

Geography of reputation: the city as locus of business opportunity

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Geography of reputation: the city as locus of business opportunity

Abstract. This paper discusses the limits of current cluster theory and theorizes trans-local network externalities as an important cause for the urban agglomeration of knowledge services. A survey of management consulting firms in the metropolitan region of Frankfurt demonstrates that the benefit of co-location in the city lies in the access to reputation networks rather than in the exploitation of local value chain linkages. The city is a locus of opportunity because firms in the city have a higher share of distant clients and because distant clients are won more often through referrals. Cities are reputational nodes for trans-local business development.

Keywords: world city network, business services, consulting, reputation, knowledge, cluster theory

JEL-Codes: L2, L84, M31, R30

1 Introduction

The growth of knowledge based business services has a clear spatial pattern. They have been clustering in the major metropolitan regions across Europe and instead of slowly dispersing over space they continue to concentrate there (BRYSON *et al.*, 1997; BENNETT *et al.*, 1999; KEEBLE and NACHUM, 2002; WOOD, 2002; HAAS and LINDEMANN, 2003). Why do industries cluster? Though a small part of variation in the spatial distribution of industries can be explained with natural cost advantages (ELLISON and GLAESER, 1999; ROOS, 2005), the major share of spatial clustering can only be understood as a consequence of external economies. External economies are “services (and disservices) rendered free (without compensation) by one producer to another” (SCITOVSKY, 1954, 143). They are thus outside the reach of the firm and depend either on the size of the industry, the region or the economy

(STIGLER, 1951). Local externalities are usually associated with market size or scale economies (KRUGMAN, 1991), transactional cost advantages (SCOTT, 1988) or technological spill-overs (JAFFE et al., 1993; AUDRETSCH and FELDMAN, 2004).

This paper posits that the urban agglomeration of knowledge services requires a different explanatory approach because several of the arguments developed in current cluster theories do not apply to highly specialised knowledge services. Knowledge services are not produced in value chains; hence the notion of local externalities to co-location in backward and forward linkages is empirically inappropriate. Moreover, knowledge services do not produce the kind of innovation discussed in mainstream cluster theory. Innovation is neither technological nor organised in internal laboratories or separate business processes. Instead, new knowledge is always attained within the client relationship and thus inseparable from daily service work. Put simply, local transactional linkages are overemphasised in the context of knowledge service firms. So why do knowledge service firms cluster in cities? This paper shifts focus from backward production to forward market relationships, from technological know-*how* to relational know-*who*, and from cost to opportunity. It explores the idea that firms enjoy network externalities through co-location at different spatial scales: local agglomeration creates size and diversity and thus conveys the advantage of reputational spill-overs. Moreover, the better a city is connected to other cities in a city network, the higher the propensity for local firms to be referred to business opportunities in other places. This line of argument will be developed in detail, conceptually, and also examined empirically in the context of management consulting in the metropolitan region of Frankfurt. Section 2 reviews the existing portfolio of agglomeration theory and reveals three conceptual blind spots in the context of knowledge services. Section 3 reports the methodology and data while sections 4 and 5 present the results of a survey in the metropolitan region of Frankfurt. Section 6 discusses the findings and draws conclusions for future research.

2 Blind spots in agglomeration theory: refining the explanation of urban knowledge service clusters

2.1 From value chain linkages to value shop of servicing

Alfred Marshall's (1956 [1890]) trilogy of agglomeration advantages has fundamentally influenced cluster theory and has found application in many contemporary approaches as, for instance, in geographical economics (KRUGMAN, 1991). Marshall identifies three advantages of geographic agglomeration: specialised suppliers, labour market pooling and knowledge spill-over. Later, the California school of economic geography recurred on the work of Coase (1937) and Williamson (1979) and applied transaction cost considerations to the geographic organisation of value chains. Most explicitly theorised in the concept of new industrial spaces, Scott (1988) argues that under conditions of a post-Fordist production regime with increasing disintegration and social division of labour, the transaction cost between organisations could best be minimised through geographical co-location.

This argument has been developed largely within the context of manufacturing. In the case of knowledge services, however, the concept largely fails because the organisational logic of value creation differs fundamentally from the production of tangible commodities. Stabell and Fjeldstad (1998) conceive of professional services as value shops rather than value chains. In contrast to the linear assembly of a fixed set of activities, the value shop describes the problem-specific alignment of resources and scheduling of activities in response to a client problem. The shop metaphor alludes to the notion that the specific and often unique alignment of problem-solving resources is essential for the management of the value creation process. In the context of professional services, the value creation process cannot be organised in a sequential chain of activities because it is often location-bound (SAMPSON and SNAPE, 1985; BODDEWYN et al., 1986), i.e. problem-solving activities cannot be produced in locations other than where they are actually delivered. This largely impedes any spatial

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3 division of labour in order to exploit scale economies in upstream activities. A brief review of
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5 empirical findings illustrates the inadequacy of the value chain configuration in the context of
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7 knowledge services:
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10 *Backward linkages.* In comparison with manufacturing sectors, knowledge-intensive
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12 business service firms maintain only limited vertical relations along the value chain. Nachum
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14 and Keeble (2001) hardly found vertical supplier-relations in the London consulting sector
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16 since most consulting firms organised the entire service production within the company and
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18 often by just one single person. Intermediary services and goods purchased from suppliers are
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20 often unrelated to the strategic value-adding competence of the consulting service and
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22 therefore do not offer competitive advantage through co-location.
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27 *Horizontal linkages.* In contrast, horizontal linkages have been proved as important
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29 competitive factors in the consulting market (STRAMBACH, 1994; LILJA and POULFELT,
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31 2001). Networks of cooperative partner firms extend market opportunities, sustain revenue
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33 growth, enhance service range and quality and broaden the knowledge base. Empirically,
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35 however, patterns of cooperation seem only weakly related to spatial proximity (COE and
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37 TOWNSEND, 1998). Instead, it is the functional synergies rather than geographic co-location
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39 that drive cooperation.
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43 *Forward Linkages.* Intuitively, geographical co-presence appears to be a sine qua non
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45 condition for the choice of location. Indeed some empirical work shows that knowledge-
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47 intensive business services are located in close proximity to their customers (BRYSON and
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49 DANIELS, 1998; HERMELIN, 1998; BENNETT *et al.*, 2000). However, a major part of the
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51 literature suggests that locational proximity is far less important than one would assume
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53 (SCHAMP, 1986; TORDOIR, 1994; WOOD, 1996). Illeris (1994) suggests a framework in
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55 which highly specialised services are independent from client location because high
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57 specialisation and sophistication yield premium fees and thus render transportation only a
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59 marginal cost (ILLERIS, 1994). Spatial proximity, which is necessary in the course of co-
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operation in the consulting process, is established through temporary travel and residential stays at client premises rather than permanent co-location (RALLET and TORRE, 1999). In the context of business consulting, empirical work shows that often the majority of clients are located outside the region of the service provider (SCHAMP, 1986; DANIELS, 1991; DANIELS *et al.*, 1992; KEEBLE *et al.*, 1992; BRYSON *et al.*, 1993; STRAMBACH, 1995; WOOD, 1996; BRYSON *et al.*, 1997). Not only suppliers but also the clients neglect spatial proximity to their providers (SCHICKHOFF, 1985). De Lange (1993) demonstrated that although business services and client companies locate in the same type of location, i.e. big cities, they do not co-locate in the same cities, i.e. business service firms do not follow their clients. Strambach (1994) and Wood (1996) conclude from their research that business development is more constrained by the access to social networks than by geography. This line of thinking informs hypothesis 1:

H₁: The quality of a client relationship is independent from geographical proximity.

