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AN EMPIRICAL STUDY OF REWARD AND INCENTIVE SYSTEMS IN GERMAN ENTREPRENEURIAL FIRMS

ABSTRACT

In this paper we present the results of a study analyzing the impact of an entrepreneurial company's initial organization on the structure of its reward and incentive systems, using data from entrepreneurial firms in Germany. The results suggest that the educational level of employees has the strongest impact on the application of different financial and nonfinancial rewards. Our findings also suggest that entrepreneurial companies in Germany rarely implement sophisticated financial reward systems.

JEL Classification: M12, M13.

Keywords: Entrepreneurship; Human Resources; Organization Structure; Rewards Systems.

1 INTRODUCTION

There is no doubt that human resource management is one of the most important functions for any company. Human resource management is especially important for entrepreneurial firms, which often start their businesses based on the competitive advantage of the intellectual capital of their employees. For such companies, building up the right management team and hiring the first employees is a very difficult, but crucial, task (Williamson, Cable, and Aldrich (2002)).

However, there is still a lack of research on the interface of entrepreneurship and human resource management (Heneman, Tansky, and Camp (2000)). In 2004 we reviewed articles in three of the major entrepreneurship journals (*Journal of Business Venturing*, *Entrepreneurship Theory/Practice*, and *Journal of Small Business Management*) and could not find any general empirical work on the area of human resource management in an entrepre-

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neural context. Older articles such as those by Hornsby and Kuratko (1990); Deshpande and Golhar (1994); and Wagar (1998) represent some of the most important research in the field, even though these researchers actually focus on small and medium-sized enterprises rather than on young entrepreneurial companies.

However, there has been some related work in analyzing reward and incentive systems in the organizational life-cycle stage. For example, Koberg, Uhlenbruck, and Sarason (1996) look at how reward and incentive systems foster innovation activities and find that stock incentive plans are implemented in later-stage rather than in early-stage companies. Their study is one of the very few to actually analyze young entrepreneurial firms that were less than five years old at the time of the study. However, most authors in the field examine human resource management practices in smaller companies, but do not analyze how those practices and structures evolve in the young firm. We argue that the special circumstances in the early phases of an organization's life-cycle should be dealt with explicitly in human resource and entrepreneurship research (Balkin and Gomez-Mejia (1987); Bamberger, Bacharach, and Dyer (1989); Koberg, Uhlenbruck, and Sarason (1996)).

Previous studies not only explicitly point out the lack of any kind of research on the interface between entrepreneurship and human resource management, but also criticize the general lack of empirical research on this topic. Surprisingly, there are no empirical studies by researchers in North America, despite the fact that there are established, reliable databases of entrepreneurial companies. Tausend, Katzauer, and Gruber (2006) conclude that this interface is of great significance for the academic study of entrepreneurship, but that there is a large gap in empirical research.

In this study we investigate entrepreneurial companies in Germany, where the few databases that are available differ in the quality of the data relevant to entrepreneurship research. With this study we believe that to some degree we address the gap in the literature discussed above.

The central research question in our paper is, what impact do characteristics of the firm, such as age and size and demographic characteristics of the employees, have on the structure of reward and incentive systems in entrepreneurial firms?

The paper is developed as follows. First, based on the relevant literature and previous research, we develop a set of hypotheses about factors influencing how reward and incentive systems are implemented in entrepreneurial firms. Second, we describe the data and the research methods applied in this paper. Third, we present and discuss the results of the hypothesis tests.

2 THEORETICAL FRAMEWORK

Building on the model of Rosenstiel (1975), we define reward and incentive systems broadly, including all monetary and nonmonetary rewards and incentives the organization provides. The first of five categories is the incentive provided by the work itself. Individual

items in this category are, for example, autonomy and growth through career development and the recognition of individual performance. The second category, called social incentives, includes incentives created by information distribution and communication with employees. Incentives provided by the internal organizational environment are the third nonfinancial incentive category in the Rosenstiel (1975) framework (size of the company, organizational structure, and leadership style). Financial rewards are divided into direct and indirect financial categories. For example, direct incentives are pay-for-performance systems. Indirect incentives include such things as free access to phone and internet at the office for private usage, recreational facilities such as cafeterias or exercise rooms, etc. According to Rosenstiel's framework, both formal incentives installed by the management team (e.g., pay-for-performance systems) and incentives arising by chance (e.g., helpfulness among employees) are part of a company's total reward and incentive systems. Also, this broad framework focuses on reward and incentive systems for all employees, not just for the top management team (Becker (1985); Hagen (1985); Gedenk (1994); Brandenburg (2001)). Recently, Höllmüller (2002) demonstrated the conceptual power of the Rosenstiel model, using it as a framework to study the motivational effect of incentives regarding the motivation to join the company.

