With a Little Help from my Spouse: The Role of Trust in Family Busimess

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Abstract

Empirically, self-employed persons often operate with the support of their partners or other household members as co-workers in the firm. The formal or informal employment of the marriage partner in particular seems to have a lot of advantages, such as fiscal benefits and low wage costs. But from a theoretical point of view, these advantages are jeopardized by serious cooperation problems: If the spouse of the self-employed decides to work in the jointly-run business, former qualifications are lost. Hence a one-sided dependence on the part of the co-working spouse arises, which increases with the amount of relation-specific investments. Hence the actors are confronted with a cooperation problem, because the decision for co-working requires trust concerning the future action of the self-employed. Within this framework, this paper is focused on the determinants which influence the decisions concerning collaborating in the business of a self employed life's companion as well as the extent of labor provided in the case of co-working. It can be assumed that the three types of determinants investigated in this paper affect the assignment of a spouse or cohabitation partner in the business of a self-employment person: (1) economic determinants which are individual productivity and human capital of the life's companion, (2) the situation of the family and the household, and (3) characteristics of the entrepreneur and the firm. Based on a sample of self-employed empirical analysis indicates that trust and specialization play a crucial role in explaining co-working of the life's companions of self-employed persons. However, economic determinants like productivity and human capital do not show the expected effects on collaboration.

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1   Introduction

In most modern industrial societies, the number of self-employed persons steadily decreased until the 70s, when self-employment rates became stable at a low level. Since then, self-employment rates have shown a small increase but also a high turnover in and out of self-employment (Aronson 1991, Arum 1997, Luber and Gangl 1997). This development also lead to an increasing interest in the analysis of small and medium-sized firms which were identified as a major source of jobs and economic dynamics in general (see. e.g. Granovetter 1984, Birch 1987). Consequently, most research focused on the determinants for the emergence and the success of new firms and self-employment (see e.g. Kalleberg and Leicht 1991, Preisendörfer and Voss 1990, Bednarzik 2000, Brüderl and Preisendörfer 2000, Earle and Sakova 2000).

One result of these studies about small and medium sized firms was the importance of the family for those entrepreneurs (e.g. Light and Karageorgis 1994, Loscocco 1997, Brüderl and Preisendörfer 1997). The social support by family members seems to be a key resource especially when the access to capital is restricted. It is often argued that co-working of household members can lead to economic advantages because of low labor costs and fiscal benefits. Hence, the collaboration of family members is assumed to be a beneficial strategy for the self-employed and their relatives. Consequently, the role of the family for business owners was stressed especially in research on immigrant entrepreneurship (see e.g. Light and Bhachu 1993, Portes and Zhou 1996, Sanders and Nee 1996, Loscocco 1997, Portes, Haller and Guarnizo 2002). Moreover, there is increasing evidence for the general relevance of the "private embeddedness" of self-employment in a family network (e.g. Baines, Wheelock and Abrams 1997, Brüderl and Preisendörfer 1997, Laferrère and McEntee 1999).

Although these studies highlight the importance of the family for self-employment, we know next to nothing about the family of entrepreneurs, the problems and advantages of being involved in a family business, and the strategies to cope with this situation. Mostly, it is taken for granted that the spouse or other family members decide to support the activities of the entrepreneur e.g. by co-working in the family business. This may be no problem when the actors have no other options due to restricted labor market access and low family income like e.g. most immigrant family members (e.g. Sanders and Nee 1996). However, in general there are other options like being employed by another employer. So the question arises under which conditions actors prefer to work in the business of a family member. Moreover, the decision to join or to found a family business leads to severe problems of cooperation and allocation: Who will have to do which tasks? How to split work effort as well as business revenues? What will happen in case of a divorce? It becomes evident that running a joint family business requires some safeguards in order to solve these problems.

In search for answers to these questions, this paper focuses on the relationship between an entrepreneur and his spouse or cohabitation partner. I will refer to these married or non-married partners of entrepreneurs as "(life's) companions" and their marriage or cohabitation as "private relationship" in the following.[2] In general, these co-working women have three options which can be mixed in all possible combinations: They can devote their time to their family and the household, they can work in the family business or they can look for an employment in the labor market. In this situation, the women are confronted with different problems. Especially when a well-educated woman works in her partner's business, she gives up the high income she could earn outside a jointly-run family business. Moreover, she runs the risk of losing her occupational training in the long run, if her occupation in the market does not fit the qualifications necessary for the family business.[3] This situation becomes problematic for the spouse of a self-employed and, more seriously, for people living in cohabitation. If the companion must invest in special skills to collaborate in the business of the entrepreneur and her previous occupational training cannot be used, she will decide to work inside the firm only if she expects the private relationship to last. However, a glance at the high divorce rates in western societies is evidence for the fact that emotional relationships can no longer be relied on exclusively to develop stable long-term partnerships (England and Farkas 1986: 59).

Within this framework, the determinants which influence the decisions for collaborating in the partner's business are examined as well as the extent of labor provided by the companion in the case of co-working. In this paper three types of determinants are investigated which can be assumed to affect the assignment of a life's companion in the business of a self-employed person: (1) determinants concerning the private partnership, the household and the family, (2) economic determinants of individual productivity and human capital of the companion, (3) characteristics of the family business. Within this framework, a special focus lies on problems of trust and stability concerning the private relationship between the entrepreneur and the companion.

The structure of this paper is as follows: In the second chapter the theoretical background will be outlined and hypotheses are developed. Therefore, the economic motives of co-working and trust problems within the firm of the entrepreneur are discussed. Then the role of the family and the private partnership for co-working will be highlighted. The third chapter introduces empirical data and describes the variables and methods. In the fourth chapter, some descriptive findings and the results concerning the hypotheses are presented. The final chapter contains a short summary and a discussion of the results.

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[2] Due to the fact that the empirical analysis is restricted to female companions, the feminine pronouns for the companion and masculine ones for the entrepreneur are used. However, in principal the theoretical approach developed in this section could be applied also to female entrepreneurs.

[3] The term „family business" is used in this paper as a synonym for the firm of the self-employed person.