2.2 From local externalities to trans-local network externalities

If direct relationships are not important locally, why do many knowledge-intensive business service firms cluster in metropolitan cities and regions? The world city hypothesis offers an alternative perspective on the urban agglomeration of knowledge services by focusing on the nodal function of a city in the global network economy (FRIEDMANN, 1986; SASSEN, 1994; FELSENSTEIN *et al.*, 2002). World cities are important nodes of governance, control and innovation for other places rather than merely big urbanisations with large endowments of infrastructure and population. One important indicator for the measurement of their centrality is the concentration of specialised management functions, knowledge-intensive services, financial centres or advertising (TAYLOR, 2004). Analyses by the research group Globalisation and World Cities (GaWC) as well as the work on the world system of cities (SMITH and WHITE, 1992) show how strongly the cities are interconnected through

overlapping location patterns of multinational business service firms (TAYLOR and HOYLER, 2000; TAYLOR *et al.*, 2002; TAYLOR, 2004) and international passenger air traffic (SMITH and TIMBERLAKE, 1995). Although knowledge service agglomeration often extends the boundaries of global cities to cover larger areas of metropolitan regions, the effects of centrality and connectivity may not be equally distributed. Instead, the global city is the original place for urbanisation advantages and connectivity within the city network whereas the geographical extension of a wider metropolitan region often complements the functions of the central city. Therefore, it is hypothesised that the advantages of international connectivity are limited to the city and do not fully apply to the entire metropolitan region:

H₂: Firms in the city are more international than firms in the rest of the metropolitan region.

This network perspective extends current agglomeration theory because it goes beyond merely local externalities and theorises positive network externalities for a city as an effect of its connectivity with the international city system. A network externality signifies the fact that the value of a unit of a good increases with the number of units sold: “the utility that a given user derives from the good depends upon the number of other users who are in the same ‘network’” (KATZ and SHAPIRO, 1985: 424). The utility of an urban business location may then be conceived as a firm’s reachability of other firms (strategic partners and clients) in *other* locations. If a city is highly connected within the city system it thus conveys reachability advantages to its firms beyond the local. Within a conception of urban network externalities, large cities form the nodes of a global network economy: the higher the interconnection of a city within the city network, the higher the utility for a firm to be located in that city. This perspective delivers an additional argument to agglomeration theory: cities convey urbanisation advantages because they realise trans-local network externalities in the global network economy. It has been demonstrated empirically that cities with greater degrees of connectivity in the world city network enjoy advantages with respect to policy programs

(CAPELLO, 2000). When network connectivity yields external effects to the city as a whole, does it also yield private returns to individual firms seeking trans-local interconnection? If metropolitan or world cities represent the nodes or spatial gateways to the global network economy, firms locating in those cities should on average benefit from this international business access and experience better performance. Drawing on the world city hypothesis, the argument is then extended to the expectation that world cities yield a location premium to business service firms (hypotheses 3).

H₃: Firms in the city enjoy higher rates of employment growth than firms in the rest of the metropolitan region.

Finally, if the network connectivity of a city is the cause of enhanced firm performance, hypotheses 2 and 3 should exhibit a significant degree of association. In order to test explicitly if firm internationality accounts for firm performance, hypothesis 4 is also submitted to empirical analysis:

H₄: The more international a firm the higher will be the average rate of firm growth.

2.3 From ‘know-how’ spillovers to ‘know-who’ and economies of overview

A third conceptual bias in current agglomeration theory is associated with its emphasis on know-how. Knowledge spillovers yield technological externalities, whereby knowledge gains occurring in one firm increase the productivity of the other firms without full compensation. In the literature, a whole series of theories hypothesise the conditions for increasing local knowledge externalities along a range of different dimensions, as for instance, competition (JACOBS, 1969; PORTER, 1990; GLAESER et al., 1992; MALMBERG and MASKELL, 2002) vs. monopoly (Marshall-Arrow-Romer externality, cf. GLAESER et al., 1992), localisation (MARSHALL, 1956 [1890]; PORTER, 1990) vs. urbanisation (JACOBS, 1969),

and traded (WILLIAMSON, 1981; SCOTT, 1988) vs. untraded interdependencies (STORPER, 1997).

This paper argues that these theories prioritise technical knowledge and production efficiency over business opportunity. It has been argued earlier that the absence of localised vertical and horizontal production linkages in management consulting hampers the potential for technological knowledge spill-over. Moreover, the innovation process in knowledge services differs from technology production. Knowledge firms do not generate innovation in internal laboratories but always in close interaction with their clients. Clients are source and catalyst for the generation of expertise, innovation and revenue. Management consulting, in particular, is a very unspecified and intransparent marketplace in which highly specific services are offered (GLÜCKLER and ARMBRÜSTER, 2003). In order to reduce uncertainty between consultants and clients and to avoid market failure, personal trust and reputation are extremely important to initiate and sustain business relationships (KEEBLE *et al.*, 1992 ; CLARK, 1993; GLÜCKLER, 2005). In this respect, know-how is not the only source of economically relevant knowledge. Instead, know-*who* (LUNDVALL and JOHNSON, 1994) is a vital form of knowledge that relates to the interconnection of people and the quality of their relationships. The essential entrepreneurial value of know-who is that it yields business opportunity and provides advantages of overview. Johannisson (1990) emphasises the entrepreneur's quest for maximising business opportunity rather than only minimising cost. Economies of overview relate to "the demarcation of an action frame where overview facilitates the identification and subsequent exploitation of opportunities" (JOHANNISSON, 1990, 35). In contrast to the management of cost where scale economies are the guiding principle, economies of overview economise on business opportunities. Economies of overview increase with geographic proximity and agglomeration since more actors and potential multipliers are within direct reach. Local buzz, i.e. the spill-over of information and gossip in a localised community, potentially yields opportunities and so is a potential leverage

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for firm growth (MARSHALL and WOOD, 1992; GERTLER, 2003; STORPER and VENABLES, 2004).

