

INTER-FIRM CO-OPERATION AS A REGIONAL DEVELOPMENT POTENTIAL?

With 5 figures and 12 tables

STEFANIE LOWEY

Zusammenfassung: Unternehmenskooperationen als regionales Entwicklungspotential?

Im vorliegenden Beitrag wird die Frage untersucht, ob Unternehmenskooperationen Potentiale zur Realisierung endogener Entwicklungsstrategien auch vor dem Hintergrund eines verschärften Wettbewerbs durch Globalisierung ökonomischer Aktivitäten darstellen. Falls Kooperationen ein endogenes Potential in einer solchen Regionalentwicklungsstrategie bilden, sollten die folgenden Bedingungen erfüllt sein:

- hohe Kooperationsneigung regionaler Unternehmen, eine breite Basis intraregionaler Kooperationen;
- keine einseitigen Abhängigkeiten zwischen den Kooperationspartnern;
- ein positiver Zusammenhang von Kooperationen mit dem Unternehmenserfolg;
- Ausübung strategisch wichtiger Kooperationsfunktionen durch regionsansässige Partner.

Diese Kriterien wurden in einer empirischen Studie zum Kooperationsverhalten im Maschinenbau, die in Unter- und Mittelfranken (Nordbayern) durchgeführt wurde, untersucht. Der starken Dominanz kleiner Unternehmen im Untersuchungsgebiet entsprechend wurde die Darstellung auf Kooperationen kleiner Unternehmen mit ihren Abnehmern konzentriert.

In der empirischen Untersuchung zeichneten sich folgende Ergebnisse zur Ausgestaltung der Kooperationen ab:

1) In der Untersuchungsregion ist eine hohe Kooperationsneigung festzustellen, große Unternehmen kooperieren jedoch eher als kleine Unternehmen. Intraregionale Kooperationen werden eher von kleinen als von Großunternehmen unterhalten.

2) Hinsichtlich der Größenverhältnisse zeigt sich eine Dominanz von Kooperationen zwischen kleineren Zulieferern und ihren größeren Abnehmern. Besonders für kleine Unternehmen sind Kooperationen mit starken ökonomischen, für einen kleineren Teil auch produktionstechnischen Abhängigkeiten verbunden.

3) Der Zusammenhang von Kooperationen und Unternehmenserfolg ist mehrdeutig. In der Tendenz zeichnet sich ab, daß kleine, ausschließlich mit Großunternehmen kooperierende Unternehmen eine ungünstigere Umsatzentwicklung verzeichneten sowie weniger innovativ sind. Starke Abhängigkeiten zwischen den Kooperationspartnern stehen eher mit einer negativen Innovationsentwicklung, hingegen mit einer positiven Umsatzentwicklung im Zusammenhang.

4) Als strategisch relevante Kooperationen wurden hier Entwicklungskooperationen untersucht. Obwohl ein hoher Anteil dieser Kooperationen zwischen kleinen und großen Unternehmen besteht, zeichnet sich keine positivere Entwicklung der so eingebundenen kleinen Unternehmen gegenüber den in anderen Bereichen kooperierenden Unternehmen ab.

5) Der Vergleich intraregionaler mit interregionalen/internationalen Kooperationen zeigte, daß erstere stärker durch ökonomische Abhängigkeiten geprägt sind.

Diesen Ergebnissen zufolge kann für die Untersuchungsregion nicht von einer generellen Eignung von Kooperationen als regionales Entwicklungspotential ausgegangen werden. Einzelne Typen zwischenbetrieblicher Zusammenarbeit könnten hingegen durchaus mit positiven regionalwirtschaftlichen Effekten einhergehen. Ob sie eine tragfähige Grundlage einer kooperativen Regionalentwicklungsstrategie darstellen, bedarf jedoch weiterer Untersuchungen.

Summary: In this article the question is examined whether inter-firm co-operation is a potential for the realisation of an endogenous development strategy even under the conditions of increased competition caused by globalisation of economic activities.

If co-operation is an endogenous potential in such a regional development strategy the following criteria should be fulfilled:

- high tendency to co-operate, a broad base of intraregional co-operation.
- no one-sided dependencies between the co-operation partners,
- strategic co-operation functions are performed by indigenous partners,
- co-operation of indigenous enterprises shows a positive correlation with a firm's success.

These criteria were examined in an empirical study focusing on co-operation behaviour in the machinery industry in Lower and Middle Franconia (Northern Bavaria). According to the dominance of small firms in the research area, the exposition focused on the co-operation of small firms with their clients.

The following results became apparent:

1) Firms in the research area have a high tendency to co-operate, large firms are more likely to co-operate than small firms. Intraregional co-operation is made up more of small than of large firms.

2) Regarding size relationships between the partners co-operation between small suppliers and their large clients predominates. For small firms especially co-operation is linked to strong economic, to a smaller extent even to production-based dependencies.

3) The correlation between co-operation and firm success is ambiguous. As a tendency it becomes apparent that small firms co-operating only with large firms have a less favorable development of turnover and are less innovative than small firms co-operating only with small customers. Firms being strongly dependent on their co-operation partners show a tendency to implement innovations to a smaller degree, but have a more favourable development of turnover.

4) As a strategically important type of co-operation collaboration in development was examined. Though co-operation exists to a great extent between small and large firms, a higher share of firms cannot be noted with a positive development compared to the firms co-operating in other fields.

5) The comparison of intraregional and national/international co-operation showed that the first is characterized to a larger extent by economic dependencies and less strategic significance.

According to these results one cannot suppose a general suitability of co-operation as a regional development potential. Specific types of inter-firm collaboration however can go along with positive regional economic effects. Whether they make up a solid base for a co-operative regional development strategy has to be the subject of further research.

1 Introduction

For some years a dichotomy has dominated the discussion concerning contemporary trends in regional development: regionalisation and globalisation. Regarding the spatial interaction of economic activities this dichotomy seems to disappear: "There is . . . a double movement of globalisation on the one hand and devolution, decentralisation or localisation on the other" (SWYNGEDOUW 1992, 42). When the discussion deals with the power relations behind the processes significant divergencies in opinions arise: are regional economic activities dominated by global activities or is there a complementary relation? While one side gathers proof for the domination of regional interests by global corporations the other side does not tire of citing industrial districts as examples of success for regional self-reliant development in global competition.

Inter-firm co-operation plays an important role in this discussion. Growing competition from developing and newly industrializing countries, unstable demand and shortened product cycles cause the growth of market insecurities and of intensity of competition. Firms react by decentralising the production, outsourcing and co-operating with other firms. Co-operation is intended to improve the position in competition by reduction of costs, entry into markets, extension of capacities and reduction of market risks. Furthermore, they allow an expansion of the entrepreneurial area of influence without causing the financial risk of mergers and acquisitions.

As a result of the positive development of some regions where 'networks of small firms' like industrial districts are the dominating organisational form of production, regional politicians and planners all over the world are trying to initiate and support such small-firm co-operation with the idea of an endogenous regional development strategy (COLLETIS 1994; PLOUGMAN 1994; SEMLINGER 1994). The adop-

tion of these strategies requires that the positive effects of small-firm co-operation are not bound to the specific conditions in the ideal regions.

At this point a considerable empirical gap exists: which inter-firm co-operation can develop in "normal regions" (KRUMBEIN et al. 1994) and whether they form a potential for the realisation of an endogenous development strategy also under the present conditions of global competition remains unclear. In order to reduce this deficit the question of the suitability of co-operation as a regional development potential is examined in this article. It is based on an empirical study of the machinery industry in Franconia (Bavaria).