Rosenstiel (1975) argues that organizations are essentially defined as a system of rewards and incentives, and that every single component and characteristic of the company has the potential to become an incentive to its employees. Rewards can be for work and achievements of the employees, such as a fixed base salary, variable income components, and employee stock ownership plans. According to Rosenstiel (1975), incentives can be any organizational attribute, such as an organization's culture, communication systems, interpersonal relationships, and the attractiveness of the location or the company's image. With these definitions of rewards and incentives, it becomes clear that reward and incentive systems exist from the inception of a company (Rosenstiel (1975); Hagen (1985)).

Rewards and incentives are also partly responsible for employee motivation, including the motivation to join the company, to stay with the company, and to perform for the company (March and Simon (1966); Rosenstiel (1975); Weinert (1998)). Human capital theory suggests that companies also must consider the exchange relationship between employer and employee. The decision to join an organization, to stay with it, and to perform in it, is based on the nature of exchange relationships (Balkin and Richebé (2004)). For a growing entrepreneurial company it is of enormous importance to find the right fit between the characteristics of the organizational structure and the employees from the very beginning of the firm to improve the chances of positive long-term development.

3 THEORETICAL DEVELOPMENT

One of the most important problems that new ventures face in the start-up phase is developing marketable products and building a customer base. Greiner (1972) emphasizes the problems of "creating both a product and a market ... [The entrepreneur's] physical and mental energies are absorbed entirely in making and selling a new product" (Greiner

(1972, 41 ff). Manstedten (1997); Bau and Dowling (2001) observe the same phenomenon in their studies of entrepreneurial companies in the German IT industry. Because of these pressures, in the start-up phase, managers often do not have sufficient time to develop sophisticated employee incentive systems. In the early stages of a new firm's development, developing complex incentive structures is a subordinate problem for the management team.

As a young firm grows, the likelihood that it will create a structured reward and incentive system increases. These reward and incentive systems can include purposely designed financial rewards, but also social incentives, which evolve as the company develops. The larger the company, the easier this process becomes, because it provides the management team with additional resources to build up reward and incentive systems. We argue that the other independent variables in our theoretical framework – age, educational level, and gender of the employees – can to some extent influence the development of reward and incentive systems, depending on the individual. Here, professional experience, educational level and gender-specific factors all play a part.

One of the basic assumptions underlying our study is that the majority of companies have some kind of business idea or business plan that formulates the basic requirements of the company at the start of business activity. These requirements lead to a certain start-up team, which can be described according to the variables below. From this initial organizational setting, a company develops with all the components of the reward and incentive system that will be in place later on.

3.1 FIRM AGE

Initially, most entrepreneurial firms do not have planning and control systems in place and have only a very simple organizational structure (Bamberger, Bacharach, and Dyer (1989); Churchill and Lewis (1983); Greiner (1972)). Kieser (1992) argues that companies in the early start-up phase are typically faced with the problems of recruiting qualified employees, defining efficient and clear job functions, and interacting with new employees. Koberg, Uhlenbruck, and Sarason (1996) argue that the phase of the organizational life-cycle also affects product innovation. With an emphasis on innovation representing one of the most important characteristics of entrepreneurial firms, the organizational life-cycle also directly influences the organizational structure of such firms. Koberg, Uhlenbruck, and Sarason (1996) argue that “start-ups may offer individuals fewer financial incentives in exchange for the opportunity to learn and share in the excitement and commitment associated with an entrepreneurial venture” (Koberg, Uhlenbruck, and Sarason (1996, 144)). Manstedten (1997) suggests that granting large financial incentives to employees at the beginning of a company's life cycle is not possible due to financial restrictions, and that new firms should focus more on providing non-material incentives. Thus, we argue that company age is positively related to the existence and sophistication of reward and incentive systems in entrepreneurial firms. We state this premise in the following hypothesis.

H1: *The older the entrepreneurial firm, the more complex and sophisticated is its reward and incentive system.*

3.2 FIRM SIZE

The growth of companies often leads to fundamental changes in the micro- and macro-structure of a company. Companies in the growth stage will often experience crises (i.e., delegation and leadership crises) that will force organizational changes (Greiner (1972); Kieser (1992)). These changes also affect social incentives and work incentive categories. As a result of increasing professionalism and development of all business operations, the importance of the incentives provided by the work itself will decrease.