Economies of overview are even more important if services are highly specialised. One lesson to be learned from geography is that the more specific a service is, the wider stretches its minimum catchment area across space in order to meet sufficient demand to cover production cost (CHRISTALLER, 1933). While Johannisson conceives economies of overview as a purely local externality, the notion of overview economies may also be theorised as a trans-local network externality. Moulaert and colleagues have extended the notion of overview to a multi-level conception (MOULAERT and MARTINELLI, 1993; MOULAERT and DJELLAL, 1995) by arguing that “economies of overview can only be realised if synergies between elements stemming from different spatial levels and forms are achieved” (MOULAERT and DJELLAL, 1995: 109). In the context of knowledge services, location in metropolitan agglomerations may convey returns on the access to trans-local resources such as global networks of clients and knowledge flow. Correspondingly, an empirical survey found that consulting firms in London were more globally oriented than their decentralised counterparts, in terms of international revenues, overseas offices and staff recruitment (KEEBLE and NACHUM, 2002). A metropolitan location might be an advantage for knowledge-intensive business services not only because of their proximity to direct clients but also because of their access to extra-regional business opportunities. With increasing specialisation, management consulting services will face decreasing local demand which makes it more difficult to grow exclusively on the basis of clients in their geographical neighbourhood. Therefore, consultants need to find new business at a national or international scale. A well connected city might offer better economies of overview that may also imply access to trans-local social networks. Thus one would expect hypothesis 5:

H₅: Firms in the city have more clients outside the region than firms in the rest of the metropolitan region.

This paper does not stop at theorising the effect of overview advantages but also focuses on its mechanisms: how do consultants in the metropolitan centre manage to win clients in other regions? Does geographic remoteness make a difference for business development? And if so, what are the different mechanisms that drive client acquisition? Geographical co-location obviously eases face-to-face contact and thus diminishes the costs of canvassing clients locally. In close proximity a consultant can contact, meet and present proposals to more potential clients than across larger distance at the same cost. Therefore, one would expect direct client acquisition to be more frequent locally. With increasing distance, however, the opportunity cost of a relationship rises, since the number of equally preferred but more proximate contacts grows (SORENSEN, 2005). Apart from opportunity costs, meetings with client targets at longer distance also incur travel expenses and thus render direct client acquisition more risky and costly.

Alternatively, reputation may ease business development over long distance. Briefly defined, it is the expectation of future performance based on the perception of past behaviour. If a far away client learns about the positive reputation of a consultant, this consultant enjoys a higher propensity of winning that client. Since reputation is itself uncertain information, its reliability and credibility varies with the communication channel through which it circulates. Two significant types of reputation need to be distinguished (GLÜCKLER and ARMBRÜSTER, 2003; GLÜCKLER, 2005): Public reputation is public domain information, published and communicated freely in media and press. In contrast, reputation is *networked* when new contacts learn about each other's reputation through joint trusted contacts within their social network. If a consultant is referred to a remote client through a mutual contact, the client will be more likely to assign this consultant. This line of reasoning complies with the value shop rationale suggested earlier (STABELL and FJELDSTAD, 1998), where reputation serves as a key value driver. Combining the advantage of reputation networks with the network externality of overview economies, it may be argued that the more internationally

linked a city, the more likely will referrals transcend local networks and offer business opportunities in other places. This is exactly the kind of effect most desired by consultants and informs hypothesis 6:

H₆: Remote clients are won more frequently through personal recommendation than proximate clients.

3 Case region and method

3.1 Data

In Germany, management consulting revenues concentrate on the big metropolitan regions of Hamburg, Rhine-Ruhr, Rhine-Main, Rhine-Neckar, Munich and Berlin. In the year 2000, 60% of the entire market sales were concentrated in only 12 cities. Following Munich, the Rhine-Main region forms the second largest consulting agglomeration with over 4,500 consulting firms (STBA, 2003). While the region accounted for 8.8% of the national GDP, the consulting sector had a share of 11% in national consulting sales. At the same time and throughout the 1990s, the region experienced an intensive annual growth of 10% of new consultancy firm foundations, a rate far above the national average. The city of Frankfurt achieves very high connectivity scores in the European city network and thus belongs to the ‘major spines’ of highest city network centrality (TAYLOR and HOYLER, 2000). The case study region thus complies with the precondition of high connectivity necessary to test the hypotheses formulated in section 2. The metropolitan region of Frankfurt differs from other metropolitan regions in Europe in that it is a polycentric region with various central cities. Since 1999 there is a geographical definition of the region constituted by the regional chambers of commerce (see figure 1).

INSERT FIGURE 1 ABOUT HERE

The chamber of commerce provided a directory of publicly registered consulting firms in the region. According to the European industry standard, consulting firms are classified under

NACE 74.14.1 “Business Consulting”. After correcting the directory a total of 1,390 consulting firms were identified as the regional population for the survey. The postal survey was carried out in 2003 and collected data at two different levels: the firm and the relationship. At the firm level, 213 consulting companies completed the questionnaire which equals a response rate of 15.3%. The majority of the sample are small and medium size firms with an overall average of 22 employees in Germany. With a median of five consultants, more than half of all firms are in fact micro businesses. Moreover, the great majority of 189 firms are domestic without permanent locations or employees abroad. Following the European Federation of National Consulting Associations (FEACO 2003), the four principle consulting specialisations are represented quite equally within the sample: 26% of the firms operate in strategy consulting, 19% in IT consulting, 20% in human resources consulting, 24% in operations consulting and 10% in other fields but mostly in financial consulting.

At the relationship level, firms were asked to provide anonymous but individual information on their clients. This data collection was based on a network questionnaire comprising two elements. First, in a name generator consulting firms were invited to list all their clients up to a maximum of ten. Second, in a name interpreter consultants were asked to qualify each individual relationship along a number of criteria. Overall, of the 213 the major part of 186 consulting firms provided detailed information on 982 individual client relationships where each company provided 5.28 clients on average ($S.E. = 1.88$).

3.2 Measures

Measures are applied at two different data levels: the firm and the client relationship. At the firm level, employment growthⁱ over the time period between 1997 and 2002ⁱⁱ was used as a measure of firm performance and serves as the dependent variable. Conceptually, employment growth is an adequate measure since the scope for improved capital/labour ratios in consulting is limited. If firms win more business and work on more projects they

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necessarily need to extend their headcount. Empirically, earlier research on multinational consulting firms showed that employment is also a good proxy for revenues. While both measures were correlated at $r = .90$ ($p < .01$), even their growth rates were correlated at $r = .60$ ($p < .01$) (*source disclosed for anonymity*). In addition, it is impossible to access financial performance data since most companies are partnerships with no obligation to publish financial results. The independent variables include firm location, international activity, and the growth of repeat business while firm age was added as a control variable (see Table 1 for variable definitions).