2 Co-operation in an endogenous development strategy

The rise of endogenous development strategies was caused by criticism concerning the traditional regional policy of the 60s and 70s. The classical, capital-orientated regional policy from above led to misallocation and dependencies and was therefore intended to be replaced by an endogenous strategy from below (HAHNE 1985; STÖHR 1981). The principal elements of that strategy are (BRUGGER 1984; COLLETIS 1994):

- use of the regional economic, ecological, cultural and political potential,
- regional control over decision mechanisms,
- establishment of regional product cycles.

Small and medium-sized enterprises (SMEs) as the basis for middle-class regional economy constitute the decisive economic potential of these regional policy activities (FRIEDMANN 1986). Small firm research (BIRCH 1979; ZEITEL 1990; AIGINGER a. TICHY 1985) gave empirical proof of the suitability of fostering small firms as a target group for a self-reliant regional development. As small firms created far more jobs than large firms researchers deduced their structural superiority: small firms were supposed to be more

flexible, closer to markets and more innovative than large firms (AIGINGER a. TICHY 1985; FRITSCH 1987).

Sobering results of small enterprise research in the late 80s (LOVEMAN a. SENGENBERGER 1990; RAINNIE 1989) questioned the postulated general superiority of small firms. Empirical examples of economically successful regions, which were dominated by small firms, helped to discover another decisive feature for regional prosperity: co-operation between small firms. Such co-operation characterizes inter-firm relationships regulated neither exclusively by directives (as intra-organizational decision processes) nor only by price (as market-led processes).

Co-operative regions of extraordinary economic success were principally discovered in Italy (Emilia Romagna), USA (Silicon Valley, Route 128), Denmark (Jutland), Germany (Baden-Württemberg) (see: PYKE, BECATTINI a. SENGENBERGER 1990; BERGMAN, MAIER a. TÖDTLING 1991). Size-related disadvantages of small firms such as weak financial basis, low production capacities and insufficient distribution capacities were supposed to be compensated for by small firm co-operation, their size-related advantages to have been used (PYKE, BECATTINI a. SENGENBERGER 1990). As co-operation in Italian regions of economic success takes place to a great extent within the region, regional product cycles produce accelerator and multiplier effects in the region. Thus it meets the requirements of endogenous development strategies (GLATZ, ROHRMOSER a. SCHEER 1981; HAHNE 1985; SCHLEICHER-TAPPESETER et al. 1992). The contemporaneous existence of extraregional linkages facilitates the entry into innovations and maintains the dynamics of the regional development (BRUGGER 1984; COLLETIS 1994). Furthermore, it is emphasized that co-operating firms are embedded in a dense societal and political regional context (milieu, see CAMAGNI 1991) which forms an important supporting frame of reference (TRIGILIA 1990).

While the concepts of endogenous and co-operative regional development strategies were at first limited to the potentials of small firms and were often accused of ignoring global competition (GROTZ a. BRAUN 1993), recent studies also refer to co-operation between small and large firms (e.g. PEDERSEN 1991; SABEL 1994). Here a direct relationship between regional small-firm activities and the global activities of large firms is established. Increased global competition forces large enterprises to restructure and make their production more flexible by out-sourcing. Then, these functions are transferred to small firms which act on regional markets. As agglomeration reduces transaction costs, this process is supposed to lead to spatial concentra-

tion and re-regionalisation (SCOTT 1988). Small firms take over strategic functions in the production process. Therefore this type of co-operation is also regarded as being compatible with an endogenous development strategy. SABEL even talks of the resurgence of new industrial districts, in which a "two-fold convergence of large- and small-firm structures" emerges (SABEL 1994, 103). Also, cited here are examples of the Third Italy, Baden-Württemberg and Denmark.

Two principal criticisms are formulated against this argumentation. The first refers to the focus of empirical studies on a few successful regions with a specific regional milieu. For this reason the replicability of this development must be discussed. Thus, it is questioned whether a specific regional context is necessary or renunciable for the realisation of a co-operative regional development strategy (PYKE a. SENGENBERGER 1990; HADJIMICHAELIS a. PAPAMICHOS 1991; GROTZ a. BRAUN 1993). For a regional analysis of co-operation three questions have to be asked concerning this point:

1. Are small co-operating firms successful without a supporting milieu?
2. Are strategic regional potentials used in these cases of co-operation?
3. Are regional product-cycles initiated and maintained even under the pressure and possibilities of global competition?

The second criticism refers to the ignorance of the power of global firms. The policy of large firms allows a decentralization of locations without a decentralization of power, therefore, dependencies increase (AMIN 1992). Recent studies on the Third Italy support the assumption that even there co-operation is not a guarantee for permanent success of a self-reliant strategy (HARRISON 1994; TELLJOHANN 1994). According to HARRISON (1994) processes of concentration and domination of co-operating suppliers by global corporations take place in the region. Decisions are increasingly made outside the region, intraregional control is undermined. This position also questions the general adequacy of co-operation as a basis for an endogenous development strategy. Here, co-operation creates one-sided dependencies instead of promoting self-reliance.

The discussion of power and dependency in co-operation has become a central theme for proponents and critics of co-operative regional development. However, there is both little theoretical background as well as empirical evidence on this question (SYDOW 1992). According to FRITSCH (1992) and GRABHER (1994) dependencies and power-disequilibria arise through a lack of redundancy in co-operation (see

4.2). A similar concept stresses the importance of weak ties which – in contrast to strong ties – facilitate information transfer as well as flexibility and adaptability of co-operative networks (GRANOVETTER 1973; GRABHER 1993). However, according to KRACKHARDT (1992) strong ties can also create positive effects for co-operating firms, such as stability and trust.

The resource dependence approach (PFEFFER 1987) and the network approach (HÅKANSSON a. SNEHOTA 1995; JOHANSON a. MATTSSON 1987) refer to disequilibrium in power distribution between co-operation partners which results from the unequal distribution of resources. Co-operation is entered into in order to reduce dependencies, at the same time it creates them (JOHANSON a. MATTSSON 1987, 38).

In these approaches equilibrated relationships are not inevitably bound to inter-firm 'networks' as is postulated by some advocates of co-operative regional development. Proponents of the weak ties-/redundancy concept assume that dependencies in general exert a negative effect on regional development while in endogenous development strategies only the negative effect of one-sided dependencies is emphasized.

3 The concept of the study

According to the portrayed discussion the following correlations have to be examined: Positive effects of co-operation on regional development can be assumed if:

- no one-sided dependencies between the co-operation partners exist (4.2),
- strategic co-operation functions are performed by indigenous partners (4.3),
- co-operation of indigenous enterprises shows a positive correlation with a firm's success (4.4),
- intraregional co-operation takes place on a broad base (4.5).

The focus of the study is on small firms. As a frame of reference small-firm co-operation is compared to co-operation of other firms in the research area. In order to elucidate the influence of the size of partners the investigation is differentiated according to their size classes. Regarding the described concepts, especially co-operation of small firms with small and medium-sized firms and co-operation between small and large firms is analysed. From this analysis the conclusions concerning the suitability of co-operation as a regional development potential can be drawn:

- If co-operation of the firms under research does not match the examined conditions it does not serve as a regional development potential.