2 Determinants for co-working of companions

Due to our research questions, the theoretical analysis focuses on the dyad of the entrepreneur and his partner. In this dyadic relationship, the actors usually have common interests, e.g., a good education for the children or a high household income, as well as some conflicting interests like the distribution of household labor. It is assumed that each individual actor decides intentionally on the use of his or her resources. As Raub and Weesie (1993: 7) pointed out, the partners are confronted with two basic problems: First, who will contribute which resources to the relationship and how will the obtained benefits be distributed (problem of allocation), and second, how can the actors ensure that the relevant explicit or implicit agreements will be kept (problem of cooperation). To solve the problem of cooperation, the actors need mechanisms to prevent opportunistic behavior by the partner. Usually, a combination of mechanisms will be used; this can be called "governance structure" (Williamson 1983; Williamson 1985, Pollack 1985, Raub and Weesie 1993: 16). Governance structures can include all types of commitments like formal contracts, informal agreements, or investments that are lost in the case of opportunistic behavior.

For many types of dyadic relationships, the cooperation and allocation problems as well as the governance structures used by the actors have already been analyzed empirically.[4] However, it is argued here that the private relationships of entrepreneurs and their companions are a special type of match which differs from other dyadic relationships. Contrary to purely private marriage relationships or typical employment contracts, the actors examined could be seen as simultaneously embedded in two different functional settings: In their respective private household on the one hand and in the business of the entrepreneur on the other.

Multi-person households as the first functional setting are prototypes of long-term relationships based on the division of labor. Private households can be defined as socio-economic units on the basis of a common residence (Blau, Ferber and Winkler 2001: 6). The formation of multi-person households is usually explained by economies of scale, that is advantages resulting from pooling individual resources for collective use (Becker 1991). Within one of the most famous theories concerning households, the new home economics (e.g. Becker 1991; Berk and Berk 1983, Ierulli and Tommasi 1995), problems of cooperation and allocation do not play a major role. Households and families are seen as small production units which optimize one joint utility function. Individual interests were therefore neglected which lead to a variety of criticism (see e.g. Berk 1980, Ben-Porath 1982, England and Budig 1998) and to new models which explicitly acknowledged the role of interest conflicts in households and marriage relationships (e.g. England and Farkas 1986, Bergstrom 1989, Ott 1992). This paper is based on the idea, that the actors are able

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[4] See, for example, Abraham (1996) for employment relationships, Blumberg (1997) and Batenburg (1995) for industrial cooperations, and Giesen (1994) for households. Moreover see Raub & Weesie (1996) for further details and research projects.

to solve these problems of cooperation and allocation by using so-called commitments. These commitments restrict opportunities for opportunism and create therefore trust between the partners (e.g. Raub and Weesie 1993, Kalmijn and Bernasco 2000). Such commitments can be institutionalized e.g. by marriage or marriage contracts, but more often they are implicit invest-ments like children or joint property. The decisions of the entrepreneur's companion concerning these commitments will not only be influenced by the expected characteristics of the marriage or cohabitation relationship within the household but also by the second functional setting, the business of the self-employed partner.

In contrast to employed persons, the entrepreneur is confronted with several problems concern-ing the management of his business. Especially in the case that he is not able to perform all necessary tasks without additional manpower, he has to hire employees. Hence, so-called principal-agent-relations are established (see, e.g., Pratt and Zeckhauser 1985), which are characterized by specific problems like the sufficient monitoring of the agent by the principal. Within this context, the entrepreneur has the possibility of relying on his life's companion's manpower. However, it will be shown that the collaboration of the latter will create cooperation problems of its own. Again, these problems will have to be solved by appropriate commitments and the creation of trust concerning the future of these arrangements.

Hence, this paper focuses on so-called multiplex relationships, which are characterized by two or more different types of transactions between the same interaction partners.[5] Within this framework, it will be tried to specify factors influencing the decision of the companion for co-working. Therefore, the companion's economic motives in terms of income possibilities are highlighted. Moreover, it will be shown that the multiplex character of the match facilitates the management of intra-firm trust problems on the one hand but causes certain problems of trust in the case of co-working on the other. The theoretical framework used in this paper stresses the governance mechanisms which are able to solve the basic problem of cooperation between the self-employed and his companion and therefore make co-working based on specific investments in human capital possible. Beside the basic decision to work in the companion's business, the amount of time provided will be investigated. Based on the same theoretical framework, the family situation is supposed to play a key role for the explanation of this factor. Note that the existence of a private partnership as well as the self-employment of one of the partners is treated as given and will not be explained within this framework.

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[5] Although this term focuses on the character of network relationships, it is not the aim of this paper to analyze private or business networks of the actors. However, if the family in the household is interpreted as a special type of network, the similarity to the idea of multiplex relationships within the network approach becomes evident. For more details on multiplex networks see e.g. Knoke and Kuklinski (1982: 15-16).

2.1   Economic Motives of Co-Working

Co-working in the companion's business can be seen as a special type of labor force participation. Hence it seems to be plausible to start any explanation with a general microeconomic concept which is based on the individual productivity. Actors who offer their manpower in the labor market will gain monetary assessable returns for the labor applied. This income depends on, among other factors, their respective abilities, called human capital (Stinchcombe 1990, Becker 1993), and the characteristics of a particular position like the equipment provided by the firm. Standard labor market theory now assumes that actors will try to maximize their income by choosing the best placement offered.

From this point of view, the companion compares the job in the business of her partner with jobs offered in the external labor market and chooses the one which provides the higher income. To analyze this decision, the internal productivity of the companion in the firm of her partner and her external productivity in the labor market are distinguished. Although both will be determined by the general human capital of the actor, they are not identical.[6] Consequently the first hypothesis (H_1) predicts that ceteris paribus *life's companions who are able to earn high incomes in the outside labor market work (a) less likely and/or (b) fewer hours inside the firm of the self-employed.* On the other hand, *companions work (a) less likely and/or (b) fewer hours inside the firm of the self-employed if they have a high internal productivity* (H_2).

Whether the manpower of the companion is to be employed in the entrepreneur's business or in the external labor market, therefore strongly depends on the extent and the nature of the companion's acquired human capital. Without additional assumptions this must also be true for life's companions managing the common household. With respect to Becker's theory of comparative advantages, one person at the most will employ time in both the market and the household (Becker 1981: 17). Due to the specific knowledge of the entrepreneur, he only works in his own business. Hence the companion either has to split up her efforts between the business and the household or will only specialize in household labor.