It is important to note that an increase in the size of the workforce leads to an increase in the complexity of the human resource tasks. Drumm (2000) points out that those measures to individualize and increase flexibility lead to additional coordination requirements for the company. The number of financial incentives from which the employee can choose is typically larger in big companies (Hunsdiek and May-Strobl (1986)). At the same time, as firms grow, nonmonetary work incentive systems become less valued.

Growth also strongly influences financial incentives. In German companies, complex human resource management systems are typically only used in a few large companies (Backes-Gellner, Lazear, and Wolff (2001)). In their study of human resource management practices in small American firms Hornsby and Kuratko (1990) shows that large firms use many more financial incentives than do smaller firms. They find that indirect financial incentives, such as offering life insurance, unemployment insurance, and retirement plans, increased as the number of employees increased. Wagar (1998, 20) tests firm size as “an important predictor of human resource management practices” and finds positive results. Smaller firms are less likely to have adopted rewards and incentives, such as formal performance appraisal systems, pension plans, and employee assistance programs. Assuming profitability, the larger the company, the more material incentives the company will offer (Drumm (2000)).

H2: *The larger the entrepreneurial firm, the more complex and sophisticated will be the reward and incentive system.*

3.3 EMPLOYEE AGE

The age of the workforce also affects work incentives. Drumm (2000) argues that a firm must consider not only the decreasing mental capacity and physical capabilities of older employees, but also their increasing internalized motivations, sense of responsibility, social abilities, and values. Various employee life cycles have been discussed in the literature, including the personal life cycle, the career cycle, and the family cycle (Mayrhofer (1992); Opaschowski (1998)). These cycles all have different meanings for the work of each individual, and therefore also for the value placed by the individual on different incentive

components (Mayrhofer (1992)). The effectiveness of the company's total incentive system increases when different types of incentives are matched to the relevant phases of employee life cycles (Mayrhofer (1992, 1249)). Opaschowski (1998) finds that career orientation decreases as the employees' age increases and their interests become refocused on their private lives. A low career orientation suggests that employees have less interest in an increase in income, and therefore, companies with a high percentage of older employees should use fewer financial incentives. This research leads to the following hypotheses about the influence of employee age on the structure of the reward and incentive systems.

H3a: *The older the workforce in the entrepreneurial firm, the more complex and sophisticated are the nonfinancial components of the reward and incentive systems.*

H3b: *The older the workforce in the entrepreneurial firm, the less complex and sophisticated are the financial components of the reward and incentive systems.*

3.4 EDUCATIONAL LEVEL

For several reasons it is important to design a company's reward and incentive systems carefully, according to the preferences and needs of the most educated and qualified employees. Because of their level of education, these employees have more potential to advance, and accordingly, have more job alternatives with other firms (March and Simon (1966)). Implementing rewards and incentives, such as profit sharing, stock option plans, or a certain category of company car (very common in Germany), are ways to motivate and satisfy employees with higher educational levels (Langemeyer (1999); Oechsler (1997)). In addition to such financial incentives, nonfinancial items are also commonly offered to employees at the executive level. Such employees typically have received higher levels of professional training or education (Becker 1985). This observation leads to our fourth hypothesis:

H4: *The higher the education and qualification of the workforce in the entrepreneurial firm, the more complex and sophisticated will be the reward and incentive systems.*

3.5 GENDER

Many authors suggest that male and female employees have different work values (Mottaz (1986); Scholz (1994); Drumm (2000)). One common explanation for these differences is that men and women have different expectations of their work contract, which leads to different satisfaction values in similar work situations (Mottaz (1986)). The consideration of the needs of female employees poses a special challenge for the company's human resource management policies. A central problem is allowing women to integrate work and family, particularly childcare (Drumm (2000)). Reward and incentive systems must be differentiated individually for men and women, but there is a lack of empirical research on their specific needs and preferences. Therefore, although we believe that the male-female mix influences rewards and incentives, we do not propose a specific direction on the effect of the female and male employee ratio in entrepreneurial companies. We hypothesize that:

H5: *The ratio of male and female employees in the entrepreneurial firm influences the reward and incentive system.*

4 METHODS

4.1 DATA AND SAMPLE

We conducted a survey of 1,500 entrepreneurial firms in Germany that were no more than seven years old and which had at least 20 employees. We developed this sample from the large German MARKUS database provided by the market research firm Creditreform. This database represents companies that produce about 95% of Germany's GNP.