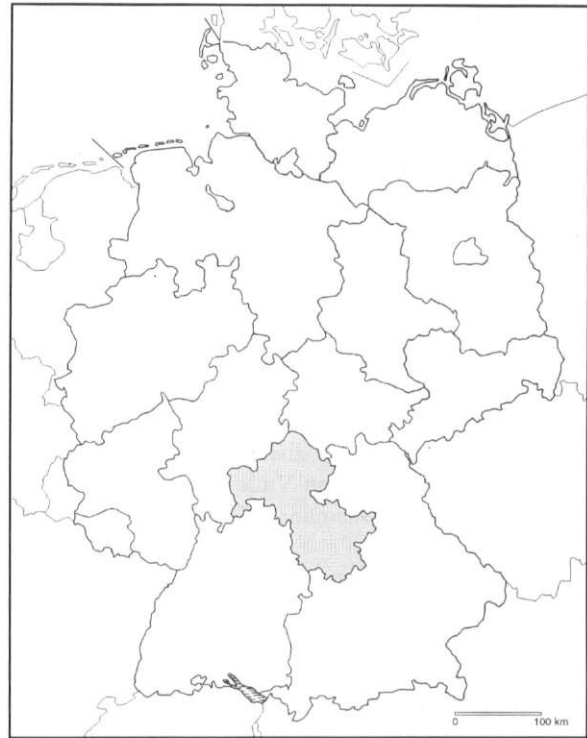


Fig. 1: Location of the research area
Lage des Untersuchungsgebietes

- If there is a negative deviance of specific types of co-operation compared to other types the suitability of this kind of co-operation for an endogenous development strategy is questionable.

With the aim of avoiding the situation that heterogeneity of industry limits the significance of the results, the analysis was limited to the machinery industry, which can be characterized by the following features favouring co-operation between firms (REICHWALD a. DIETL 1990, 407):

- small and medium-sized firm structure,
- domination of order-based single and small-series production requires high flexibility,
- strong competition requires the reduction of cost.

As mentioned above the selected area of study should be a region with neither a specific milieu nor an extraordinary economic development, i.e. an average or 'normal' region (KRUMBEIN et al. 1994). The economic indicators of the chosen area of research, Lower and Middle Franconia (Bavaria, see Fig. 1), demonstrate an average economic status. Interviews with representatives of the regional chambers of commerce and regional policy-makers did not indicate the existence of a specific regional context.

Table 1: *Firm structure in the sample*

Unternehmensstruktur in der Stichprobe						
	< 50 (SE)	50-199 (ME I)	200-499 (ME II)	> 55 (LE)	-	n
a) abs. No.	97	41	18	33	189	189
b) No. in %	51.3	21.7	9.5	17.5	100.0	189
c) singleplant in %	72.9	22.9	4.2	-	100.0	118
d) multiplant in %	15.5	19.7	18.3	46.5	100.0	71

Source: Own investigations, 1995

The basis of the study are 190 partly standardized oral interviews, 59.4% of the defined data base. The firms are subdivided into 4 size categories. As it can be assumed that firms which belong to a multi-plant enterprise can use the resources of the whole corporation, e.g. management capacities, and are embedded in its decision structures, the analysis is based on the size category of the whole corporation.

The size-class composition of the firms interviewed is characterized by the dominance of small and medium-sized firms (see Tab. 1, a, b), as we find them in the Federal Republic of Germany. Firms with less than 50 employees make up 51.3% of the sample. The small firm structure also becomes apparent regarding the high share of single-plant firms, which belong with a share of almost three quarters to the lowest size class (Tab. 1, c). Only 5 of the 118 single-plant firms have more than 200 employees, none more than 500. Nearly half of the 71 firms of multi-plant enterprises have more than 500 employees (Tab. 1, d), 4 have less than 50 employees. All plants of international corporations and 11 of the 47 multi-plant enterprises belong to the highest size category.

The central focus of the interviews is on the existence and form of co-operation. First, co-operation is distinguished from a market relation as being a relation between partners which is characterized by continuity and in which the price is not the decisive criterion for placing an order. In contrast to intra-organizational relations in co-operation there is no controlling majority interest. A contract is not a criterion for the definition of a co-operation as it can be assumed that small firms do not safeguard their collaboration by contracts (HÅKANSSON 1989; LAZERSON 1993). Further differentiation of co-operation is undertaken in the representation of the empirical results.

4 Characteristics of inter-firm co-operation in Lower and Middle Franconia

4.1 The co-operative base

According to the broad definition of co-operation: "long-term co-operation, in which the price is not the decisive criterion for placing an order", 98% of the firms questioned co-operate. A first differentiation of the co-operation intensity is made between regular partnerships and close co-operation. Regular partnerships only characterize a long-term exchange relationship which can be linked to experience exchange; there is no intended co-operation. This long-term relationship reduces the expense of searching for exchange partners and thus reduces transaction costs. Close co-operation instead can be characterized by additional activities as e.g. joint development, know-how transfer, distribution or production planning. It is not necessarily bound to a co-operation contract. By this kind of inter-firm collaboration co-operation benefits can be realised (e.g. extension of capacities, reduction of personnel- and production costs). At the same time, one-sided or mutual dependencies become more probable. 81% of the enterprises in the research area have close cases of co-operation which indicates a broad basis of co-operation in the research area.

The tendency to co-operate closely differs significantly between the size categories: 97% of the large firms interviewed have such co-operation, while only 74% of the small firms co-operate closely. As this size-related difference only becomes visible in close co-operation it can be assumed that small firms expect less from a more intensive co-operation or that they themselves are less attractive as co-operation partners.

The size-specific differences in the intensity of co-operation let assume that firms belonging to large enterprises are also overrepresented as close co-operation partners. The analysis of the co-operation partners tends to confirm this assumption: 33% of regular partners and 38% of close partners are large enterprises. In the analysis of the value chain one can recognize clearer differences: while small enterprises make up 45% of the suppliers (Fig. 2), their share of customers as co-operating partners is only 16%. The share of large enterprises stands in inverse proportion. Regarding close co-operation, this contrast becomes even more clear. The dominance of large firms as customers and small firms as suppliers is obvious also for the partners of the small firms interviewed. This indicates that in supplier relations there is a tendency to co-operate with smaller partners,

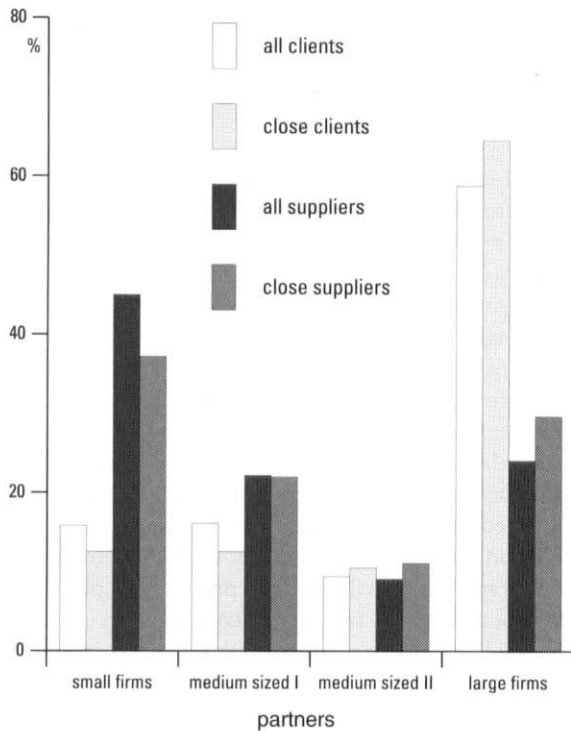


Fig. 2: Size of co-operating partners (in % of co-operating clients/suppliers, multiple response)
Source: Own investigations, 1995

Größe kooperierender Partner (in % der kooperierenden Kunden/Zulieferer, Mehrfachantworten)

whereas in client relations co-operation partners are principally large firms. These size relations outline a hierarchical structure of co-operation in the value chain: with increasing vicinity to the final customer the co-operation partners get larger. Furthermore, 93% of the large clients are internationally acting firms, a fact which establishes a direct link between the firms interviewed and international competition. Thus, collaboration between the firms interviewed and their clients refers to the decisive points discussed above. Therefore, further examination concentrates only on their relationships.