However, this microeconomic argumentation is based on the assumption that a perfect labor market exists. In such a perfect labor market, there is neither unemployment nor a necessity to accept a job which does not meet one's qualifications. Such an environment implies that an actor would get a job which is rewarded on the basis of her or his individual productivity. Obviously, labor markets empirically are not perfect in this sense. Due to this fact, it is necessary to consider the opportunity structure the actors are confronted with. Only if companions with a high external productivity have a chance to get a job which meets their requirements, we will be able to

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[6] Consider e.g. a surgeon who can realize a high income in a hospital due to her special occupational training while her abilities will have no relevant impact on her relatively low productivity in the firm of a handicrafts person.

observe the correlations stated by hypothesis H_1. However, it can be argued that empirically labor markets are not perfect: First, imperfect mobility makes it sometimes hard to find a job which is rewarded high enough. Second, due to the fact that the companions are most often responsible for the common household, there is a need for part-time jobs with high flexibility. However, such a kind of job is difficult to find. Taken together, the individual productivity will only have an effect on co-working if the actors have the opportunity to find an adequate job. Unfortunately, it will not be possible to test this assumption with the data used in this paper. What can be done is to examine the effect of *an external job - full or part-time - which is supposed to reduce not only the probability of co-working but the extent of collaboration as well (H_3).*

Although individual economic motives seem to be a powerful tool for analyzing labor market processes, they are not always the most important determinants for the decision which job to take. It is argued here that there are two other crucial factors which determine co-working. The first one results from the organizational setting in which the match between the self-employed person and his life's companion is embedded in. As it will be argued in the next section, the existence of trust-problems in the firm of the self-employed will also influence the decision for co-working. The second determinant - which will be discussed in the last section of this chapter - is based on the well-known fact that labor force participation is strongly influenced by the family situation of the actors.

2.2   Problems of Monitoring and Co-Working

As outlined in the first section, the self-employed person is usually confronted with a so-called principal-agent situation; his employees are working as agents in his firm. In this relationship, "one individual has the responsibility for taking decisions supposedly in the interests of one or more others, in return for some kind of payment" (Rees 1985: 3). The interaction structure of all principal-agent-relations involves basic problems of cooperation or trust (Pratt and Zeckhauser 1985). Most of these problems arise when the principal is not able to observe and supervise the actions of an agent completely. This is a basic problem of employment relationships and is emphasized in the so-called shirking literature: According to this approach, "each worker undoubtedly has some maximum level of productivity that he can bring to the workplace, but depending on motivation, he can also provide his employer any productivity between his maximum and nothing" (Thurow 1983: 201). Shirking refers to the case that the employee provides a productivity below the one that had been implicitly agreed upon at the beginning of the employment relationship. Employees generally are interested in shirking since they can thereby reduce their working efforts and possibly can gain leisure time. Employers are hardly ever able to identify this shirking ex post without doubt. The more difficult the ex post monitoring of an employee or the measurement of his output is, the bigger is the scope of the employee and the more difficult it is to overcome this clash of interests between principal and agent (see

e.g. Arrow 1985, Miller 1992). Alchian and Demsetz (1972) even argued that the existence of the capitalist entrepreneur (and thus of the firm too) can be explained by this sort of argumentation. The main characteristic of an entrepreneur is to monitor the members of a production team in order to solve cooperation problems and to avoid shirking of group members. However, because team members have to be monitored while doing their job, employers are rarely able to supervise their employees completely. Especially if the work tasks or the firm itself become more complex they have to rely on additional mechanisms like supervising managers or incentive pay.

Looking at the collaboration of the companion from this point of view, an important advantage of such an assignment becomes obvious (see especially Pollack 1985). Since both partners have considerable interdependencies in their benefits in the household (e.g., common interests or altruism), the agent's incentive for shirking is small. Loafing in the entrepreneur's business results in smaller returns, with the surplus ideally being identical with the common household income. In addition, a relationship of trust already exists in the private relationship between the life's companions that does not need to be implemented under costs and with the help of third parties. As a matter of principle, the collaboration in the common business results in advantages compared to a pure employer-employee-relation in two ways: First, the life's companion can be assigned for special tasks, for example, in situations where a lot of cash is transferred and an employee cannot be monitored, assignment of the companion is beneficial. Second, the companion can be assigned for monitoring other employees, for example in situations when the self-employed person is on the move. These arguments lead to the following hypothesis (H_4): *The more problems concerning monitoring and trustworthiness of employees exists in the family business, the more likely/ the more hours the companion should work inside the firm.* Hence the decision for co-working will be determined not alone by the human capital of the companion but also by the social capital: as Coleman pointed out, obligations which are created by trustworthiness of interaction partners can be interpreted as one source of social capital (Coleman 1990: 306). In this sense, the multiplex character of the relationship allows for the transformation of social capital into economic capital. But this only holds true if there is a stable match between the self-employed and his companion. In the next chapter, we will focus on this problem of creating obligations and expectations in a long-term relationship.

2.3 The Problem of Specific Investments and the Private Embeddedness of the Match

The match between the self-employed person and his companion is certainly not only embedded in the organizational structure of the business but also in a private structure. This structure includes partnership arrangements, family characteristics and household structure. As we will see in this section, this private embeddedness can lead to new trust problems on the one hand but may also help to solve these kinds of problems on the other hand.

Co-working in the partner's business can solve monitoring problems, but new questions especially for the collaborating partner also may arise. This becomes obvious when the collaborating partner has educational qualifications that cannot be used in the common business. The companion's investments in her occupational training are lost and the acquired knowledge becomes obsolete quickly and cannot be used anymore in the future. Besides, other formal and informal qualifications and abilities have to be acquired for the new job in the entrepreneur's business. Again, this qualification is connected to additional costs. Because every employment relies on informal knowledge concerning the firm, the internal procedures, and information channels (Williamson, Wachter and Harris 1975), collaborating will always lead to a certain amount of such specific investments. Moreover, there are opportunity costs from resigning one's old occupation which could be interpreted as another form of specific investment: The companion becomes dependent on the income and the business of her partner. Based on this kind of human capital argumentation, *hypothesis (H_5) can be derived: The higher the sunk costs due to former, not usable occupational investments are the lower the probability of co-working will be.* However, such sunk costs are not supposed to affect the extent of co-working in the case that a companion decided to work in the partner's business.

