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Pay, promotions, and performance

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PART 2

3 THE EFFECTS OF PERFORMANCE MEASUREMENT AND COMPENSATION ON MOTIVATION³⁹

This chapter analyzes empirically the relationship between pay and performance. Economic and psychological theories predict that the design and implementation of a performance measurement and compensation system affect the motivation of employees. Our survey results demonstrate a positive relationship between the perceived characteristics of the complete compensation system and extrinsic motivation. Intrinsic motivation is not affected by the design of monetary compensation, but by promotion opportunities. The compensation system also significantly affects work satisfaction and turnover intent. Our results have both managerial as well as policy implications.

3.1 Introduction

The increase in number of companies using performance-based compensation (see the discussion in Section 1.3.2) and the growing public interest in this topic point to the need for a thorough understanding of the functional and dysfunctional characteristics of compensation systems. Nevertheless, there are still only a few empirical studies on the effects of compensation systems for workers. However, in contrast to economists, organizational psychologists have for many years analyzed psychological effects such as the concept of motivation. They have explored relationships with all sorts of external and internal conditions, both theoretically and empirically. The result is a variety of psychological theories on work motivation that help us to understand the impact of a compensation system on effort. A 'cross-pollination' of economics and applied psychology is the logical next step. We contribute to this interaction by jointly testing aspects of social psychology (e.g. crowding theory) and economics (agency theory) within a case study environment.

This chapter focuses upon workers and assesses the effects of 'compensation systems' from an employee perspective. Our definition of compensation systems includes the absolute level of rewards, the performance measurement and evaluation systems, as well as career concerns. The perception of these processes by employees determines their actions and thus the effectiveness of those systems. We measure employees' perceptions of a compensation system, consisting of monetary rewards and promotion opportunities, based on three criteria (transparency, controllability and fairness) and we relate these perceptions to their levels of intrinsic and extrinsic motivation. Our empirical work results in managerial as well as policy-related recommendations on the design of compensation systems to increase motivation and ultimately labor productivity.

³⁹ Parts of this chapter have been presented at the 2002 conference of the Performance Measurement Association, 17-19 July 2002, Boston, MA (Van Herpen et al., 2002). Also, parts of this study have been published in Dutch in *ESB* (Kok et al., 2002) and in *De Economist* (Van Herpen et al. 2005). I am grateful for the comments provided by Bruno S. Frey.

We will proceed as follows: first a conceptual model is developed in Section 3.2, after which the research site is introduced in Section 3.3. Section 3.4 presents the results, while Section 3.5 concludes.

3.2 Conceptual Model

Before turning to the empirics, we first define the dependent and independent variables that we employ in our empirical tests. We also discuss the (theoretical roots of the) expected relationships between these variables and provide a framework of the concepts and these relationships.

3.2.1 *Compensation system*

The output or performance of an agent is a function of effort, ability, and an error term that captures all uncontrollable factors from the agent's perspective. We confine ourselves to the moral hazard type of the agency problem, and thus we assume that the agent's private information vis à vis principal concerns aspects of his or her behavior (in this case effort), not of his or her type. The principal must depend on performance measures in order to estimate the effort the agent has employed. Performance measures are selected on the basis of two criteria: (a) alignment with the principal's objective and, (b) risk as perceived by the agent (controllability) (Baker, 2002; see also Section 2.2.1). The tradeoff between these two criteria forms the basis for determining the amount of variable monetary compensation that an agent will receive. Besides variable monetary compensation, agents receive a base salary and benefits. A base salary is not only important for selection and retention, but also has an additional incentive effect since there is always the chance of being fired. We will therefore consider not only the effect of incentive pay on motivation, but also the effect of total monetary compensation. Also, career decisions such as promotions depend on measured performance. Therefore, besides considering the effect of total monetary compensation, we also analyze the incentives associated with career concerns, i.e. the possibility to get promoted to a higher job rank (Fama, 1980). Career concerns occur whenever the labor market uses the current output of a worker to adjust the belief about the worker's productivity. The labor market then bases the future wages of the worker on the updated beliefs. In this manner, career concerns may serve as a substitute for incentive compensation as these concerns themselves form an incentive for the agent to optimize (the labor market's belief of) his or her productivity (see Section 2.2.1). In addition to a salary increase, a promotion increases the status of the employee and it can bring new challenges that strengthen intrinsic motivation. Lazear and Rosen (1981) have theoretically demonstrated this incentive effect of promotions by modeling an organization as a tournament (see also the discussion in Section 2.2.2). Ehrenberg and Bognanno (1990b) have empirically shown the relationship between prize structures and performance by using golf tournaments (more empirical evidence is presented in Section 2.2.4.3).