At the relationship level, client location is the dependent variable. To predict the likelihood for client location within the metropolitan region, tie strength (i.e. duration of relation, frequency of contact, share of revenues that the client contributes) and referrals were defined as independent variables. With respect to methodological rigor and validity of the relational data, two potential sources of distortion need to be addressed. First, there is a problem of incomplete recalling of client relations. Interviewees usually tend not to remember all contacts that are relevant for a certain issue (MARSDEN, 2003). In this study, this problem is of limited relevance since it is unlikely that a consultant does not remember his most important clients. Moreover, the data collection was assessed against a measure of revenue coverage. Revenue coverage is the cumulated percentage of revenues that each client contributes to the overall annual revenues of a consulting firm. In two thirds of the cases the mentioned set of clients accounted for at least 80% of the revenues and in over 40% of the cases all clients were listed, i.e. they accounted for 100% of the revenues. The data are thus relatively exhaustive.

INSERT TABLE 1 ABOUT HERE

Second, there is a problem of information adequacy. Do respondents always learn about recommendations whenever they enter a new client relationship? Consultants were asked to indicate whether a client was won through referral and whether this client has referred new

clients actively to the company. Qualitative Interviews carried out prior to the development of the questionnaire suggest that successful recommendations always become overt to the consultant: “When somebody contacts us, we do of course ask him, how he came to approach us. ‘Well, this person has recommended me to turn to you’. Then we know it”. This is owed to the motivations of all three parties to disclose the recommendation: (i) the *recommender* is an existing client who invests in the relationship with the consultant by making an additional commitment; (ii) the *consultant*, in turn, owes gratitude and reciprocation of commitment thus reinforcing the position of the existing client; (iii) the *recommended* new client is also motivated to disclose the referral in order to ensure a higher commitment by the consultant. If the consultant failed to commit enough effort in the new client project, he knows that it would be known to the existing client thus damaging his credibility. The consultant’s reputation would erode with respect to both clients given their sanction potential. Hence, following the incentive argument and the evidence from interviews, client referrals will always be reported to the consultant.

4 Firm level results – toward a metropolitan location premium?

First, the argument is tested that the connectedness of world cities implies a stronger inclination to international business. The results in table 2 report that Frankfurt firms are significantly more international than firms in the rest of the region. While 57.3% of the firms in the region have international projects or operations, more than three quarters of all firms in Frankfurt operate internationally. In the region, less than half of the clients are international whereas firms located in Frankfurt have nearly 60% of their clients abroad. This finding is in full support with hypothesis 2 and encourages adopting the world city hypothesis argument that urban interconnection yields location advantages to knowledge services.

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Table 2 also supports hypothesis 3 that firms enjoy higher performance when they are located in the metropolitan centre. Consulting companies located in Frankfurt grew at 5.6% faster per annum than their counterparts in the region. Though only weakly significant, there seems to be a location premium of the metropolitan centre. This premium is, of course, only a black box and leaves open the real nature of the comparative advantage in an urban location. What is the cause of this growth differential? Following hypothesis 4, the assumption would be that internationality enhances firm performance. If world cities are more interconnected than other cities in the overall network, then international orientation in these world cities should convey comparative advantage to firms located in these centres.

INSERT TABLE 3 ABOUT HERE

In order to assess this expectation, multiple linear regression analysis is used to test the effect of firm location, international business, client orientation, repeat business growth and the control variable firm age on employment growth (Table 3). Model 1 confirms a weakly significant effect of firm location on annual employment growth. Despite a low level of significance the locational growth differential cannot be rejected. Model 2, however, clearly refutes a positive association between firm internationality and employment growth. Neither the proportion of international clients nor an own international operation increase the likelihood for enhanced firm growth. Therefore the link between the world city network hypothesis and positive returns for individual firms cannot be supported. Instead, model 3 shows a positive effect of repeat business growth on the average annual employment growth. This effect is maintained also in the final model 4, where firm location and the growth of repeat business are significant. Since the metropolitan region of Frankfurt is a very heterogeneous, poly-centric region with four other major cities, alternative models were used in addition to test if the location premium was not a function of the central city of Frankfurt but of a combined urban category of the major five cities vis-à-vis the rest of the region. The

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3 results, however, were insignificant and thus re-enforced the models presented in table 3:
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5 firms grew at higher rate throughout the booming late 1990s if they were located in Frankfurt.
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7 In conclusion, employment growth is higher in the city than in the region and obviously
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9 contingent on the ability to increase the repeat business with existing clients. At the same time
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11 it has to be emphasised that the effects are not all equally strong and significant and that
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13 model 4 only explains around 13% of the overall variance in the data. Nonetheless, one would
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15 not expect to account fully for a performance indicator such as firm growth only with a set of
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17 three general variables.
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25 **5 Relationship level results – toward a geography of reputation**

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27 In the survey, each consultant was asked to specify for each individual client relation whether
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29 their client had been won through a personal recommendation and whether that client had
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31 already referred his business to another client afterwards. The results are astonishing in terms
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33 of the empirical weight of personal recommendation and so called reputation networks
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35 (GLÜCKLER, 2005). 45% of all clients were won through some form of networked
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37 reputation, i.e. through referral by another client or other third party. More than 40% of clients
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39 had themselves spread successful referrals and thus contributed to the business development
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41 of a focal consulting company. Comparing clients who referred new contacts with those who
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43 did not, it turns out that the likelihood for a referral increases with the duration of a client
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45 relationship and its relative contribution to the consultancy's revenues. Those who had
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47 referred new business by recommendation already bought services from their consultancy for
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49 over 5.5 years as compared to only 3.5 years for those who had not. Moreover, those who had
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51 referred new business contributed 19% to a consulting firm's revenues as compared to 14% in
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53 the case of the non-recommenders, on average. The analysis for individual clients across all
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55 client networks demonstrates that these important relationships are not only intensive and
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57 beneficial for themselves, but that they are furthermore sources of reputational spill-over.
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Thus, close and enduring relations as well as big client accounts clearly improve new business development.

Following earlier empirical findings discussed in section 2, hypothesis 1 expects that there is no significant difference between local clients and remote clients in terms of the quality of the relationship and tie strength. Table 4 reports the results from logistic regression analysis. Model 1 displays the effects of tie strength on the likelihood for a client to be located in the same region and shows that frequency of contact and duration of the relationship both improve the odds only negligibly and at a low level of significance. In fact, none of the three variables of tie strength are significantly associated with client location in bivariate models. Therefore, business relationships seem to be relatively independent from geographical constraints. This finding is particularly interesting since many of the arguments in geographical cluster theories are based on the difference that proximity makes for the intensity and quality of personal contact. Hence, the results support hypothesis 1 as expected.