The depreciation of the old investments in education and the new investments in occupational training thus can be viewed as specific investments in the private relationship of the partners. They are lost as soon as this relationship and, with it, the collaboration in the common business are terminated. So a new problem of trust arises: Though the collaboration of the companion would be economically efficient, it will only be realized when the investing actor can trust in a stable private relationship in the future. One possibility to solve this problem is to use a contract which contains commitments to stay within the match. However, such a contract is only possible if there is an 'institutional embeddedness' (see Raub and Weesie 1993: 24ff) of the match. In the case considered in this paper, the private as well as the commercial partnership are embedded in an institutional framework which includes legal norms and the possibility of enforcing those as well as contracts in courts. Concerning the relationship between the self-employed person and his companion, the institutional embeddedness mainly provides possibilities for formulating explicit or implicit contractual agreements. As Raub and Weesie point out, the "classical contract form is *marriage*" (Raub and Weesie 1993: 37) which provides commitments for the contract partners not to terminate their match too easily. Moreover, with a marriage contract, the self-employed is committed to provide for his companion if she does not earn her own income. In this sense, marriage contracts are used as commitments concerning basic business-related investments. Due to these commitments, the matching partners can make use of the multiplex character of their match which leads to *hypothesis (H_6): Married companions will show a higher probability and a higher extend of co-working than unmarried companions*.

Contractual agreements are not the only commitments for stabilizing the private partnership. There are also some other factors which increase the cost of termination for the actors like

common property or extensive private networks shared with the partner. In general, such specific investments in the private partnership increase the longer this relationship lasts. *Hence it is hypothesized that the longer the duration of the private partnership is, the higher the probability as well as the extend of co-working will be (H_7).* Beside these general commitments, companions of self-employed have an additional opportunity to stabilize the partnership by investing in the firm of the partner. A joint ownership of business will render life after a divorce more difficult for both sides, moreover it is a financial safeguard for the partner who quits working in the firm. Consequently it can be expected that (H_8) *a financial investment in the firm will lead to a higher probability as well as a higher extend of co-working by the companion.* Finally, commitments do not only result from the private partnership alone. A very important mechanism is the social control other family members can carry out. E.g. if a separation from a collaborating partner is interpreted by other family members as dishonest and thus opportunistic behavior, they can sanction the entrepreneur by withdrawing support for his business or the household. Hence the social embeddedness in family network fosters the emergence and the assertion of norms and can thus be viewed as social capital which enables cooperative behavior (Coleman 1990). Consequently, the more an entrepreneur depends on the help of other family members - whether from his family or from his companion's - the stronger possible sanctions will be. A companion will more easily accept the dependence resulting from co-working if a family network restricting opportunistic behavior of the entrepreneur exitsts. Of course, this disciplining effect will also work the other way round, that is for possible opportunistic behavior of the companion. Based on the general concepts of social embeddedness and social capital, hypotheses H_9 can be derived: *If other family members collaborate in the business of the entrepreneur, there will be a higher probability as well as a higher extent of co-working.*

Concerning the family situation, especially the existence of children can be interpreted as a commitment (Becker 1981): It is well-known that specifically young children stabilize partnerships (e.g. Waite and Lillard 1991, Cherlin 1992). Moreover, the family business provides an opportunity for flexible working hours which allows to combine child care with a job. Hence it could be hypothesized that the existence of children increases the chance and the extend for co-working. However, concerning the effect of children on co-working an opposite effect exists as well. Usually, the self-employed partner will specialize completely in his business and will do even less household labor than employed husbands (see Abraham 2001). Consequently, the companion will take care of the children and the household. As it can generally be said for all women, motherhood reduces the general tendency for labor market participation. Whether the negative or positive effect of children on co-working will be dominant cannot be decided theoretically. However, the effect of household labor on co-working should be predictable. The more household labor a companion will have to do, the less time for another job will be left. Consequently, it can be expected that (H_{10}) *the more household and family tasks a companion provides the lower the probability as well as the extend of co-working will be.*

3   Data and Variables

3.1   Data: Regional Setting and Occupations

Due to the limited availability of empirical data about the research topic, our study has an explorative character. Especially the necessity to acquire knowledge about the specific occupational settings of self-employed in all possible occupations prevents us from aiming at a representative design. Instead, five distinct occupations of the self-employed were chosen, each with special characteristics: pharmacists covering the freelance professions, opticians and painters or varnishers covering craftsmen, and owners of travel agencies and leaseholders of petrol stations covering commerce. This selection provides a data set which includes information on the different educational and financial backgrounds of the self-employed and their partners in the sample. Furthermore an "area study design"[7] is used by restricting the survey population to two German regions around the middle sized cities Nuremberg and Leipzig. Because Nuremberg is located in the western part of Germany and Leipzig in the eastern part, this design allows also to examine differences due to the German reunion. In the following the Nuremberg Sample is called the „West" and Leipzig data the „East" sample.[8]

TABLE 1: Sample characteristics

OCCUPATION	mailed questionnaires			responses			net response rate	respondents with companion	male respondents with female companion
	N			N			%	N	N
	West	*East*	All	*West*	*East*	All		All	
opticians	*169*	*47*	216	*55*	*14*	69	38,4	63	50
travel agents	*422*	*---*	422	*41*	*---*	41	9,7	33	23
painters /varnishers	*686*	*260*	946	*108*	*57*	165	17,4	160	156
pharmacists	*443*	*---*	443	*145*	*---*	145	32,7	122	89
leaseholders of petrol stations	*297*	*---*	297	*35*	*---*	35	11,8	33	28
unknown	*---*	*---*	*---*	*26*	*18*	44	*---*	29	24
Total	*2017*	*307*	2324	*410*	*89*	499	25,3	440	370

Of the 2.324 self-administered questionnaires sent out, 499 were returned. This is a net response rate of 25.3%. Since not all of the respondents were living in a marriage or a cohabitation

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[7] See for example Thomas & Thomas (1928) or Lambert (1990).

[8] For more details on this project see Abraham et al. (1997) or Abraham (2000).

arrangement, our analysis is based on 440 cases meeting these criteria, with 370 entrepreneurs being men (see table 1). In our questionnaire we asked for information on the private relationship of the partners, financial aspects like the turnover of the business, and the arrangements of co-working. The questionnaire consisted of 14 pages with 49 questions. After a short characterization of the firm, the second and third part dealt with the private relationship between the entrepreneur and his companion, the household, and the family background. The fourth part focused on co-working including the number of hours, legal arrangements, and special investments. The questionnaire ended with some questions highlighting the companion's employment activities outside the firm of the self-employed.

