of firms and are 'translated' into a set of spatial production requirements. That means that these internal and external factors are strongly related to these requirements. Van Dijk and Pellenbarg call these requirements location factors (site and situation) and consider them as unrelated variables in explaining relocations.

dissatisfactory factors between 2004 and 2007 in the group of firms with an intension to relocate. This is probably due to the same explanation.

Figure 6 Average number of dissatisfactory aspects in 2004 and 2007 for the groups with and without relocation plans (the population is the group of firms with at are not totally satisfied).



Comparing the figures 5 and 6 leads to the same conclusion as we draw from our analysis of figure 4: dissatisfaction with particular site related aspects can only partially explain whether a firm relocates or not. However there is a strong relationship with the number of dissatisfactory aspects and the intension to relocate. This raises the question which factors are responsible for this difference. With a χ^2 test we tested the relation between each of the 16 aspects and 1) the propensity to move and 2) whether the firm had actually moved. In table 7 the statistically significant factors are shown. This table clearly shows that more aspects are significantly related to plans to relocate than to the actual relocation. There is one other remarkably conclusion to be made. That is that the factors which are significantly related to the actual relocation are only building related aspects. None of the location related factors is significant related to the actual relocation, whereas they are with plans to relocate. This is remarkable because the location related aspects such as accessibility and parking showed to be statistically significant predictors of the satisfaction with the current location. This corresponds with research by Pellenbarg (see for overview, Van Dijk & Pellenbarg, 2000) who found that lack of space for expansion is always

the number one push-factor for relocations. This lack of space is often related to an increase in employment.

Table 7 Significant factors in relation to relocation plans and actual relocations

| | Plans to relocate | Actual relocation |
|---|-------------------|-------------------|
| Accessibility | X | |
| Road signs | X | |
| Maintenance of public space | | |
| Public transport | | |
| Parking | X | |
| The amount of storage area | X | X |
| Possibilities for loading and unloading | X | |
| Possibilities to expand the site | X | |
| Possibilities to expand the building | X | X |
| Utilization of the accommodation | X | X |
| Representativeness of the building | X | X |
| Utilization costs of the building | X | X |
| Size of the accommodation (to large) | X | X |
| Security / Crime | | |
| Inconveniences such as environmental problems | X | |
| Other | X | |

6 Firm performance and relocation

In this section we analyse whether firm performance in terms of employment growth leads to relocations as the previous sections seems to suggest. It is important to know that in 53% of the firms in the dataset the level of employment in 2004 and 2007 was the same.⁵ In 21% of the firms the level of employment decreased and in 26% it increased. In general changes in employment on the firm level are very small (mostly in the range of 1 fte), which can be explained by the large

⁵ It is possible that between 2004 and 2007 the level of employment did change, but we do not know this.

number of small firms in the dataset. This limits our possibilities for the analysis: we can not use the change in employment as continuous variable but only as categorical. We recoded the development in the employment in three groups of firms: stable, increase and decrease. According to a chi² test between relocation (2004-2007) and change in employment (2004-2007) there is no significance relation between these variables ($p=0.22$), although the rate of relocations is little bit higher among firms with an increase in employment.⁶ So we can conclude that an increase in employment is not *the* explanation for relocations. However, there is a significant relation between employment growth (2004-2007) and plans for relocation in 2007 ($p<0.01$). There is also a significant relation between employment growth (2004-2007) and plans for relocation in 2004, which may indicate that firms were expecting employment growth.

7 Conclusion

Due to a unique longitudinal dataset we were able to analyse location assessment by firms in relation to their stated and revealed preferences on relocation. In general most firms are satisfied with their location and most aspects of their site and property. This implies that their match between spatial production requirements and locational properties and characteristics are good. Relatively high levels of dissatisfaction appear on aspect such as parking and possibilities to expand the site or the building. On the firm level the degree of satisfaction with the site hardly changed over time.

Our analysis confirms earlier research that there are significant differences between stated and revealed preferences. Only a minority of the firms with relocation plans actually relocated, whereas 10% of the firms without relocation plans actually did relocate. When we analysed the relation between the assessment of firms of the site and their stated and revealed preference on relocations we found some evidence that there is a stronger relation between the propensity to relocate and the assessment than when between the assessment and actual relocations. So firms that have a relative poor match between their spatial production requirements and locational properties and characteristics of their site, are more likely to have relocation plans but are not likely to relocate more than firms with a relative good match.

There is also a striking difference in the relation between 16 aspects of the site on which the firms could express their satisfaction or dissatisfaction, and their stated and revealed preference on

⁶ 12.8% of the firms with an increase in employment did relocate, whereas 11.3% of the firms with a stable employment level and 9.9% of firms with a decrease in employment.

relocations. Of these 16 aspects 13 are significantly related to relocations plans, but only 6 to actual relocations. These 6 aspects are all related to the buildings of the firms. Not of the location related aspects was significantly related to actual relocations by 5 are with plans to relocate. We therefore tentatively conclude that location related aspects to a certain degree can explain the propensity to move, but can not explain the actual relocation. This actual relocation is only significantly related to some building related factors.

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