INSERT TABLE 4 ABOUT HERE

Instead of focusing on the geography of direct relationships the argument about metropolitan location advantage concentrates on the geography of indirect relationships and economies of overview: finding clients and raising business opportunities through persons. Following hypotheses 5 and 6, it is another question whether firm location makes a difference for the geography of referrals. Hypothesis 5 suggests that firms in the metropolitan centre have relatively more clients outside the region than firms at the metropolitan fringe. In fact, the t-test for mean differences supports this expectation: While consulting firms in the metropolitan fringe had 47.8% of clients outside the region, consultants in Frankfurt had 55.4% of their clients and thus significantly more outside the region ($N = 975$; $T = 2.252$; $p < .05$). If the argument about the importance of reputation networks and their concentration in the metropolitan centre is correct, then one would also expect hypothesis 6 to be supported

empirically. The key comparative advantage of the centre rests in the density of trans-local social networks and thus offers the economies of overview necessary to be referred to trans-local clients. Again, the sample data support this hypothesis. Clients outside the region were won significantly more often through referrals than within the region: While practically half of the external clients (49%) were won through reputation networks, only 42% of the local clients were won by referral ($N = 966$; $T = 1.999$; $p < .05$).

Since these comparisons measure the individual effects only separately, the variables are further submitted to multivariate logistic regression models in order to study their combined effects. In table 4 models 2 and 3 display the multivariate logit coefficients for the aggregate regression models. Model 2 confirms the direction and strength of association between firm location, referrals and client location. Both variables have the correct signs and are significant, and also the model is significant. There is joint effect that when a consultancy is located in Frankfurt, their clients are more likely to be located outside the region, and when a client was referred to the consulting company, that client is also more likely to be outside the region. In addition, when tie strength (see model 1) are added to model 3, the suggested interpretation is further enhanced. While the variables of tie strength are either less or no longer significant, the effect of firm location becomes even more pronounced and highly significant. It should be noted that the models are not intended to optimise the overall explanatory power of the models but to demonstrate the adequacy of the combined effects of firm location and referrals in order to support the argument of trans-local reputational spillover concentrated in the city.

6 Discussion and conclusion

This paper has discussed the shortcomings of current agglomeration theory in the context of knowledge services. It has argued that the city does not only offer local externalities based on traded interdependencies but also trans-local economies of overview. The local advantages

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are well understood. It should not be neglected that often at least forty percent of the client base is located within the same region und there is also evidence that knowledge service firms grow within their regional customer base in less connected, secondary cities and regions (DANIELS and BRYSON, 2005). However, and quite against geographical intuition, this paper demonstrates that the quality of client relations was independent of geographical proximity. Since specialised knowledge services follow a value creation logic in which resources are aligned often uniquely to solve specific problems and to produce tailored solutions (STABELL and FJELDSTAD, 1998), face-to-face collaboration with clients does not necessarily depend on permanent co-location but may also be facilitated through temporal travel across distance.

Apart from the local linkages, this paper has argued for the city as an important locus for trans-local business opportunity. The survey presented here found that Frankfurt firms won more clients outside the region and that they won them through reputational spillover, i.e. inter-personal referrals. Local reputation networks of this kind convey trans-local network externalities in that they circulate referrals to clients in other places. The regression models presented here may only explain a limited portion of the variance. Instead of being deterministic, the results of this paper rather indicate a contingent relation (SAYER, 2000) between a location in the city and the propensity to find business opportunities outside the region. This does not deny the fact that firms located within the city region may also find access to external business opportunities. The literature on knowledge intensive business services has identified various mechanisms to extend business to other regions, such as referrals from ongoing repeat business or piggy-backing strategies through non-equity partnerships with other consultancies (O’FARRELL and WOOD, 1999). Trans-local reputational spillover in the city forms one of these various mechanisms that drives trans-local business development.

This empirical finding suggests a geography of reputation where the dense, diverse and trans-locally connected urban communication networks spread reputation farthest and thus yield trans-local business opportunities to local firms. At the same time this geography of reputation connects the concept of local economies of overview (JOHANNISSON, 1990) with the implicit notion of positive network externalities in the world city network approach. Knowledge services cluster in cities – among other reasons – because cities boost business opportunities across space. This paper thus links to the broader debate about agglomeration economies and contributes to an understanding of the interplay between local externalities and global linkages (BATHELT *et al.*, 2004). This recursive interdependence of local and global relations constitutes an understanding of the city as a Neo-Marshallian node (AMIN and THRIFT 1992; NACHUM and KEEBLE, 2003).

The analysis has also shown that the city offers a location premium. Frankfurt firms enjoyed stronger employment growth, on average, than firms located in the rest of the metropolitan region. The causality for this location premium remains unclear though. Since overview and reputation advantages are measured at the level of individual relationships, it is difficult to test the effect of these economies of overview on performance at the firm level. Therefore, future research is necessary to test for the effect of overview economies and reputation networks on firm performance.

The findings here suggest that the metropolitan region does not convey homogenous advantages as a whole. Instead, the city clearly dominates as the primary locus of opportunity and trans-local reputational spill-over. The example of the region Frankfurt/Rhine-Main is an especially interesting case because it is one of the few metropolitan regions in Europe that has a polycentric structure. We might expect an even more pronounced decay between the city and its fringe in mono-centric metropolitan regions such as London, Paris or Madrid. Finally, since this research has focused on the analysis of firms within only one metropolitan region,

future research should pursue cross-sectional comparison between cities and regions to explicitly control for the connectivity of a city in the world city network.

7 References

- AMIN, A. and THRIFT, N. (1992) Neo-Marshallian nodes in global networks, *International Journal of Urban and Regional Research* **16**, 571-587.
- AUDRETSCH, D. B. and FELDMAN, M. P. (2004) Knowledge spillovers and the geography of innovation, in HENDERSON, V. and THISSE, J.-F. (Ed) *Handbook of Urban and Regional Economics. Cities and Geography*, pp. Elsevier Science, Oxford.
- BATHELT, H., MALMBERG, A. and MASKELL, P. (2004) Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation, *Progress in Human Geography* **28**, 31-56.
- BENNETT, R. J., BRATTON, W. and ROBSON, P. (2000) Business advice: The influence of distance, *Regional Studies* **34**, 813-828.
- BENNETT, R. J., GRAHAM, D. J. and BRATTON, W. (1999) The location and concentration of business in Britain: Business clusters, business services, market coverage and local economic development, *Transactions of the Institute of British Geographers* **24**, 393-420.
- BODDEWYN, J., HALBRICH, M. and PERRY, A. C. (1986) Service multinationals: conceptualization, measurement and theory, *Journal of International Business Studies* **17**, 41-57.
- BRYSON, J. R. and DANIELS, P. W. (1998) Business link, strong ties and the wall of silence: Small and medium sized enterprises and external business service expertise, *Environment and Planning C: Government and Policy* **16**, 265-280.
- BRYSON, J. R., KEEBLE, D. and WOOD, P. (1993) The creation, location and growth of small business service firms in the United Kingdom, in DANIELS, P. W., ILLERIS,