Although this design makes it possible to combine explorative and quantitative research techniques, a serious methodological problem arises. In our theory, we focus on the match between the entrepreneur and his companion as the unit of analysis. In practice, we directed the questionnaire to only one side of this match, the entrepreneur. Therefore, we have to assume that the self-employed in our sample are able to give valid information about all interesting characteristics of the match. However, the low number of unanswered questions concerning the companion can be interpreted as a first hint of validity.

3.2   Operationalization and Variables

For multivariate analysis, three types of variables are available: information on the family situation and the household, variables on co-working of the female companion, and the characteristics of the male entrepreneur and the firm. Table 2 displays the descriptive statistics for the variables used in this analysis.

As *dependent variable* the information on co-working of the companion will be used. Because it can be assumed, that the decision process of the companion includes at least two steps - the decision for co-working and the decision on the extent of collaboration - the multivariate analysis will focus on two different types of information. First, the probability of co-working will be estimated based on a logistic regression model. With about 71% of the companions currently or previously co-working, our research project evidently focuses on a key issue of entrepreneurs and their companions.[9] Second, the extent of co-working will be estimated by two regression models. In this case the dependent variable is operationalized by the number of hours per week the companion works in the firm of the entrepreneur. Among those collaborating, 5.4% work between one and nine hours per week, 11.9% work between 10 and 19 hours, 23.5 work between 20 and 39 hours, and nearly one fifth of the partners (18.4%) work 40 hours or more in the business of the self-employed. The mean duration of co-working is 20.5 hours per week.

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[9] The few other studies on this topic report somewhat lower but still considerable high proportions of co-working companions: 66% in another German study (Brüderl, Preisendörfer and Ziegler 1996: 132), 39% for the Netherlands (Meijer 1985) and about 30 to 40% for France (Laferrère and McEntee 1999).

There is no significant difference among the five occupations selected, except for the leaseholders of petrol stations; they show a mean of 32 hours per week.[10]

TABLE 2: *Descriptive Statistics for Variables Used in Multivariate Analysis*

Variable	Valid Cases	Mean	SD
Information on family and household situation			
married (0=no, 1=yes)	369	0,90	0,30
existence of partnership contract (0=no, 1=yes)	366	0,26	0,44
duration of private relationship (0 less than 19 years, 1=more)	351	0,55	0,50
existence of children (0=no, 1=yes)	356	0,66	0,48
indicator for extend of household labor (0=low, 1=high)	344	0,91	0,29
Information on co-working of female companions			
occupational sunk costs (0=no, 1=yes)	357	0,33	0,47
Internal productivity: wage per hour (German Marks)	287	28,65	9,99
External productivity: wage per month (German Marks)	331	3388	1226
co-working of companion (0=no, 1=yes)	309	0,71	0,46
hours of co-working per week	309	20,52	19,08
external job of the companion (0=no, 1=yes)	356	0,31	0,46
characteristics of the entrepreneur and the firm			
entrepreneur has high education (0=no, 1=yes)	370	0,27	0,44
Age of male entrepreneur (years)	363	47,00	10,04
Location of business in Leipzig (East sample) (0=no, 1=yes)	370	0,20	0,40
female companion holds shares in the firm (0=no, 1=yes)	346	0,14	0,35
Firm size (number of employees)	308	6,7	8,4
Indicator for trust problems in the firm	370	1,16	0,75
co-working of other family members (0=no, 1=yes)	361	0,30	0,46
Type of business			
Travel agency	370	0,06	0,24
Pharmacy	370	0,24	0,43
Petrol station	370	0,08	0,26
Painter/ varnisher	370	0,42	0,49
Optician	370	0,14	0,34

The *family and household situation* is characterized by the existence of children (66% had at least one), the duration of the partnership (=20 years, standard deviation 11.7). For analysis, the latter variable was dichotomized in partnerships which lasted less than 19 years and those that lasted longer. The extent of household labor provided by the companion was measured by

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[10] Considering the extremely long business hours of petrol stations, this large mean seems to be quite plausible.

a Likert scale with four categories. On the basis of this scale, the respondent should estimate to which extent the companion provides household tasks. For regression analysis this scale was dichotomized: about 90% reported that their female companions do nearly all of the household labor. For formal commitments resulting from the private relationship of the partners, we focused on two variables: marriage and formal partnership contracts. As table 2 shows, 90% of all respondents are married to their respective partners. However, only 26% have a formal agreement like a marriage or private partnership contract which modifies the legal default.[11] Within our sample, only the owners of travel agencies differ in respect to this general picture. They are married less often considerably (51%) and they rarely have a private partnership contract with their companions.

Beside the variable on co-working some more information about *the work situation of the companion* was gathered. Sunk costs due to old investments in occupational training were measured by regarding the question whether the companion started with such a training before the relationship with the self-employed partner began. One third of the companions started with an occupation which was not compatible with the business. The internal productivity of the partner was operationalized by the question: "If you had to replace your life's companion in your business with a third person, what would the monthly cost of such a replacement be?". The internal productivity per hour then was computed by dividing these costs by the hours worked. For all companions who did not collaborate, this variable was estimated on the basis of regressing the information of some significant factors like education, occupation or age. The mean productivity per hour is about 28 German Marks (DM) with a standard deviation of 10 DM. There is hardly any difference among the five occupations: The lowest mean productivity is shown by companions of painters with 27.1 DM, whereas companions in pharmacies show the highest mean with 30.9 DM. For the external productivity the entrepreneurs were asked to rate their companion's income realized through external employment, 31% of all companions were employed externally. It is important to note that all possible combinations of the three options - household labor, internal co-working, external job - occurred. Again, we estimated the hypothetical external income of those partners who were not employed outside the family business via regression. Companions in the sample yield an average wage of about 3400 DM per month. Due to the higher education of pharmacists' companions, this group shows a significantly higher external productivity as the rest of our sample.

As a third type of variables, the questionnaire included a variety of *information on the entrepreneur and his business*. Apart from the standard variables - like age, education, firm size and type of business - the project focused especially on the relationship between family and business.

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[11] This legal default in case of marriage is the community of accrued gain. Other options are the explicit settling of the community of property and the explicit settling of the separation of property, which is the legal default for partners not married. Due to considerable costs for a notary in case of a private contract, most partners choose the legal default. However, if spouses settle on a private marriage contract in our sample, they choose the community of property far more often than the separation of property.