The survey selection criteria described above did ultimately lead to a representative sample, but at the cost of a low response rate. We received 59 usable questionnaires, representing a response rate of 3.9%. This low response rate can be explained by the fact that even though we selected based on age, many of the companies in the MARKUS Database were actually older than indicated in the database and therefore were disinclined to respond to the questionnaire. This low response rate can also be explained by the database used. The database shares its origins with a database developed by the Mannheim Center for European Business Research (ZEW) for its research on start-up companies. For the variables "number of employees" and "sales," the data is based on information provided by the companies. The year of founding is based on the entry in the German commercial register, thus the year is a company's legal date of birth. However, not all the firms' recorded dates are the actual start-up date, for instance, because of legal changes when firms change from a *limited company (GmbH)* to a stock corporation (*AG*), which legally means the closing down and restarting of the same firm. We accepted this source of error in order to achieve a genuine random sample. Other databases used in German entrepreneurship research are unfortunately the result of conscious preselection by the researchers and thus cannot be used to select random samples. The companies in the study were asked to give their actual age again in the questionnaire, so that the 59 companies who replied did actually constitute the desired sample group.

Respondents are founders of the company in 58.6% of the cases. 54 give information about their function in the company. 82.3% of the respondents indicate that they were part of the managing board, and 6.9% said that they are department heads. In the questionnaire we explicitly and repeatedly noted that respondents should always take all employees into account when evaluating to what extent the individual incentives or reward categories are applied in the company. This requirement reduces the incidence of incentives that are only available to a small and privileged number of workers from being overvalued. All of the items in the questionnaire are the result of several preliminary tests in expert interviews and written tests.

5 MEASURES

5.1 INDEPENDENT VARIABLES

The independent variables we use in our analyses are company age, firm size (sales and number of employees), age of employees, educational level, and gender. We measure company age in years of age at the time of the survey. We base the preselection of the sample on the MARKUS data set. The respondents also provide information on firm size in terms of sales volume and number of employees, as was the average employee age. We measure the educational level by counting the share of employees with a college or university education. We measure sales volume in millions of euros.

5.2 DEPENDENT VARIABLES

Our dependent variables i are the strengths of five categories of rewards and incentives: incentives provided by the work itself, social incentives, incentives provided by the internal organizational environment, direct financial rewards, and indirect financial rewards. The strength of an incentive category indicates how frequently and systematically a firm offers the incentives of a category to all employees.

We measure the categories by using six items for social incentives and direct financial incentives, eight items for incentives by the work itself and indirect financial incentives, and nine items for organizational incentives. All items of the five categories are listed in the Appendix and include incentive descriptions and category, mean values, and standard deviation. We measure the strength of each individual incentive on a five-point Likert scale coded as follows: 1 = not nonexistent, 3 = medium occurrence, 5 = strong occurrence. For each incentive category we calculate a mean value of the individual items.

6 RESULTS

6.1 INDEPENDENT VARIABLES

Of the 59 responding firms, the average age is 3.8 years. 65.5% of the participating companies had existed for less than four years at the time of the survey. Therefore, the companies we analyze can be considered entrepreneurial firms (Szyperki (1981); Dowling (2002)). 20.7% of the companies belong to the industrial goods industry or the information and telecommunications industry. 10.3% belong to the life science industry, and 12.1% belong to other industries. 36.2% of the companies are in the service industry. 48 of the 59 companies provide data about the sales volume of their last business year. 62.5% of the companies earned less than €5 million in sales revenues. The biggest company in the survey has sales of over €90 million, and the smallest of only €0.5 million. The resulting mean value of €10.5 million is skewed by the large firm outlier. The median level of sales is €3.3 million. The mean value of the number of employees for the companies in this survey is 56. The largest company employs 188 workers.

The average age of employees in the surveyed companies is 34.5 years. 28.3% of the employees are 30 or younger, and 35.9% of the employees are between 31 and 35. 28.3% of the employees are between 36 and 40 in age and 5.6% are between the ages of 41 and 45. Only 1.9% of the employees of the companies questioned are over 45. The oldest average age of any of the companies questioned is 46, and the youngest average age is 25. The median rate of university graduates is 33.1%. In 19.2% of the companies only 5% or less of the employees have a university degree. In 19.3% of the companies, 5.1%-10% of the employees have a university degree, but in only 11.5% of the companies 10.1%-25% of the employees have a university degree. In 23.1% of the companies, 25.1%-50% of the employees have a university degree, and in 26.9% of the companies at least half of the workforce has a university degree. In 26.9% of the companies, at least half of the employees have a university education.