- S., BONAMY, J. and PHILIPPE, J. (Ed) *The Geography of Services*, pp. 118-131.
Frank Cass, London, Portland (OR).
- BRYSON, J. R., KEEBLE, D. and WOOD, P. (1997) The creation and growth of small business service firms in post-industrial Britain, *Small Business Economics* **9**, 345-360.
- CAPELLO, R. (2000) The city network paradigm: Measuring urban network externalities, *Urban Studies* **37**, 1925-1945.
- CHRISTALLER, W. (1933) *Die zentralen Orte in Süddeutschland: eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen*. Gustav Fischer, Jena.
- CLARK, T. (1993) The market provision of management services, information, asymmetries and service quality. Some market solutions: An empirical example, *British Journal of Management* **4**, 235-251.
- COASE, R. (1937) The nature of the firm, *Economica* **4**, 386-405.
- COE, N. and TOWNSEND, A. R. (1998) Debunking the myth of localized agglomerations: The development of a regionalized service economy in South-East England, *Transactions of the Institute of British Geographers* **23**, 385-404.
- DANIELS, P. W. (1991) Producer services and the development of the space economy, in DANIELS, P. W. and MOULAERT, F. (Ed) *The Changing Geography of Advanced Producer Services*, pp. 135-150. Belhaven Press, London, New York.
- DANIELS, P. and BRYSON, J. (2005) Sustaining business and professional services in a second city region, *Services Industries Journal* **25**, 505 - 524.
- DANIELS, P. W., VAN DINTEREN, J. J. and MONNOYER, M. C. (1992) Consultancy Services and the Urban Hierarchy in Western Europe, *Environment and Planning A* **24**, 1731-1748.

- DE LANGE, N. (1993) Standorte unternehmensbezogener Dienstleistungsfunktionen in Deutschland. Das Beispiel der Wirtschaftsprüfer, *Geographische Zeitschrift* **81**, 18-34.
- ELLISON, G. and GLAESER, E. L. (1999) The geographic concentration of industry: does natural advantage explain agglomeration? *The American Economic Review* **89**, 311-316.
- FEACO (2003) Survey of the European Consultancy Market 2003. FEACO, Brussels.
- FELSENSTEIN, D., SCHAMP, E. W. and SHACHAR, A. (Ed) (2002) *Emerging Nodes in the Global Economy: Frankfurt and Tel Aviv Compared*. Kluwer, Dordrecht.
- FRIEDMANN, J. (1986) The world city hypothesis, *Development and Change* **4**, 12-50.
- GERTLER, M. S. (2003) Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there), *Journal of Economic Geography* **3**, 75-99.
- GLAESER, E. L., KALLAL, H. D., SCHEINKMAN, J. A. and SHLEIFER, A. (1992) Growth in cities, *The Journal of Political Economy* **100**, 1126-1152.
- GLÜCKLER, J. (2005) Making embeddedness work: Social practice institutions in foreign consulting markets, *Environment and Planning A* **37**, 1727 – 1750.
- GLÜCKLER, J. and ARMBRÜSTER, T. (2003) Bridging uncertainty in management consulting: The mechanisms of trust and networked reputation, *Organization Studies* **24**, 269-297.
- HAAS, H. D. and LINDEMANN, S. (2003) Wissensintensive unternehmensorientierte Dienstleistungen als regionale Innovationssysteme, *Zeitschrift für Wirtschaftsgeographie* **47**, 1-14.
- HERMELIN, B. (1998) Location of professional business services. Conceptual discussion and Swedish case-study, *European Urban and Regional Studies* **5**, 263-275.
- ILLERIS, S. (1994) Proximity between service producers and service users, *Tijdschrift voor Economische en Sociale Geografie* **85**, 294-302.

- JACOBS, J. (1969) *The Economy of Cities*. Random House, New York.
- JAFFE, A. B., TRAJTENBERG, M. and HENDERSON, R. (1993) Geographic localization of knowledge spillovers as evidenced by patent citations, *Quarterly Journal of Economics* **108**, 577-598.
- JOHANNISSON, B. (1990) Economies of overview: Guiding the external growth of small firms, *International Small Business Journal* **9**, 32-44.
- KATZ, M. L. and SHAPIRO, C. (1985) Network externalities, competition, and compatibility, *American Economic Review* **75**, 424-440.
- KEEBLE, D., BRYSON, J. and WOOD, P. (1992) Entrepreneurship and flexibility in business services: the rise of small management consultancy and market research firms in the United Kingdom, in CALEY, K., CHITTENDEN, F., CHELL, E. and MASON, C. (Ed) *Small Enterprise Development: Policy and Practice in Action*, pp. 43-58. Chapman, London.
- KEEBLE, D. and NACHUM, L. (2002) Why do business service firms cluster? Small consultancies, clustering and decentralization in London and Southern England, *Transactions of the Institute of British Geographers* **27**, 67-90.
- KRUGMAN, P. R. (1991) *Geography and Trade*. Leuven University Press; MIT Press, Leuven, Belgium; Cambridge, Mass.
- LILJA, K. and POULFELT, F. (2001) The anatomy of network building in management consulting firms, in BUONO, A. F. (Ed) *Current Trends in Management Consulting*, pp. 3-21. Information Age Publications, Greenwich (CT).
- LUNDVALL, B.-Å. and JOHNSON, B. (1994) The learning economy, *Journal of Industry Studies* **1**, 23-42.
- MALMBERG, A. and MASKELL, P. (2002) The elusive concept of localization economies: Towards a knowledge-based theory of spatial clustering, *Environment and Planning A* **34**, 429-449.

- MARSDEN, P. V. (2003) Interviewer effects in measuring network size using a single name generator, *Social Networks* **25**, 1-16.
- MARSHALL, A. (1956 [1890]) *Principles of Economics*. Macmillan, London.
- MARSHALL, J. N. and WOOD, P. A. (1992) The role of services in urban and regional development: Recent debates and new directory, *Environment and Planning A* **24**, 1255-1270.
- MOULAERT, F. and DJELLAL, F. (1995) Information technology consultancy firms: Economics of agglomeration from a wide-area perspective, *Urban Studies* **32**, 105-122.
- MOULAERT, F. and MARTINELLI, F. (1993) The location of advanced producer services firms: Theory and illustrations, *Geographische Zeitschrift* **81**, 1-17.
- NACHUM, L. and KEEBLE, D. (2001) External Networks and Geographic Clustering as Sources of MNE Advantages: Foreign and Indigenous Professional Service Firms in Central London. ESRC Centre for Business Research University of Cambridge, Cambridge.
- NACHUM, L. and KEEBLE, D. (2003) Neo-Marshallian Clusters and Global Networks: The Linkages of Media Firms in Central London, *Long Range Planning* **36**, 459-480.
- O'FARRELL, P. N. and WOOD, P. (1999) Formation of strategic alliances in business services: Towards a new client-oriented conceptual framework, *Services Industries Journal* **19**, 133-51.
- PORTER, M. E. (1990) *The Competitive Advantage of Nations*. Free Press, New York.
- RALLET, A. and TORRE, A. (1999) Is geographical proximity necessary in the innovation networks in the era of global economy? *Geojournal* **49**, 373-380.
- ROOS, M. W. M. (2005) How important is geography for agglomeration? *Journal of Economic Geography* **5**, 605-620.