30% of the entrepreneurs employed members of their own family or those of the companion's. Somewhat surprising is the fact, that despite high rates of co-working only 14% of the companions show a financial partnership concerning the firm of their spouse or cohabitation partner. Finally, problems of trust and monitoring concerning employees in the firm were measured by an indicator comprising four Likert-type scales. Based on a scale of four categories the respondent was asked to rate the necessity for permanent monitoring of employees, the importance of personal contacts with clients, the extent of payment with cash and the difficulty to monitor his workers. For the trust indicator, the most affirmative category was counted. On the resulting scale from 0 to 4, the sample shows a mean of 1.16.

4   Empirical Results

In this chapter, empirical evidence concerning the determinants of co-working of the companion is presented. First, it is analyzed whether the companion is co-working or not. In a second step, the extent of co-working, that is the hours provided, is analyzed. As previous analysis has shown, there is a strong effect of gender concerning these dependent variables (Abraham and Funk 2000). Due to the small number of male companions in the sample, the following analysis will be restricted to the female companions.

4.1 The Probability of Co-Working

For the question which determinants have effects on the decision whether to work inside the firm or not, a logistic regression model was used. The dependent variable was coded as one if the companion showed previously or currently co-working in the firm of her mate; otherwise, the variable was zero. Theoretically, for the decision where to invest one's labor three choices are available: the companion can work for an external employer, inside the family business or in the household. However, empirically these three options are not distinct: only about 75% work either for an external employer or in the family business, and only about 10% concentrate their efforts exclusively on the household. That means that the majority of female companions are doing household as well as occupational labor. Due to this data and the small sample size, an external job as well as household labor are used as dependent variables in logistic regression model. Model 1 in Table 3 shows the results of multiple logistic regressions by reporting the odd ratios (exp b). A coefficient smaller than 1 reveals a negative, one larger than 1 a positive correlation.

TABLE 3: Results of mulitvariate analysis

	predicted correlation	Model 1 odd ratios of logistic regression	Model 2 OLS-regression	Model 3 Tobit-Regression
Family and household situation				
married	+	11,74 *	12,17 **	20,50 **
partnership contract		0,34	-2,09	-5,85 +
private relationship>19 years	+	4,35 *	8,27 **	6,87 *
existence of children		2,39	1,14	2,38
household labor by companion	-	0,64	-9,76 *	-11,08 *
household labor by domestic service		1,78	-1,27	-1,17
Work situation of the companion				
occupational sunk costs	-	5,20 *	2,19	2,15
Internal productivity	+	0,97	-0,40 **	-0,36 **
External productivity	-	1.00	0,00	0,00
external job of companion	-	0,08 **	-15,13 **	-14,88 **
Characteristics of the entrepreneur and the firm				
Age of entrepreneur		0,91 *	-0,29 *	-0,44 *
entrepreneur has high education		3,01 +	4,11	2,06
Location of business in Leipzig		0,66	2,30	-5,45
companion holds shares	+	12,47 *	2,70	7,25 +
Firm size		1,04	0,30 *	0,40 *
Trust problems in the firm	+	2,83 *	3,93 **	5,66 **
co-working of other family members		4,57 *	6,76 **	8,21 **
Type of business				
Travel agency		2,99	9,49 *	12,80 *
Pharmacy		1,80	5,68 +	9,06 *
Petrol station		----	12,08 **	16,27 **
Optician		0,82	-0,62	1,82
Constant		----	31,51 **	23,21 *
N		164	236	173[d]
model fit		0.40[a] **	0.37[b] **	0.09[c] **

Annotation: [a] Cox & Snell R^2 [b] adjusted R^2, [c] Pseudo R^2. Levels of significance: ** < 0,01, * < 0,05, + <0,1. Reference group for the occupations are painters/varnishers. [d] 44 left-censored cases with no co-working

Concerning the *family and household situation*, there are two significant results corresponding with the previous theoretical argumentation. First, in accordance with hypothesis H_6, married companions have a significant higher chance to work inside the family business: compared to unmarried companions, the relative probability (odds) of co-working increases for married ones by the factor 11,74. A formal partnership contract has no effect on the decision of co-working.

Second, hypothesis H_7 can be confirmed: If the couple has been living together for 20 years or more the odds of co-working increase significantly by the factor 4,35. Although the extent of household labor shows the expected negative effect on co-working the coefficient is not significant and the hypothesis H_{10} cannot be confirmed in this sample. No significant effects could be found for the assignment of domestic servants and the existence of children. Note that this holds true as well concerning the age of children, because very young kids do not influence the decision for co-working significantly too. This may be due to high flexibility in family businesses: work hours can be temporarily reduced or children may be supervised during working hours.

Somewhat surprising are the results on *economic determinants* which describe the work situation of the companion. Here hypotheses were derived from labor market and human capital theory. For this argumentation, it was assumed that the companion will try to maximize the economic revenues of her work effort. However, this does not seem to be the case: Neither the internal (H_2) nor the external productivity (H_3) show a correlation with co-working at all. Also surprising are the effects of occupational sunk costs (H_5). If the life's companion started with a non-compatible occupational training before her relationship with the self-employed began, the chance is 5.2 times *higher* that she works inside the family business. These findings hint that the opportunity structure concerning the labor market is more important than the productivity characteristics of the companions. Women with a specific occupational training, especially in the field of handicrafts, often get only low paid jobs in the labor market. Hence, those companions have an incentive to work inside the family business due to bad labor market opportunities. Within this analysis companions with such a specific occupational training are compared with those who have no training at all or a general economic occupational training. The latter have good chances to find attractive jobs on the external labor market, hence their probability of co-working is lower than those with specific occupational training. Women without any occupational training often have no strong wish for occupational work, instead they will specialize in household labor. Taken together, opportunity structures concerning the labor market and specialization in household labor are more important for the decision to co-work than sunk costs due to occupational training which is non-compatibel to the family business. Thus the hypotheses on productivity and occupational sunk costs have to be rejected. Only the - somewhat trivial - correlation, that a job with another employer decreases the probability of internal co-working, can be observed in this data set. Hence, the decision for co-working does not seem to be determined by individual income maximization.