The combination of these elements of the compensation system, i.e. performance measurement and evaluation, monetary compensation, and career concerns, links the employees' performance to their rewards in the form of monetary compensation and promotions. Rewards affect motivation, which in turn affects effort and ultimately performance. A schematic overview of the effect of these various forces is shown in Figure 3.1 (derived and adapted from Lawler (1987)). Our understanding of the concept of motivation is addressed below.

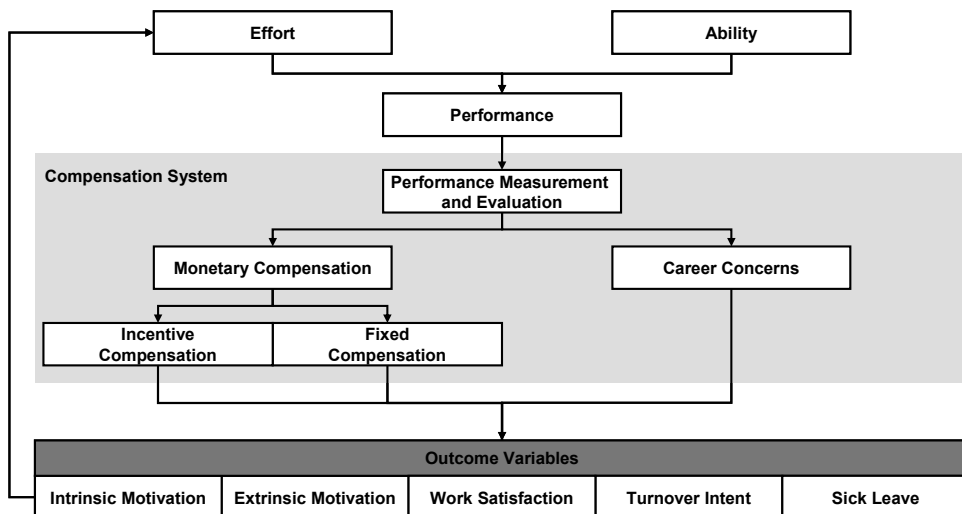


Figure 3.1: Conceptual model

According to Thierry (1987), the effectiveness of a compensation system (in our case the combination of performance evaluation, monetary rewards, and promotion possibilities) depends on three perceived characteristics: namely, (1) *transparency*, (2) *fairness*, and (3) *controllability* (Langedijk and Ykema-Weinen, 2000). The three concepts are closely related and we now explain them in more detail.

3.2.1.1 Transparency

Concerning the first of the characteristics, the perceived transparency of a compensation system depends on two characteristics: communication and complexity. A transparent system informs risk-averse employees not only of the rules of the compensation system but also of the objectives of the firm. Clear communication of these rules towards the personnel will enhance the understanding of the methodologies, measures and targets used and thereby creates more support for the compensation system. Perceived uncertainty decreases the effectiveness of (incentive) compensation (Gibbons, 1998). In sum, the perception of transparency is expected to have a positive relationship with extrinsic motivation.

3.2.1.2 Fairness

Concerning fairness, the second characteristic, the veracity and honesty of the principal is expected to have great impact on the actions of the agent (Prendergast, 1999). Theory on trust has mainly been developed in sociology and not economics. Several other theories have also focused on the concept of fairness, but are based on other perspectives. For instance, reciprocity theory emphasizes the agent’s need to receive a fair amount of compensation relative to the principal (e.g. Fehr and Gächter, 2000). The surplus, created by the agency contract, should be fairly divided in order to maximize incentives, according to this theory. If this condition is not met in the perception of the agent, his or her motivation is expected to decrease (Anderhub et al., 2002). Moreover, equity theory emphasizes the agent’s need to receive a fair amount of compensation relative to other agents (see Adams, 1963). The agent is expected to compare his or her ratio of

performance over reward to the same ratio of other agents. Any deviation in this ratio causes a state of inequity (Locke and Henne, 1986). Recently, Janssen (2001) has shown empirically that managers who perceive effort-reward fairness perform better than managers who perceive they are unfairly rewarded. Although the need for fairness seems to be clearly understood theoretically, economic studies have often reported biased, inaccurate and inflated performance evaluations (Prendergast, 1999). Supervisors tend to evaluate their personnel with relatively high scores. Informing employees of their (below) average performance will make both parties unhappy in the short run, which partially explains the relatively high portion of positive evaluation scores and the existence of forced rankings. However, inaccurate or untrue and undifferentiated evaluations reduce the effectiveness of incentives in organizations (Prendergast, 1999). Hence, the perceived fairness of the different elements of the compensation system is expected to have a positive relationship with extrinsic motivation.