4.2 Dependencies in client co-operation

As discussed in Chapter 2, especially one-sided dependencies in inter-firm relationships are supposed to exert negative effects on regional development while mutual dependencies seem to have ambiguous effects on participating firms and regional development. One-sided and two-sided dependencies are above all seen in the context of lacking redundancy of exchange relations.

Redundancy is defined as the state in which more than one client/supplier are partners in exchange relations. A lack of redundancy in the supply of an exchange product reduces alternatives for the choice of a client or supplier and creates a monopolistic position for the single firm, especially if the exchange relation is tied to high transaction-specific investments (PICOT a. DIETL 1990, 179).

As the machinery industry is highly specialized non-redundant relations are supposed to be quite frequent. Redundancy was questioned in two ways: on the one hand with the statement: "We are the single supplier of the client for certain products" on the other hand "partner is the only customer". If both are true, we talk of bilateral exclusivity. The results are presented in Table 2.

One third of the firms interviewed state they are the single supplier for at least one of their clients concerning the manufactured products. The share of small firms is about average, while it is lowest for large firms. The status as single supplier can strengthen the position of small firms towards their customers and can reduce a power disequilibrium. However, empirical results show that large firms are underrepresented compared to their share of clients as customers of those small firms, while small firms are overrepresented as customers (Fig. 3). Thus, the power compensating effect of single supplier relationships comes to fruition to a smaller extent.

Exclusivity of clients is far less common and nearly completely realised by small firms. For these, which usually have a narrower production programme than large firms such a relationship signifies a considerable economic dependence on the co-operating customer. This conclusion is reinforced by the fact that exclusive partners are mainly large firms (Fig. 3). Thus, the co-operation can be a modern form of exploitation of the small firm or it is a vertical near-integration similar to the reciprocal exclusive relationship detailed below, but with the difference that only the client is in a monopolistic position, while the suppliers are competing with other firms.

Two-sided exclusivity in supplier-client relations on the other hand can mean mutual dependence. This kind of relation can be interpreted as a shaping of strong ties examined by GRABHER (1993) and KRACKHARDT (1992). Also here a dominance of small firms can be observed (Tab. 2). Partners in two-sided exclusivity are - according to their share of clients - mainly large firms, while the share of small firms is even lower than their share in co-operating clients (Fig. 3). Therefore, in these relationships a dominance of vertical near-integration can be supposed. In

Table 2: Exclusive co-operation (in %, base: co-operating firms)
Exklusive Kooperation (in %, Basis: kooperierende Unternehmen)

	firms with exclusive partnerships		
	SE	LE	all
no exclusive co-operation	48.8	73.3	53.3
interviewed firm as supplier	32.9	20.0	32.7
single customer co-operation	7.3	-	4.4
bilateral exclusivity	11.0	6.7	9.4
Σ	100.0	100.0	100.0
n	82	30	150

χ^2 -Test of independence:¹⁾*

Source: Own investigations, 1995

¹⁾ The analysis was principally carried out in cross-tabulations with χ^2 -n x m tests of independence. For lack of space the cross-tabulations are not completely represented. Instead, single rows/columns of different tables were arranged in one table. The result of the significance tests for each complete table is reported in the corresponding row/column of the respective table.

* significant at 10% level

** significant at 5% level

*** significant at 1% level

n.s. not significant

contrast to exclusive client co-operation also the client is interested in keeping up this relationship, as a breaking-off causes sunk costs. Correspondingly, for those small firms, which maintain bilateral exclusive co-operation, stability and security increase.

One-sided dependency is also likely to exist if the client holds a considerable share of turnover of the supplier. In the sample nearly two thirds of the co-operating small firms have at least one customer whose share of turnover exceeds 25% (Tab. 3). Even more, i.e. three quarters of the small firms co-operating only with large firms belong to that group. In contrast, in none of the large firms interviewed does the quantitatively most important customer exceed this share. A differentiation concerning the intensity of co-operation (regular partnership, close co-operation, data co-operation, exclusive client/bilateral co-operation¹⁾), does not show a significant difference in the share of turnover of clients. Thus, the economic dependence of the majority of small firms is caused less by co-operation-specific features than by size-related characteristics of client relations of small firms.

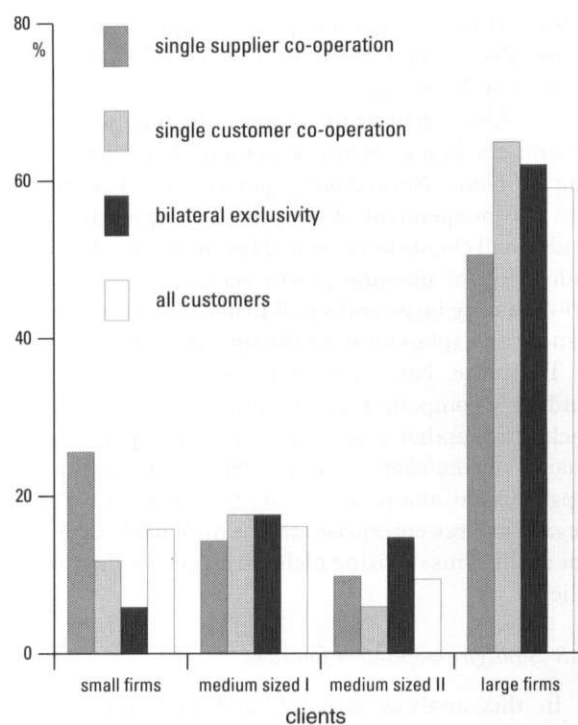


Fig. 3: Firm size of clients in exclusive relationships (in % of partners of each category, multiple response)

Source: Own investigations, 1995

Unternehmensgrößen der Partner in exklusiven Beziehungen (in % der Partner nach Größenklassen, Mehrfachantworten)

For a further evaluation of dependencies the subjective estimation of problems in co-operation has to be regarded. About 10% of the firms interviewed

Table 3: Maximum share of turnover of largest co-operating clients and size category (in %, base: co-operating firms)

Maximaler Umsatzanteil kooperierender Kunden und Größe der befragten Unternehmen (in %, Basis: kooperierende Unternehmen)

max. share of turnover	firms interviewed				
	SE	ME I	ME II	LE	all
≤ 25%	39.3	75.0	100.0	100.0	59.1
26-49%	44.6	12.5	-	-	29.1
≥ 50%	16.1	12.5	-	-	11.8
Σ	100.0	100.0	100.0	100.0	100.0
n	56	16	6	15	93

χ^2 -Test of independence:¹⁾***

Source: Own investigations, 1995

¹⁾ See Table 1

admitted problems in their co-operation concerning power distribution. Small firms recognize less power-related problems than large firms (10% compared to 29%). Also, small firms co-operating only with large customers do not regard power and dependence as a big problem. Nevertheless, power-related problems are not independent of size: firms co-operating only with small clients never stated this problem. The consideration of unequal power relationships between co-operating large and small firms as naturally given can be an explanation for the unexpected result.