This leads to other factors, especially to the characteristics of the family business. On the one hand, more problems of trust in the firm lead to a higher probability of collaboration (H_4). This result indicates that the companions relinquish on individual income in order to safeguard the success of the family business. On the other hand, the business framework is also used to solve problems of trust between the partners themselves: As predicted, a financial partnership corre-

lates with a high probability of co-working (H_8). Similarly, the positive effect of other family members involved in the business is in accordance with prediction H_9. Although this may also be due to the necessity to employ cheap labor, controlling firm size and type of business makes this interpretation less plausible. Therefore, this correlation should at least partially be based on the effect developed theoretically above: a strong social embeddedness of financial activities can be a safeguard against individual opportunism concerning the private relationship of the couple.

Of all control variables included only the age of the firm owner showed a significant effect: older entrepreneurs employ their wives less likely than younger ones. This should be a partial effect of early retirement of older women, moreover this results reflects the higher labor participation of women in younger cohorts. No significant effects could be found for the regional sample, the firm size and the dummies for occupation of the self-employed.

4.2 The Extent of Co-Working

Whereas the last section dealt with the decision for co-working, this chapter focuses on the extent of collaboration. First, most of the hypotheses can be tested for the extent of co-working too. Moreover, there are some hypotheses which only refer to the amount of working hours. Second, there could be interesting implications for general labor market research. In the regular labor market, employees usually are restricted concerning the flexibility of labor supply. This is a problem especially for women with higher occupational qualifications who often are highly interested in part time jobs. Companions of self-employed persons have the possibility to balance their family and labor tasks by providing only few hours. With the sample used for this analysis it is possible to look for determinants of labor supply without the restriction of the regular labor market.

The analysis of labor supply yields in general a methodological problem well known in labor market analysis (see e.g. Franz 1985). If the analysis is restricted only to those respondents who work at all, the estimation of the actual amount of supplied working hours may be distorted. The same is true if those who do not participate in the labor market are treated as if they had a "zero hour" supply (Berk 1983, Breen 1996). In both cases the real supply can not be observed e.g. because actors would like to work only five hours a week or only for a higher wage but could not find a job. For this problem of "sample selection" several models exist which include a correction mechanism for the expected bias resulting from the censored data.[12] For this paper, the classical model proposed by Tobin for the analysis of censored data like labor supply is used (Tobin 1958). Basically, the model comprises two steps: First, the probability of labor market participation is estimated, usually by using a Probit Model. Second, the amount of labor hours is estimated by an OLS-regression which includes a correction parameter resulting from the Probit model. Intuitively spoken this parameter controls for the decision to work at all. Although this procedure allows to reduce problems of sample selection at least, there is a severe drawback. In case of small sample sizes the model, which is based on Maximum-Liklihood estimation, yields not necessarily more efficient results than simple OLS-models.

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[12]These are especially Tobit- and Heckman regression models, for an overview see Berk and Ray (1982); Berk (1983); Winship and Mare (1993) or Breen (1996).

Moreover, there may be a problem of multicollinearity due to the fact that the set of variables in the first and the second step are more or less identical (e.g. Breen 1996: 64-66). Because of these problems two models will be presented in this paper: First an ordinary OLS-regression which includes the companions not co-working as "zero-hour" cases and, second, a Tobit regression model which includes these companions as left censored cases. Hypotheses will be classified as confirmed only if both models yield significant results. Model 2 in Table 3 displays the results of the OLS-regression, model 3 those of the Tobit procedure. In both cases the unstandardized coefficients are shown.

As can be seen easily in table 3, the results of all three models - the OLS- and the Tobit model as well as logistic regression - match to a high degree. Again, marriage shows the expected correlation: In the OLS model, married companions work about 12 hours more per week in the family business than unmarried ones; within the tobit analysis these are even 20.5 hours. These results indicate that there is a considerable shift of labor from the external labor market into the companion's business after marriage. A private relationship of more than 40 years yields 8 respectively 7 hours more for co-working. Contrary to the decision of collaboration, the share of household tasks influences the extent of co-working. As predicted by hypothesis H_{10} more household labor done by the life's companion reduces the extent of labor provided for the family business. Again, a partnership contract, children or domestic servants have no effect on co-working.

For the extent of co-working the human capital and productivity determinants also show paradox results. In contrast to these theoretical arguments, the *external productivity* (H_1)of the companion has no effect on the hours of co-working. Furthermore, a rising *internal productivity* (H_2)of the companion decreases her hours of co-working. This may be explained if we assume that companions will specialize in household labor as far as possible (Becker 1991). Companions will only collaborate in the firm if there is no affordable substitute for their labor, e.g. because of internal trust problems. If the amount of labor the companion has to supply for the firm is fixed, those with an high internal productivity are able to provide the same labor in less time and can spend more time in the household. However, this kind of ad-hoc argument is not really satisfying because it implies that the labor in the household has always a higher value than labor for the firm. This negative effect of internal productivity is a puzzle still to be solved in any case. Occupational sunk costs do not influence the extent of co-working. Taken together, the individual economic determinants do not play a central role for the decision, how many hours to work in the business of the self-employed partner.

The last group of variables, that is the characteristics of the entrepreneur and his firm, by and large shows the results already discussed for the decision of co-working. Intra-firm trust problems (H_4) as well as an involvement of other family members (H_9) increase the number of hours worked in the family business. In contrary to the effects found in the first model, an investment of the companion does not lead to an higher extent of co-working (H_8). Although firm size does not contribute to the explanation of co-working itself, it has effects on the extent of collabora-

tion. Obviously, there are more possibilities in larger firms as well as a higher need for co-working of the companion. There is not always enough to do in a small business and the central task of monitoring employees is less important. Finally, occupations which require to run a shop with regular opening hours show a higher extent of co-working than painters and varnishers.

5   Conclusion

Taken together, our results can serve as evidence for the importance of the multiplex character of matches between self-employed and their companions. The theoretical framework, which highlights problems of trust and the necessity of governance mechanisms for this partnership, finds support in the data presented. The social capital provided by the companion cannot be transferred into economic benefits without an appropriate extent of trust concerning the stability of the private relationship. Moreover it becomes evident that, in contrast to our presumptions in the beginning, the allocation of the companion's manpower is not determined mainly by individual pecuniary motives. Economic determinants like the productivity of the companion or sunk costs by investments in human capital show effects which seem to be inconsistent with labor market and human capital theories.