- 1
2
3 SAMPSON, G. P. and SNAPE, R. H. (1985) Identifying the issues of trade in services, *World*
4
5 *Economy* **8**, 171-182.
6
7
8 SASSEN, S. (1994) *Cities in a world economy*. Pine Forge Press, Thousand Oaks, Calif.
9
10
11 SAYER, A. (2000) *Realism and Social Science*. Sage, London.
12
13 SCHAMP, E. W. (1986) Industriestandort und Wirtschaftsdienste im ländlichen Raum. Zum
14
15 Reichweitenmuster der Dienstleistungsnachfrage von Industrieunternehmen in
16
17 Niedersachsen, *Berichte zur deutschen Landeskunde* **60**, 201-226.
18
19
20 SCHICKHOFF, I. (1985) Dienstleistungen für Industrieunternehmen: Einflüsse von
21
22 Unternehmens- und Standorteigenschaften auf die Reichweite ausgewählter
23
24 industrieller Dienstleistungsverflechtungen, *Erdkunde* **39**, 73-84.
25
26
27 SCITOVSKY, T. (1954) Two concepts of external economies, *The Journal of Political*
28
29 *Economy* **62**, 143-151.
30
31
32 SCOTT, A. J. (1988) *New Industrial Spaces: Flexible Production Organization and Regional*
33
34 *Development in North America and Western Europe*. Pion, London.
35
36
37 SMITH, D. A. and TIMBERLAKE, M. (1995) Conceptualising and mapping the structure of
38
39 the world system's city system, *Urban Studies* **32**, 287-302.
40
41
42 SMITH, D. A. and WHITE, D. (1992) Structure and dynamics of the global economy:
43
44 Network analysis of international trade 1965-1980, *Social Forces* **70**, 857-893.
45
46
47 SORENSON, O. (2005) Social networks, informational complexity and industrial geography,
48
49 in AUDRETSCH, D. B., FORNAHL, D. and ZELLNER, C. (Ed) *The Role of Labour*
50
51 *Mobility and Informal Networks for Knowledge Transfer*, pp. 79-95. Springer, New
52
53 York.
54
55
56 STABELL, C. and FJELDSTAD, Ø. (1998) Configuring value for competitive advantage: on
57
58 chains, shops, and networks, *Strategic Management Journal* **19**, 413-437.
59
60
STATISTISCHES BUNDESAMT (2003): Umsatzsteuerstatistik. Datenbankauszug.
[Statistics on value-added tax]. Wiesbaden: Statistisches Bundesamt.

- 1
2
3 STIGLER, G. J. (1951) The division of labor is limited by the extent of the market, *The*
4
5 *Journal of Political Economy* **59**, 185-193.
6
7
8 STORPER, M. (1997) *The Regional World: Territorial Development in a Global Economy*.
9
10 Guilford Press, New York.
11
12
13 STORPER, M. and VENABLES, A. J. (2004) Buzz: face-to-face contact and the urban
14
15 economy, *Journal of Economic Geography* **4**, 351-370.
16
17
18
19 STRAMBACH, S. (1994) Knowledge intensive business services in the Rhine-Neckar area,
20
21 *Tijdschrift voor Economische en Sociale Geografie* **85**, 354-365.
22
23
24 STRAMBACH, S. (1995) *Wissensintensive unternehmensorientierte Dienstleistungen:*
25
26 *Netzwerke und Interaktion*. Lit, Münster.
27
28
29 TAYLOR, P. J. (2004) *World City Network: A Global Urban Analysis*. Routledge, London,
30
31 New York.
32
33
34 TAYLOR, P. J., CATALANO, G. and WALKER, D. R. F. (2002) Measurement of the world
35
36 city network, *Urban Studies* **39**, 2367-2376.
37
38
39 TAYLOR, P. J. and HOYLER, M. (2000) The spatial order of European cities under
40
41 conditions of contemporary globalisation, *Tijdschrift voor Economische en Sociale*
42
43 *Geografie* **91**, 176-189.
44
45
46 TORDOIR, P. P. (1994) Transactions of professional business services and spatial systems,
47
48 *Tijdschrift voor Economische en Sociale Geografie* **85**, 322-332.
49
50
51 WILLIAMSON, O. E. (1979) Transaction-cost economics: The governance of contractual
52
53 relations, *Journal of Law and Economics* **22**, 233-261.
54
55
56 WILLIAMSON, O. E. (1981) The economics of organizations: The transaction cost approach,
57
58 *American Journal of Sociology* **87**, 548-577.
59
60

WOOD, P. (1996) Business services, the management of change and regional development in the UK: A corporate client perspective, *Transactions of the Institute of British Geographers* **21**, 644-665.

WOOD, P. (Ed) (2002) *Consultancy and Innovation: The Business Service Revolution in Europe*. Routledge, London, New York.

ⁱ The compound annual growth rate indicates the annual rate of change for an absolute growth difference over a

period of several years. It is calculated as
$$CAGR_x = \left(\frac{x_{t1}}{x_{t0}} \right)^{\frac{1}{T}} - 1$$
, where x denotes the variable of interest, t_0 denotes beginning value and t_1 the ending value of x , and T signifies the time passed in years. Since only 63.4% of the firms were founded before 1997, absolute growth comparisons along these six years could not be made for the entire sample. However, the CAGR measurement technique permits relative comparisons between firms with different (but overlapping) time periods. Consequently, it is acceptable to compare average annual growth rates with those firms that were established even after 1997.

ⁱⁱ The time period between 1997 and 2002 is particularly suitable for the study because the growth boom in German management consulting speeded up in the mid 1990s until the sudden economic downturn in 2002. This period thus represents a sequence of continuous and relatively stable growth conditions for management consulting in which most firms either increased their headcount or were newly founded.