Therefore, customer relationships between small and large companies are predominantly marked by a lack of redundancy and by economic dependencies, mainly in the shape of one-sided dependencies. An upgrading of the power position of small firms with regard to large enterprises can be most likely expected for small firms realising niche strategies as single suppliers.

4.3 Strategic co-operation functions

In this analysis research and development are reconsidered as strategic enterprise functions. This criterion has a double relevance: first, the input of strategic resources by the weaker co-operation partner raises his power position and, secondly, the innovative potential of the region is used and increased.

In order to avoid an underestimation of development activities of small firms, development co-operation is defined quite broadly: as joint product development as well as activities supporting the development of the customer by know-how transfer. The share of the so defined development co-operation in all cases of client co-operation is 39%, small firms slightly exceed the average value. The partners in development co-operation are mostly large firms. Small firms only make up 13% of the partners instead (Fig. 4) which means lower than their share in all co-operating customers. Small firms occupy a low position in development co-operation in their size class (17%), on the other hand 58% of their partners are large firms. Even here hierarchical co-operation referring to the size relations predominates.

However, the generally high importance of development co-operation demonstrates that the innovative potential of the region is used in co-operation.

¹⁾ Data co-operation is characterized by far-reaching activities as exchange of internal data, joint electronic data systems etc. Single client and bilateral co-operation have been summarized here as exclusive relationships. Both, from the viewpoint of the firms interviewed, can be defined as strong ties.

Table 4: Innovation and intensity of co-operation (innovating firms in %, base: all firms of a co-operation type)

Innovationen und Kooperationsintensität (innovierende Unternehmen in %, Basis: kooperierende Unternehmen nach Kooperationsarten)

firms	intensity of co-operation						χ^2 -Test of inde- pendence ¹⁾	n
	none	regular	close	data	bilat- eral/ single client	all firms		
a) small	71.4	80.0	63.9	80.0	60.0	69.4	n.s.	95
b) large	66.7	87.5	83.5	100.0	100.0	87.5	n.s.	32
c) all	80.0	86.0	71.0	81.8	72.7	77.4	n.s.	186

Source: Own investigations, 1995

¹⁾ See Table 1

The high share of know-how-intensive co-operation of small regional firms can signify a levelling out of the power difference characterized above.

4.4 Co-operation and firm success

As was formulated above, for utilization in a regional development strategy small firm co-operation has to stand in a positive relationship towards firm success. In comparison with the other criteria under examination as a frame of reference it has to be compared not only with firms of other size categories but also with the success of firms that do not co-operate. As indicators of success "innovation" and "turn-over" have been chosen.

4.4.1 Innovation

Innovation in this study is defined as the implementation of incremental changes and new development. More than three quarters of the firms interviewed introduce innovations; differences exist mainly between the size classes: small firms make changes to a lesser extent than firms of other size classes (Tab. 4).

Obviously the existence of co-operation does not have a positive influence on innovation. Small firms that do not co-operate with their customers do not make less changes than co-operating firms. The same result is valid for all firms. Also, a distinction regarding the intensity of co-operation shows no significant results. Regarding single results, for small firms it can be stated that close co-operation and exclusive client/bilateral relationships are linked to the lowest innovation quotas (Tab. 4, a). Thus, for smaller firms in-

Table 5: Innovation and co-operation with small/large clients (innovating firms in %, base: co-operating firms)

Innovationen und Abnehmerkooperationen mit Klein-/Großunternehmen (innovierende Unternehmen in %, Basis: kooperierende Unternehmen)

partners	firms interviewed		
	a) SE	b) LE	c) all
SME	76.2	100.0	81.3
LE	63.9	76.9	75.3
χ^2 -Test of independence ¹⁾	n.s.	n.s.	n.s.
n	57	17	105

Source: Own investigations, 1995

¹⁾ See Table 1

tense ties do not seem to foster innovation (Tab. 4, b) which corresponds with results of network analysis and studies of the "strength of weak ties" (GRANOVETTER 1973). Only co-operation linked to new information technologies accompanies a higher innovation quota, however a correlation of development co-operation of small firms and innovation cannot be confirmed.

Even if there is no general correlation between innovation quota and size of co-operating firms (Tab. 5), as a tendency the differentiation of the size classes of customers shows that the innovation quota of firms co-operating only with small and medium-sized customers is higher than that of those co-operating only with large firms (Tab. 5, c). This tendency is also visible for small firms which co-operate anyway to a larger extent with small enterprises (Tab. 5, a). The same tendencies are obvious regarding development co-operation.

The distinction between different types of exclusive co-operation and those firms keeping only redundant relations shows that small single suppliers are more likely to make changes than firms maintaining other types of exclusive co-operation (Tab. 6, a). Firms with only a single client have the lowest innovation quota, while it is significantly higher for those firms which maintain bilateral exclusive relationships. For both types of co-operation strong relationships have been assumed above, but only for the former do one-sided dependencies exist. Thus, these seem to stand in negative correlation with innovation. This assumption is also confirmed by the weaker economic dependence of single suppliers on their clients: only 29.4% have a customer with a turnover share of more than

Table 6: Innovation and exclusive relationships of firms interviewed (innovating firms in %, base: co-operating firms)

Innovationen und exklusive Beziehungen (innovierende Unternehmen in %, Basis: kooperierende Unternehmen)

firms	exclusive co-operation					χ^2 -Test of independence ¹⁾	n
	none	single supplier	single client	bilateral	all firms		
a) small	62.5	85.2	33.3	77.8	69.5	**	82
b) large	86.4	100.0	-	100.0	90.0	n.s.	30
c) all	75.0	82.7	42.9	86.7	77.2	*	158

Source: Own investigations, 1995

¹⁾ See Table 1

25% (Tab. 7). In contrast, 74% of the firms that are not exclusive suppliers have a customer which exceeds this share. These results show that intense ties are not by themselves linked to a lower innovation quota, instead, power-relationships seem to play a role.

As can be seen from the tables most correlations between innovation and type of co-operation are not statistically significant. Thus, neither the existence of co-operation nor a special kind of co-operation leads with a high probability to innovation. Nevertheless, for small firms the results show that tendentially equilibrated power positions are more likely bound to innovation than are big power differences.

Table 7: Non-redundant co-operation of small firms: maximum share of turnover of co-operating customers (in %, base: co-operating small firms)

Umsatzanteile von mit Kunden kooperierenden KU in nicht-redundanten Kooperationen (in %, Basis: kooperierende KU)

max. share of turn-over	exclusive co-operation				
	none	single supplier	single client	bilateral	all
≤ 25%	29.6	70.6	-	28.6	39.3
26-49%	51.9	23.5	80.0	42.9	44.6
≥ 50%	18.5	5.9	20.0	28.6	16.1
Σ	100.0	100.0	100.0	100.0	100.0
n	27	17	5	7	56