3.2.1.3 *Controllability*

The third characteristic we use to evaluate the compensation system's effectiveness is the perceived relationship between effort and (variable) compensation. Baker (2002) defines *controllability* as the extent to which the agent is able to control or influence the outcome. This striving for 'noise reduction' is one of the two main criteria that determine the choice of the optimal performance measure: the effect of a certain amount of effort on the performance measure should vary as little as possible in order to have control over one's compensation. Hence, the stronger is the perceived controllability over the different elements of the compensation system, the higher will be the level of extrinsic motivation.

3.2.2 *Differentiation within motivation*

So far, we have focused on the effect of the perceived characteristics of a compensation system (performance evaluation, monetary compensation, and promotions) on the concept of extrinsic motivation. Except for the possible negative crowding-out effect (see discussion in Section 2.2.3), intrinsic motivation is expected to remain unaffected by other factors than the 'work itself' such as monetary rewards. 'Work itself' can be characterized by concepts such as the enjoyment of performing the basic tasks belonging to the current job, colleagues, atmosphere, organizational culture, but also advancements to increasingly challenging jobs. All in all, therefore, we expect that the effect of the perceived transparency, fairness, and controllability of monetary compensation on intrinsic motivation remains modest. Promotion possibilities, however, are expected to have a more significant relationship with intrinsic motivation because promotions may alter 'work itself'.

3.2.3 *Indicators for the level of motivation*

Besides the expected relationships discussed above, the perceived quality of a compensation system is also likely to be related to other indicators of motivation that are more tangible than intrinsic and extrinsic motivation. We use three such indicators for the individual level of motivation: (1) work satisfaction, which should be positively related to the perceived quality of the compensation system, (2) turnover intent, a proxy for undesired employee turnover, which we expect to be negatively correlated to the perceived quality of the compensation system, and, finally, (3) absenteeism caused by sick leave, which is assumed to be negatively correlated to the perceived quality of the compensation system. We test the empirical validity of these indirect effects.

3.3 Data and Methodology

3.3.1 *Research site*

The research site central in this study is a division of a listed Dutch company. The division is a publishing company and consists of different clusters, each serving its own market segment. The data were collected in May 2001. At that time, the division employed 1798 workers, 1496 of whom were included in the study. Employees not included were those who did not have a permanent contract, e.g. freelance reporters and interns.

Using a single research site circumvents the problem of having to control for company-specific factors, such as industry specific jobs and tasks, country-specific differences, differences in organizational culture, differences in organizational forms, etc. In particular, the heterogeneity in corporate cultures of various companies might have a strong impact on the results, since corporate culture and the associated various implicit contracts can strongly affect intrinsic motivation.

Within the company, we have collected personnel data and conducted a survey among all individual employees. Before setting up and sending out the survey, we conducted ten interviews with senior management in order to understand the organization, the activities performed and the compensation system in place. The personnel data consist of information on compensation systems and all actual payments to individual employees. We also extracted job descriptions and socio-demographic data for all 1496 employees. The questionnaires were sent to all 1496 employees by snail mail and were returned anonymously via the internal post by 31 percent of the employees. The questionnaire provides information about employee perceptions of the various elements of the compensation system, as well as individual assessments of their levels of motivation (both intrinsic and extrinsic). It also generates data for other outcome variables, such as absenteeism. We will first discuss some general descriptive results at the firm level based on the personnel files, and then elaborate on the questionnaire and the individual level results.

3.3.2 *Firm level descriptives*

Table 3.1 compares the characteristics of the respondents with those of the population of the entire division. A comparison between the sample averages and the population proves the sample to be fairly representative.⁴⁰ Table 3.1 further shows that the percentage of female employees in the firm is quite large: about 69 percent. Over 40 percent of the employees population is younger than 35, 25 percent is older than 45. More than 30 percent has been working already for over ten years with this company. Over 40 percent of the staff works in the editorial department, 5 percent in sales, 9 percent in a marketing department, and the remaining 45 percent in various other staff departments. For 13 percent of the total work force, an incentive compensation system is in place. Moreover, editorial, sales and marketing employees are clustered according to the magazines for which they work. This is not shown in the table.