We are also interested in the proportion of female employees. For all the companies in the sample, we find an average proportion of female employees of 33.9%.

6.2 DEPENDENT VARIABLES

We analyze the data from both the aggregate level of the incentive categories and from the individual incentive levels. The result is an overview of the structures of reward and incentive systems in start-ups and a descriptive basis for the testing of the hypotheses. *Table 1* shows the average importance of the five incentive categories. The social incentives category, which shows a mean value of 3.47, rates as most important, and the strength of the incentives provided by the work itself rates a close second, with 3.36 on the five-point Likert scale. The strength of the incentives category provided by the internal organizational environment comes in third, with a mean value of 3.16. The financial incentives category is the weakest. The direct financial incentives rate at 2.66 on average and the indirect financial incentives has the weakest mean rating of 1.9.

We perform paired *t*-tests on the mean values of the five incentive categories to examine the statistical significance of the different mean values. We could find no significant difference between the social incentives and the incentives provided by the work itself. However, all the other incentive categories were different at highly significant levels.

On the level of the individual rewards and incentives, some items show remarkably high ratings. Of the work incentives, *High degree of responsibility* (3.92) and *Acknowledgement for individual performance* (3.86) are the most commonly reported incentives. The social incentives *Team support* (4.15) and *Equal communication* (4.05) rate even higher. Most of the direct and indirect financial incentives are weakly rated. Although the sample companies frequently use direct financial rewards such as *Fixed base salary* (3.97) and *Variable income based on individual performance* (3.37), other rewards such as *Company retirement plan* (1.93), *Company shares* (1.88), and *Revenue sharing* (1.61) are used less often. Among the organizational incentives, the strongest and most frequently implemented incentives are *Flat hierarchies* (3.76), *Open information policies* (3.75), and *Participative leadership style* (3.42).

6.3 TESTS OF THE HYPOTHESES

Here, we report the results of the tests of the hypotheses using regression analysis using SPSS. For all three groups of hypotheses we analyze a separate regression model, which we present in *Table 2*. The independent variables in all regression models are company age (AGE), sales volume (SALES), number of employees (EMPNUM), average employee age (EMPAGE), number of university graduates (UNIGRAD), and number of female employees (FEM). For the category of incentives we calculate one regression model using the ratings of this category (*S*). The regression has the following form:

$$S_{(wi, si, oi, dfi, ifi)} = B_0 + B_1 (AGE) + B_2 (SALES) + B_3 (EMPNUM) + B_4 (EMPAGE) + B_5 (UNIGRAD) + B_6 (FEM).$$

Table 2 gives the *R*-square, the nonstandardized and standardized beta, the significance, and the tolerance values for each regression model. The table also shows the significance levels: (* for $p < 0.1$; ** for $p < 0.05$; *** for $p < 0.001$). We calculate the tolerance measure in SPSS to test the independent variables for collinearity. With values high above the acceptance level of 0.1, we can conclude that there are no collinearities for the independent variables.

Table 2: Results of Regression Analyses^a

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	Work incentives	Social incentives	Direct financial incentives	Indirect financial incentives	Organizational incentives
1. Company age	0.161	0.017	0.011	0.286(*)	-0.040
2. Sales volume	0.284(*)	0.092	-0.231	-0.114	0.034
3. Number of employees	0.151	-0.021	0.357(**)	0.303(*)	-0.052
4. Employee age	-0.091	-0.017	-0.198	0.018	-0.095
5. University graduates	0.689(***)	0.577(**)	0.410(**)	0.472(**)	0.202
6. Females	0.269(*)	0.154	-0.113	0.140	0.253
R^2	0.497	0.322	0.354	0.262	0.135
adjusted R^2	0.409	0.202	0.249	0.132	-0.018

^a standardized regression coefficients are shown. $n = 59$. * for $p < 0.1$; ** for $p < 0.05$; *** for $p < 0.001$.

Company age has a positive impact on the strength of the indirect financial rewards and incentives offered by the sample companies. This finding supports hypothesis 1. Hypothesis 2 states that firm size also positively influences the strength of the reward and incentive systems in entrepreneurial firms. Our results support this hypothesis for the incentives provided by the work itself. The direct and indirect financial incentives are stronger in companies with a larger number of employees. Thus, the second measure considered in H2 also influences the reward and incentive systems.