χ^2 -Test of independence:¹⁾**

Source: Own investigations, 1995

¹⁾ See Table 1

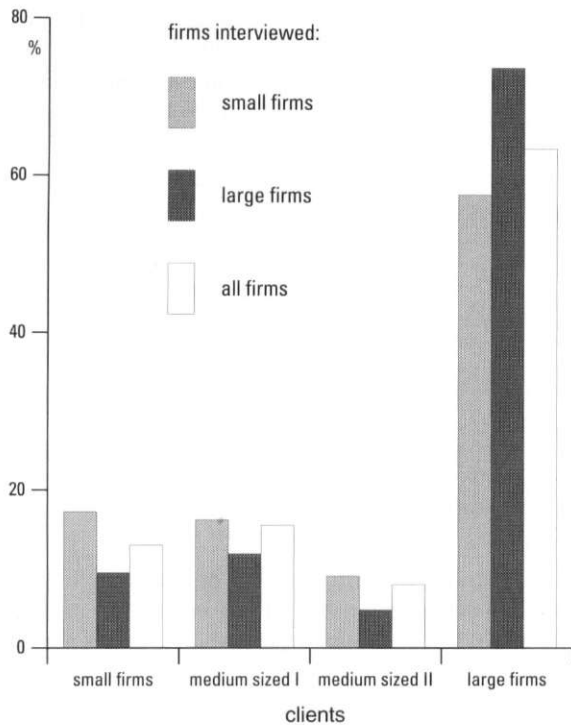


Fig. 4: Firm size of partners in development co-operation (in % of development co-operation partners of each size category, multiple response)

Source: Own investigations, 1995

Unternehmensgrößen der Partner in Entwicklungskooperationen (in % der Partner für Entwicklungskooperationen nach Größenklassen, Mehrfachantworten)

4.4.2 Development of turnover

Because of the downward economic trend and structural problems in the machinery industry the market situation in the 90s has been extremely difficult. This can also be seen in the statements concerning the development of turnover in the last three years of the firms questioned. Nearly half of the firms interviewed had a positive development of turnover in that time, almost one third a negative. For small firms the development was about average (Tab. 8). A general correlation between the existence of customer co-operation and development of turnover in the last three years cannot be found. However, as a single result, small firms had a far more positive development when they have a co-operation than when they have none (Tab. 8).

A differentiation of the intensity of co-operation shows a more positive development of turnover with increasing intensity of customer relationship (Tab. 8). The tightest form of being bound to a customer, i.e.

Table 8: Development of turnover and intensity of co-operation of small firms (in %, base: small firms)

Umsatzentwicklung und Kooperationsintensität kleiner Unternehmen (in %, Basis: KU)

turnover	intensity of co-operation					
	no co-operation	regular	close	data	bilateral/ single client	all
positive	25.0	42.1	52.9	50.0	71.4	49.4
constant	41.7	10.5	14.7	40.0	28.6	22.5
negative	33.3	47.4	32.4	10.0	-	28.1
Σ	100.0	100.0	100.0	100.0	100.0	100.0
n	12	19	34	10	14	89

χ^2 -Test of independence:¹⁾**

Source: Own investigations, 1995

¹⁾ See Table 1

the exclusive production for him, is connected with the most positive development of turnover of the small firms interviewed. It has already been outlined above that such a situation creates a high level of dependence as, for the supplier, the maintenance of the co-operation is essential for his survival. Apparently, this relationship has also advantages for the supplier, because it creates trust and a feeling of responsibility for the supplier which can result in giving preference to the supplier in placing orders.

In contrast to innovation the correlation between the size of the co-operating client and the development of turnover is significant. Also for the small firms of the sample clear results can be seen (Tab. 9): small firms co-operating only with other small firms record a higher percentage of positive developments than those co-operating only with large firms. Regarding only development co-operation the same correlations can be noted: those few small enterprises co-operating only in their own size category developed positively, with one exception. Small firms which have development activities only with large firms have a clearly lower quota of positive developments (46%).

With regard to the correlation between co-operation and development of turnover it can be stated that for small firms an intense co-operation shows a positive correlation with their economic development, which stands in contrast to the other indicator of firm success: innovation. Thus, for small firms co-operation seems to exercise a stabilizing effect on their economic situation but does not utilize creative poten-

Table 9: Small firms: development of turnover and size category of co-operating clients (in %, base: co-operating small firms)

Umsatzentwicklung von KU und Größe kooperierender Abnehmer (in %, Basis: kooperierende KU)

turnover	co-operating clients		
	SMEs	only LEs	all clients
positive	61.9	46.9	52.8
constant	-	31.3	18.9
negative	38.1	21.8	28.3
Σ	100.0	100.0	100.0
n	21	32	53

χ^2 -Test of independence:¹⁾**

Source: Own investigations, 1995

¹⁾ See Table 1

tials. This underlines its significance as a 'classical' supplier-client relationship. The effects regarding the size of the customers indicate the same tendency for turnover and innovation: small firms co-operating only with large firms tend to have a less positive development than those collaborating with other partners. Based on these results we cannot confirm the assumption of bilateral positive effects as would be indicated by a convergence of small and large firms through co-operation.

4.5 Spatial structure of co-operative relationships

As outlined above it is essential for a co-operative regional development strategy that co-operation activities are linked to regional product cycles. As firms from all over the area were recorded in the sample also the adjacent Länder were included in the definition of the co-operation region.

More than one third of the co-operating customers (39%) are located in Franconia and the adjacent Länder. Especially, small firms show a strong regional preference in their co-operative behaviour: more than half of them only collaborate with partners in the co-operation region, which is significantly different from the other size classes (Tab. 10). Thus, regional product cycles result to a great extent from small firms. The regional co-operation partners of small firms are mostly large firms, with regard to their share of all partners, so that we have a predominance of size-related hierarchical relationships as in the whole sample. Economic dependencies, indicated by the share of turnover of the clients, show higher depend-

Table 10: Firm size and grouped locations of clients (in %, base: co-operating firms)

Unternehmensgröße und gruppierte Abnehmerstandorte (in %, Basis: kooperierende Unternehmen)

locations	SE	LE	all
only Franconia/ adjacent Länder	55.0	18.5	40.4
all over Germany	31.2	22.2	30.5
international	13.8	59.3	29.1
Σ	100.0	100.0	100.0
n	80	27	151

χ^2 -Test of independence:¹⁾***

Source: Own investigations, 1995

¹⁾ See Table 1

encies within the regions (Tab. 11): The largest part of the small firms co-operating only in Franconia have at least one client with a share of turnover of more than 25%. Internationally co-operating small firms show an inverse relation: they predominantly have customers with a share of under 25%.

A distinction of the types of co-operation indicates that small firms mainly collaborate within the region, independent of the intensity of co-operation. Firms co-operating only with one customer are to a greater extent regionally orientated.

Development co-operation compared with other types of co-operation is to a greater extent realised

Table 11: Small firms: maximum share of turnover and location of clients (in %, base: co-operating small firms)

Umsatzanteile und Standorte kooperierender Abnehmer von kleinen Unternehmen (in %, Basis: kooperierende KU)

max. share of turnover	location			
	only Franconia	Germany	inter- national	all
≤ 25%	16.7	41.9	85.7	39.3
26%–50%	55.5	45.2	14.3	44.6
≥ 50%	27.8	12.9	-	16.1
Σ	100.0	100.0	100.0	100.0
n	18	31	7	56

χ^2 -Test of independence:¹⁾**

Source: Own investigations, 1995

¹⁾ See Table 1

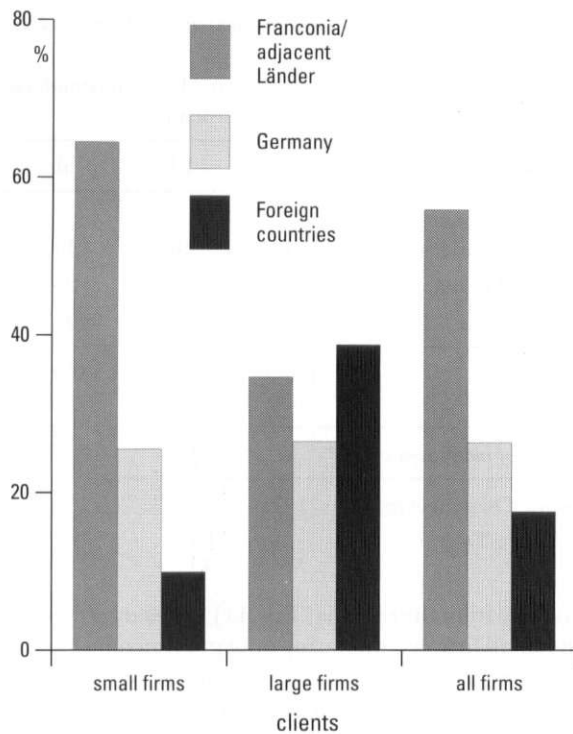


Fig. 5: Location of clients with development co-operation (in % of development co-operation partners of each size category, multiple response)