Instead there are two crucial factors which help to understand the decision for collaboration of the companions. First, the family and the household situation have strong effects on internal co-working. A long-lasting private partnership and marriage enhance involvement of the companion in the firm by providing trust and foster specific investments by the actors. Moreover, the flexibility to work for a family business reduces future conflicts as can be seen in the case of children: Whereas motherhood usually reduces women's activities in the labor market, children show no effect on the extent of internal co-working. However, there is still a trade-off between household labor and co-working which is obviously not softened by assigning paid domestic service in these households. Second, the characteristics of the entrepreneur's business have considerable effects on the decision of co-working. Strong support can be found for the hypothesis that co-working increases when intra-firm problems of trust become larger. Many monitoring problems in the firm of the self-employed enhance the probability as well as the extent of co-working.

However, these findings are not representative and rely on an explorative research design. This implies some restrictions concerning the measurement, the available variables as well as the generalization of the results. Generally speaking, a broader population as well as a larger sample combined with even more effort to raise the net response rate seem necessary to provide a profound basis for more elaborate analyses. Other regional settings and other occupations of the self-employed should also contribute to the stabilization of these explorative results. Further research is needed indeed.

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Nr. 10 (7/00) Martin Abraham & Per Kropp: *Die Bedeutung sozialer Einbettung für Konsumentscheidungen privater Akteure*. Bericht an die Deutsche Forschungsgemeinschaft.

Nr. 11(8/00) Olaf Struck & Julia Simonson: *Stabilität und De-Stabilität am betrieblichen Arbeitsmarkt: Eine Untersuch-ung zur betrieblichen Übergangspolitik in west- und ostdeutschen Unternehmen*

Nr. 12(8/00) Jan Skrobanek: *Soziale Identifikationstypen? - Anmerkungen zur ganzheitlichen Erfassung der Typik von "Identifikation".*

Nr. 13(9/00) Sonja Haug: *Soziales Kapital, Migrationsentscheidungen und Kettenmigrationsprozesse. Das Beispiel der italienischen Migranten in Deutschland.*

Nr. 14(11/00)   Roger Berger, Per Kropp & Thomas Voss: *Das Management des EDV-Einkaufs 1999. Codebook.*

Nr. 15(12/00)   Olaf Struck: *Continuity and Change.Coping strategies in a time of social change.*

Nr. 16(12/00)   Olaf Struck: *Gatekeeping zwischen Individuum, Organisation und Institution. Zur Bedeutung und Analyse von Gatekeeping am Beipsiel von Übergängen im Lebensverlauf.*

Nr. 17(12/00)   Martin Abraham & Per Kropp: Die institutionelle und soziale Einbettung von Suchprozessen für wirt-schaftliche Transaktionen: Das Beispiel der Wohnungssuche. S. 415-431 in *Normen und Institutionen: Entstehung und Wirkungen*, herausgegeben von Regina Metze, Kurt Mühler, und Karl-Dieter Opp. Leipzig: Leipziger Universitätsverlag 2000.

Nr. 18(05/01)   Georg Vobruba: *Die offene Armutsfalle. Lebensbewältigung an der Schnittstelle von Arbeitsmarkt und Sozialstaat.*

Nr. 19(05/01)   Per Kropp, Christian Seyde & Thomas Voss. *Das Management des EDV-Einkaufs - Soziale Einbettung und Gestaltung wirtschaftlicher Transaktionen. Eine empirische Untersuchung am Beispiel der Be-schaffung informationstechnischer Leistungen und Produkte durch Klein- und Mittelbetriebe. Abschluss-bericht an die Deutsche Forschungsgemeinschaft.*

Nr. 20 (08/01) *Tätigkeitsbericht des Instituts für Soziologie 1999/2000.*

Nr. 21 (08/01) Olaf Struck (Hrsg.): *Berufliche Stabilitäts- und Flexibilitätsorientierungen in Ost-deutschland. Ergebnisse eines Forschungspraktikums.*

Nr. 22 (11/01) Per Kropp: *"Mit Arbeit - ohne Arbeit" Erwerbsverläufe seit der Wende. Codebook.*

Nr. 23 (11/01) Per Kropp & Kurt Mühler: *"Mit Arbeit - ohne Arbeit" Erwerbsverläufe seit der Wende. Abschlussbericht an die Deutsche Forschungsgemeinschaft.*

Nr. 24 (11/01) Regina Metze & Jürgen Schroeckh: *Raumbezogene Identifikation in Low- und High-Cost-Situationen. Zur Systematisierung von Entscheidungskontexten.*

Nr. 25 (11/01) Regina Metze & Jürgen Schroeckh: *Kooperationsregeln als Kollektivgut? - Versuch einer kulturalisti-schen Erklärung regionaler Kooperationsstrukturen.*

Nr. 26 (04/02) Sonja Haug, Ulf Liebe & Per Kropp: *Absolvent 2000. Erhebungsbericht und Codebook einer Verbleibs-studie ehemaliger Studierender an der Fakultät für Sozialwissenschaften und Philosophie.*

Nr. 27 (04/02) Martin Abraham: *Die endogene Stabilisierung von Partnerschaften: Das Beispiel der Unternehmens-besitzer.*

Nr. 28 (05/02) Sylke Nissen: *Die Dialektik von Individualisierung und moderner Sozialpolitik: Wie der Sozialstaat die Menschen und die Menschen den Sozialstaat verändern.*

Nr. 29 (08/02) Georg Vobruba: *Freiheit und soziale Sicherheit. Autonomiegewinne der Leute im Wohlfahrtsstaat.*

Nr. 30 (08/02) Georg Vobruba: *Die sozialpolitische Selbstermöglichung von Politik.*

Nr. 31 (11/02) Beer, Manuela, Ulf Liebe, Sonja Haug und Per Kropp: *Ego-zentrierte soziale Netzwerke beim Berufsein-stieg. Eine Analyse der Homophilie, Homogenität und Netzwerkdichte ehemaliger Studierender an der Fakultät für Sozialwissenschaften und Philosophie in Leipzig.*

Nr. 32 (12/02) Haug, Sonja und Per Kropp: *Soziale Netzwerke und der Berufseinstieg von Akademikern. Eine Untersu-chung ehemaliger Studierender an der Fakultät für Sozialwissenschaften und Philosophie in Leipzig.*

Nr. 33 (01/03) Andreas Diekmann, Thomas Voss: *Social Norms and Reciprocity*