The results of the five regression models clearly indicate that the employees' educational level has the strongest impact on the different categories of reward and incentive systems for these entrepreneurial firms. The internal organizational environment category is the only one that is not positively influenced by the share of university graduates at a statistically significant level. Thus, the results support hypothesis 4. All other independent variables show significant results for differing categories of rewards and incentives.

Entrepreneurial firms with more female employees had stronger incentives provided by the work itself. This finding supports hypothesis 5 for this incentive category. None of the six independent variables that describe the basic structure of the company and the number of employees show a statistically significant impact on the rewards and incentives provided by the internal organizational environment.

7 DISCUSSION AND CONCLUSION

Entrepreneurial companies are characterized by limited resources and a higher degree of uncertainty and risk. Thus, it is not surprising that one of the results of our study is that the reward and incentive systems of entrepreneurial firms place a higher emphasis on nonfinancial rewards and incentives than on sophisticated financial incentives. Incentives provided by the work itself, such as *High degree of responsibility* and social incentives such as *Equal communication*, may be much more important to employees in such companies than any potential financial reward. In addition, as Greiner (1972) and Kieser (1992) argue, management teams of entrepreneurial firms do not usually have the capacity and experience to design complex incentive systems. Social incentives are not necessarily designed by the management, but may arise by chance (Bau and Dowling (2001)). Incentives such as *helpfulness and consideration* and *open information policies* may be the result of weak organizational structures in start-ups, as Greiner (1972) and Kieser (1992) suggest.

The results of our study also provide valuable information to practitioners as a benchmark for their practices on reward and incentive systems. For researchers, it is important to design further research and develop theory that considers the particular contingencies of entrepreneurial companies (Balkin and Gomez-Mejia (1987); Bamberger, Bacharach, and Dyer (1989)).

Our main objective in this paper is to examine the impact of structural variables of the company and employee characteristics on the structure of the reward and incentive systems in entrepreneurial firms. The most important finding of the study is the high

importance of the educational level of the employees on the structure of the reward and incentive systems. Consistent with the theory of organizational equilibrium (March and Simon (1966)), companies with a higher share of university graduates (who probably have better job alternatives) will have more sophisticated reward and incentive systems. Thus, entrepreneurial firms that need to recruit and retain a high number of university graduates to start their company and run their operations competitively need to focus on the rewards and incentives preferred by university graduates. Otherwise, these firms will not succeed in competing in the job market with large integrated companies. Entrepreneurial firms have to overcome disadvantages of being small, less well known, and therefore only the second choice as a potential employer (Moy and Lee (2003); Williamson, Cable, and Aldrich (2002)).

Our study contributes to the literature in different ways. First, as stated above, we provide interesting findings for further empirical and theoretical research. The data we analyze are from entrepreneurial companies, not just from small firms, IPO companies, or venture-capital-backed companies that are not necessarily young. Second, we provide practitioners in such firms with information about common practices with reward and incentive systems. We also provide information on the most frequently used rewards and incentives, which might seem to make this a “best practice” study, but we also offer information on less common rewards and incentives that may be especially important for entrepreneurial firms seeking to differentiate themselves as employers in the job market.

There are, of course, some limitations to our study. As discussed above, the response rate to our survey was low, but we are confident that the nonresponse bias is not significant, and that the firms we interviewed are clearly young entrepreneurial firms. As with much of the research that uses surveys, the results could be affected by self-reporting biases. For example, managers might have reasons to emphasize reward and incentive schemes in a certain way, so as to hide their weaknesses. Such behaviors would of course lead to a distortion in the results.

Since we conduct the study on German firms, a national cultural bias is one of the possible limitations. Particularly in the field of human resource management and organizational behavior, cultural differences may have an effect on the results of empirical research. Gedenk and Albers (1992) point out intercultural differences between Germany and the U.S. in motivation research. Allen et al. (2004) report significant differences between rewards and organizational performance in Japan and the U.S. Heneman et al. (2002) observe differences in compensation practices in small entrepreneurial and high-growth companies in the U.S. and China. Future research should look at these similarities in more detail.

Future research should also consider in more detail the impact of the organizational life-cycle with all its contingencies, rather than mixing phenomena based on size with phenomena based on age and development stage (Balkin and Gomez-Mejia (1987); Bamberger, Bacharach, and Dyer (1989); Koberg, Uhlenbruck, and Sarason (1996)). Our study shows that entrepreneurial firms implement both financial and nonfinancial incentives for their employees. The research on compensation policies and their impact on

firm performance does not sufficiently reflect the variety of motivational effects of reward and incentive systems. Future research should embrace this variety.

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