Source: Own investigations, 1995

Entwicklungskooperationen und Standorte der Kunden (in % der Partner für Entwicklungskooperationen nach Größenklassen, Mehrfachantworten)

outside the region, though, small firms still have most of their partners for co-operation in development within the region (Fig. 5). In order to know if the strategic significance of co-operation is generally low in the region, co-operation activities have been examined according to their spatial context (Tab. 12). The regional activities of small firms differ clearly from those of large firms. While the latter have their main focus of regional co-operation activity on distribution and customer services, small firms' regional activities are dominated by production planning and support of development. In contrast to the large firms for them no lower strategic relevance of regional compared to extraregional co-operation activities can be stated. Nevertheless, a strong emphasis on production-related activities which underlines the supplier function of many small firms becomes visible.

As has been demonstrated, regional product cycles are dominated by co-operation between small and large firms, which can be characterized by strong dependencies. As shown above, such strong ties have

Table 12: Most important co-operation activities and location of clients (in % of all activities, multiple response)

Wichtigste Kooperationsaktivitäten und Standorte kooperierender Abnehmer (in % der genannten Aktivitäten, Mehrfachantworten)

activities	small firms			large firms		
	re-regional	na-tional	inter-national	re-regional	na-tional	inter-national
production planning	19.4	20.0	23.6	12.5	11.7	20.8
support of development	13.2	19.7	10.5	3.0	12.9	17.0
data networks	8.5	10.2	13.1	8.3	14.2	13.0
distribution/client service	5.2	3.5	-	21.8	8.6	5.0
production instructions	10.8	10.6	5.2	12.5	11.1	8.9
problem-solving	11.5	16.2	10.5	3.1	2.5	2.0
others	31.4	19.8	37.1	38.8	39.0	33.3
Σ	100.0	100.0	100.0	100.0	100.0	100.0
n	126	401	96	27	113	239

Source: Own investigations, 1995

to be seen ambiguously: on the one hand they can create trust and stabilize the market situation of the supplier, on the other hand they do not foster innovation and can lead to exploitation and aggravate economic crisis. Nevertheless, more than firms of other size categories small firms exercise their strategic activities in the region.

5 Conclusions

As the exposition has shown the correlations examined are not as clear as the outlined dichotomy convergence vs. domination would let us assume. Especially for the relationship between co-operation and firm success a specific effect of size differences in co-operation can only be pointed out as a tendency, while, regarding spatial structure and economic dependencies in co-operation relatively clear results can be noticed.

For small firms client co-operation is bound to strong economic dependencies; for a smaller part even dependencies relating to production engineering exist. Thus, non-redundant and strong ties are a

special feature of co-operation of small firms in the research area. The correlation between intensive ties and a firm's success shows opposite directions for both indicators. On the one hand, this can indicate that small firms cannot convert their strategic potentials into innovation, which means that co-operation benefits cannot be realised adequately. On the other hand, it points out the strength of strong ties which seem to secure the survival of small firms exposed to the high competition in global markets, rather than weak ties.

Although the firm structure in the research area is predominantly characterized by small and medium-sized firms, co-operation between small and medium-sized firms which is favoured by advocates of co-operative regional development strategies, only makes up a small part of all cases of co-operation. In development co-operation their share is even smaller. Nonetheless, this type of co-operation is tied to a more positive firm development than cooperation between small and large firms. However, the latter dominates as co-operation form of the firms interviewed.

Furthermore, little proof for the convergence of large and small firms was found regarding regional product cycles. The relationships of small and large firms are more often marked by economic dependencies in the intraregional than in the extraregional context. However, in intraregional hierarchical relationships small firms use their strategic potential, which obviously does not lead to higher innovation but can foster trust and stabilize their relationship.

In the light of these results it cannot be concluded that co-operation itself is a regional potential for the realisation of an endogenous development strategy. The dominating type of co-operation, the collaboration between small and large firms shows features of vertical near-integration, which gives the small supplier more stability and enlarges the influence of the large client by preserving the flexibility of a supplier-client relationship. Thus, it can also be used to the disadvantage of the small firm: as global competition is omnipresent large firms can exert pressure on price structures and can demand ruinous flexibility. Although features of the dominance position are visible, such a conclusion would neglect activities and self-definition of the small firms. As was shown, most of the small firms interviewed have no problems related to power differences. They themselves emphasize their strategic input in co-operation with large firms and contribute to the success of the client which also can exert a positive feedback on the position of the small firm. Considering the results, it has to be questioned whether this kind of co-operation is a promising potential for a regional development strat-

egy, however, it is not simply an indicator for the exploitation of small firms.

Although small firms co-operating with other small and medium-sized firms have had a clearly more positive development it remains open whether the few intraregional cases of small firm co-operation are a guideline for a regional development strategy. Market situations and potentials have to be examined more closely in order to clarify whether not only hardly expansionable market niches are occupied.

References

- AIGINGER, K. a. TICHY, G. (1985): *Die Größe der Kleinen: Die überraschenden Erfolge kleiner und mittlerer Unternehmungen in den 80er Jahren*. Wien.
- AMIN, A. (1992): *Big Firms Versus the Regions in the Single European Market*. In: DUNFORD, M. a. KAFKALAS, G. (Eds.): *Cities and Regions in the New Europe*, London, 127-149.
- BERGMAN, E. M.; MAIER, G. a. TÖDTLING, F. (1991) (Eds.): *Regions Reconsidered. Economic Networks, Innovation, and Local Development in Industrialized Countries*. London, New York.
- BIRCH, D. (1979): *The Job Generation Process*. Cambridge (Mass.).
- BRUGGER, E. A. (1984): „Endogene Entwicklung“. Ein Konzept zwischen Utopie und Realität. In: *Informationen zur Raumentwicklung*, 1-19.
- CAMAGNI, R. (1991): *Local Milieu, Uncertainty and Innovation Networks: Towards a New Dynamic Theory of Economic Space*. In: CAMAGNI, R. (Ed.): *Innovation Networks*. London, 121-144.
- COLLETIS, G. (1994): *Die Region Rhône-Alpes - endogene Entwicklung und externe Kooperation, zwei komplementäre Aspekte einer Modernisierungspolitik*. In: BULLMANN, U. (Ed.): *Die Politik der dritten Ebene: Regionen im Europa der Union*. Baden-Baden, 161-172.
- FRIEDMANN, J. (1986): *Regional Development in Industrialized Countries: Endogenous or Self-Reliant?* In: BAS-SAND, M.; BRUGGER, E. A. et al. (Eds.): *Self-Reliant Development in Europe. Theory, Problems, Actions*. Aldershot, 203-216.
- FRI TSCH, M. (1987): *Groß und klein in der Wirtschaft? Was man darüber weiß und was man darüber wissen sollte*. In: FRI TSCH, M. a. HULL, C. (Eds.): *Arbeitsplatzdynamik und Regionalentwicklung*. Berlin, 175-196.
- (1992): *Unternehmens-„Netzwerke“ im Lichte der Institutionenökonomik*. In: *Jahrbuch für Neue Politische Ökonomie* 11, 89-102.
- GLATZ, H.; ROHRMOSER, A. a. SCHEER, G. (1981): *Ansätze für neue soziale, politische und wirtschaftliche Organisationsformen in Österreich*. In: *Informationen zur Raumentwicklung*, 13-24.