Figure 1: The metropolitan region of Frankfurt with its major cities

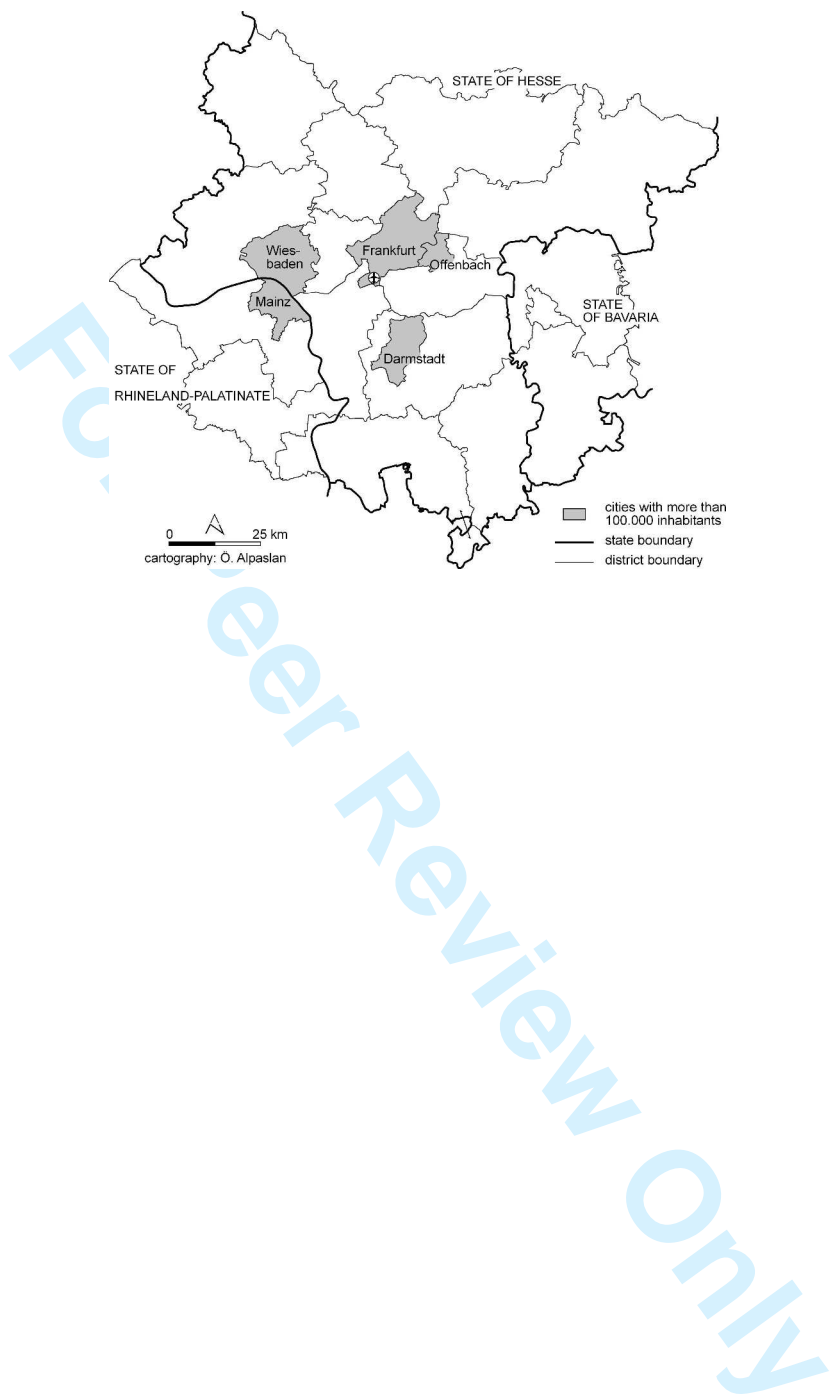


Table 1: Variable labels and definitions

Variable	Definition
A. Firm level	
<i>Dependent variable</i>	
Firm growth	Compound annual growth rate (CAGR) of employment in Germany 1997-2002
<i>Independent variables</i>	
Firm location	Dummy variable, 1 = Frankfurt (0 = metropolitan region)
Repeat business growth	Dummy variable, 1 = increase (0 = constant or decrease). Repeat business is the percentage of sales with existing clients (new or follow-up projects),
International activity	(1) International clients, percentage of international clients (2) International operations, dummy variable, 1 = consulting firm has international activity (i.e. temporary travel, non-equity cooperation, FDI) (0 = no international operation)
Firm age (control)	Year of firm foundation in Germany
B. Relationship level	
<i>Dependent variable</i>	
Client location	Dummy variable, 1 = within the region (0 = outside the region)
<i>Independent variables</i>	
Referral	Dummy variable, 1 = yes, "this client has been gained through the referral of another client or business partner" (0 = direct client acquisition)
Firm location	Dummy variable, 1 = consulting firm located in Frankfurt (0 = in the region)
Tie strength	(1) Duration of relationship in years (2) Frequency of contact (daily, weekly, monthly, a few times per year, less often) (3) Client contribution to revenues in percent of total revenues in the year 2002

Table 2: Student t-Test for mean differences between core city and metropolitan region

Variable	Group variable	N	Mean	S.E.	T	d.f.	Mean diff.
Int. operations	Region	89	0.573	0.053	-2.825 ^a	174.165	-0.192
	City	98	0.765	0.043			
Int. clients	Region	87	43.667	3.900	-3.044 ^a	183.000	-15.854
	City	98	59.520	3.478			
Employment growth (CAGR)	Region	45	0.033	0.029	-1.754 ^c	60.583	-0.056
	City	62	0.089	0.013			
Firm age	Region	89	1993.865	1.049	0.040	185.000	2.960
	City	98	1992.633	0.871			

^a $p < .01$; ^b $p < .05$; ^c $p < .10$; standard errors in parentheses

Table 3: OLS regression coefficients for estimating employment growth (CAGR)

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	-8.812 ^a (3.155)	-9.641 ^c (2.727)	-8.536 ^a (2.629)	-9.569 ^a (3.093)
Firm location	.052 ^c (.028)			.047 ^c (.028)
Int. operations		.045 (.028)		
Int. clients		.000 (.000)		
Repeat business			.073 ^a (.024)	.072 ^b (.028)
Firm age	.004 ^a (.002)	.005 ^a (.001)	.004 ^a (.001)	.004 ^a (.002)
<i>R</i> ² (<i>adjusted</i>)	.085	.076	.126	.131
<i>F</i>	5.909	4.485	9.797	6.155
<i>p</i>	.004	.005	.000	.001
<i>S.E.</i>	.144	.136	.134	.142
<i>d.f.</i>	106	126	122	103
<i>N</i>	107	127	123	104

^a $p < .01$; ^b $p < .05$; ^c $p < .10$; standard errors in parentheses. Size has no significant effect on the average employment growth.

Table 4: Logistic regression models for the estimation of client location (1=metropolitan region)

Variables	Model 1	Model 2	Model 3
Intercept	.163 (.241)	.237 ^b (.119)	-.107 (.221)
Duration of relation	.032 ^c (.017)		.017 (.016)
Frequency of contact	-.176 ^c (.103)		-.188 ^c (.097)
Share in revenues	-.002 (.005)		
Firm location		-.320 ^b (.137)	-.378 ^a (.140)
Referral		-.290 ^b (.137)	-.270 ^c (.142)
-2 Log-Likelihood	1078.415	1197.483	1155.059
χ^2	6.378 ^c	9.261 ^a	15.734 ^a
R^2 (Nagelkerke)	.011	.014	.025
Hit ratio (%)	51.9	55.2	56.2
N	783	871	845

^a $p < .01$; ^b $p < .05$; ^c $p < .10$; standard errors in parentheses