- GRABHER, G. (1993): The Weakness of Strong Ties: The Lock-In of Regional Development in the Ruhr-Area. In: GRABHER, G. (Ed.): *The Embedded Firm: On the Socio-economics of Industrial Networks*. London, New York, 255-278.
- (1994): *Lob der Verschwendung: Redundanz in der Regionalentwicklung*. Berlin.
- GRANOVETTER, M. (1973): The Strength of Weak Ties. *American Journal of Sociology* 78, 6, 1360-1380.
- GROTZ, R. a. BRAUN, B. (1993): Networks, Milieux and Individual Firm Strategies: Empirical Evidence of an Innovative SME Environment. In: *Geografischer Annaler* 75 B, 149-161.
- HADJIMICHAELIS, C. a. PAPAMICHOS, N. (1991): Local Development in Southern Europe: Myths and Realities. In: BERGMAN, E. M.; MAIER, G. a. TÖDTLING, F. (Eds.): *Regions Reconsidered. Economic Networks, Innovation, and Local Development in Industrialized Countries*. London, New York, 141-164.
- HAHNE, U. (1985): *Regionalentwicklung durch Aktivierung intraregionaler Potentiale*. München.
- HÅKANSSON, H. (1989): *Corporate Technological Behaviour*. London/New York.
- HÅKANSSON, H. a. SNEHOTA, I. (1995): *Developing Relationships in Business Networks*. London.
- HARRISON, B. (1994): *Lean and Mean. The Changing Landscape of Corporate Power in the Age of Flexibility*. New York.
- JOHANSON, J. a. MATTSSON, L.-G. (1987): Interorganizational Relations in Industrial Systems: a Network Approach Compared with the Transaction-Cost Approach. In: *International Studies of Management and Organization* XVII, 34-48.
- KRACKHARDT, D. (1992): The Strength of Strong Ties: The Importance of *Philos* in Organizations. In: NOHRIA, N. a. ECCLES, R. G. (Eds.): *Networks and Organizations: Structure, Form, and Action*. Boston (Mass.), 216-239.
- KRUMBEIN, W.; FRIESE, C.; HELLMER, F. a. KOLLROS, H. (1994): Industrial districts und „Normalregionen“. In: KRUMBEIN, W. (Ed.): *Ökonomische und politische Netzwerke in der Region*. Münster, Hamburg, 153-186.
- LAZERSON, M. (1993): Factory or putting-out? Knitting Networks in Modena. In: GRABHER, G. (Ed.): *The Embedded Firm*. London, 203-226.
- LOVEMAN, G. a. SENGENDERGER, W. (1990): Introduction: Economic and Social Reorganisation in the Small and Medium-Sized Enterprise Sector. In: SENGENDERGER, W.; LOVEMAN, G. a. PIÖRE, M. (Eds.): *The Re-Emergence of Small Enterprises. Industrial Restructuring in Industrial Countries*. Geneva, 1-61.
- PEDERSEN, P. O. (1991): A Network Approach to the Small Enterprise. In: BERGMAN, E. M.; MAIER, G. a. TÖDTLING, F. (Eds.): *Regions Reconsidered: Economic Networks, Innovation and Local Development in Industrialized Countries*. London, 70-95.
- PFEFFER, J. (1987): A Resource Dependence Perspective on Intercorporate Relations. In: MIZRUCHI, M. S. a. SCHWARTZ, M. (Eds.): *Intercorporate Relations. The Structural Analysis of Business*. Cambridge, 25-55.
- PICOT, A. a. DIETL, H. (1990): *Transaktionskostentheorie*. In: *WiSt*, 178-184.
- PLougman, P. (1994): *Networking - Achieving SME Competitiveness in a Global Economy. The Danish Networking Programme - a Model for Other European Regions?* In: KRUMBEIN, W. (Ed.): *Ökonomische und politische Netzwerke in der Region*. Münster, Hamburg, 207-232.
- PYKE, F.; BECATTINI, G. a. SENGENDERGER, W. (Eds.) (1990): *Industrial Districts and Inter-Firm Co-operation in Italy*. Geneva.
- PYKE, F. a. SENGENDERGER, W. (1990): Introduction. In: PYKE, F.; BECATTINI, G. a. SENGENDERGER, W. (Eds.): *Industrial Districts and Inter-Firm Co-operation in Italy*. Geneva, 1-9.
- RAINNIE, A. (1989): *Industrial Relations in Small Firms. Small isn't beautiful*. London, New York.
- REICHWALD, R. a. DIETL, B. (1990): *Produktionswirtschaft*. In: HEINEN, E. (Ed.): *Industriebetriebslehre - Entscheidungen im Industriebetrieb*. Wiesbaden, 395-622.
- SABEL, C. F. (1994): *Flexible Specialisation and the Re-emergence of Regional Economies*. In: AMIN, A. (Ed.): *Post-Fordism. A Reader*. Oxford, Cambridge, 101-156.
- SCHLEICHER-TAPPESE, R.; ROSENBERGER-BALZ, C. a. HEY, C. (1992): *Perspektiven ökologischer Regionalentwicklung in Südbaden*. Freiburg.
- SCOTT, A. J. (1988): *New Industrial Spaces. Flexible Production Organization and Regional Development in North America and Western Europe*. London.
- SEMLINGER, K. (1994): *Kooperative Regionalentwicklung durch Mittelstandsförderung*. In: FRITSCH, M. (Ed.): *Potentiale für einen ‚Aufschwung Ost‘: Wirtschaftsentwicklung und Innovationstransfer in den Neuen Bundesländern*. Berlin, 89-114.
- STÖHR, W. (1981): *Alternative Strategien für die integrierte Entwicklung peripherer Gebiete bei abgeschwächtem Wirtschaftswachstum*. In: *DISP* 17, 5-8.
- SWYNGEDOUW, E. (1992): *The Mammon Quest. 'Glocalisation', Interspatial Competition and the Monetary Order: the Construction of New Scales*. In: DUNFORD, M. a. KAFKALAS, G. (Eds.): *Cities and Regions in the New Europe*. London, 39-67.
- SYDOW, J. (1992): *Strategische Netzwerke, Evolution und Organisation*. Wiesbaden.
- TELLJOHANN, V. (1994): *Die italienische Debatte um Industriedistrikte. Das Beispiel der Emilia Romagna*. In: KRUMBEIN, W. (Ed.): *Ökonomische und politische Netzwerke in der Region*. Münster, Hamburg, 45-75.
- TRIGILIA, C. (1990): *Italian Industrial Districts: Neither Myth nor Interlude*. In: PYKE, F. a. SENGENDERGER, W. (Eds.): *Industrial Districts and Local Economic Regeneration*. Geneva, 33-47.
- ZEITEL, G. (1990): *Längerfristige Entwicklung der Unternehmens- und Wirtschaftsstruktur in der Bundesrepublik Deutschland unter besonderer Berücksichtigung der kleinen und mittleren Unternehmungen*. Mannheim.