⁴⁰ A z-test of the representativeness of the sample indicates that the sample has a significantly higher fraction of employees with less than one year of tenure, while it has a lower fraction of employees with 1-5 years of tenure relative to the total population. Furthermore, sales and marketing are departments whose numbers of employees are over-represented, while staff appears to be under-represented. We do not expect these differences to bias our outcome. Our sample also showed a high fraction of employees with incentive compensation, which will be taken into account in the analysis and interpretation of the results.

Table 3.1: Sample descriptives

		Total Population		Sample	
		<i>Absolute</i>	<i>Percentage</i>	<i>Absolute</i>	<i>Percentage</i>
<i>Gender</i>	Female	1024	68.4%	319	69.3%
	Male	450	30.1%	137	29.8%
	Unknown	22	1.5%	4	0.9%
<i>Age (years)</i>	< 25	46	3.1%	12	2.6%
	25 – 34	571	38.2%	185	40.2%
	35 – 44	438	29.3%	150	32.6%
	45 – 54	302	20.2%	81	17.6%
	> 55	139	9.3%	30	6.5%
	Unknown	0	0.0%	2	0.4%
<i>Tenure (years)</i>	< 1	85	5.7%	46	10.0%
	1 – 5	756	50.5%	188	40.9%
	6 – 10	183	12.2%	67	14.6%
	11 – 15	128	8.6%	37	8.0%
	> 16	344	23.0%	116	25.2%
	Unknown	0	0.0%	6	1.3%
<i>Departments</i>	Editorial	599	40.0%	189	41.1%
	Sales	77	5.1%	42	9.1%
	Marketing	141	9.4%	80	17.4%
	Staff and other	679	45.4%	137	29.8%
	Unknown	0	0.0%	12	2.6%
					0.0%
<i>Incentive compensation</i>	No	1305	87.2%	370	80.4%
	Yes	191	12.8%	90	19.6%
	Unknown	0	0.0%	0	0.0%
<i>Total</i>		1496		460	

3.3.2.1 Performance evaluation

The first element of the compensation system we discuss is performance evaluation. In practice, most of the staff had yearly discussions about their individual progress, but formal processes for evaluating the entire staff were absent. Plans for the introduction of an overall performance evaluation procedure for the whole staff were at their final stage when the survey was sent out. Formal evaluation processes of employees with incentive compensation were already in existence. The evaluation meetings are held in the first quarter of each year and last approximately one hour. During these sessions, the performance of the previous year is discussed and the targets for the next period are communicated. However, the period for which the targets are set stretches from January to December. Thus, the communication of targets is not well timed since they are communicated two or three months after the start of the target period.

3.3.2.2 Fixed compensation

The second element of the compensation system we study is fixed compensation. Pay levels are based on two different collective labor agreements. The first labor agreement applies to journalists and the editorial staff. The second labor agreement concerns the remaining employees. Both agreements have different pay-level scales. Each job has been rated in a standard function evaluation system, based on different aspects of the job, and classified into different categories. The total number of job categories within the organization is 49. The reason for this large number of categories is that historically-ascribed categories are still in use. Each category consists of 11, sometimes 14 salary steps. Normally, an employee is put into a higher step each year until the maximum of the category has been reached.

3.3.2.3 *Incentive compensation*

Incentive compensation, the third element we consider, applies to 13 percent of the total workforce (Table 3.1). Two groups can be distinguished who have incentive compensation. The first group consists of employees within the sales department. Their incentive compensation is based on their performance with respect to three objectives. On average, 5.6 percent of their total fixed annual monetary compensation consists of incentive compensation. The second group of employees with incentive compensation is the middle- and top-management. Depending on the category and the department, middle- and top-management are awarded incentive compensation. For every management position, certain performance measures are mandatory. The supervisor determines additional measures, the target, and the pay-performance scheme. In 2000, this resulted in a variable compensation component equal to 21.9 percent of total management remuneration.

3.3.2.4 *Promotion*

The fourth and last element of the compensation system we consider is promotion. There are two specific reasons why a promotion is an especially important incentive device at this company for the 87 percent of the employees, for whom no incentive compensation system is in place. The first reason is the lack of alternative possibilities for salary increases within this division. For this group, there are two generic opportunities for salary increases. The first is a promotion to a position in a higher category. The second is incentive compensation, which only applies to 13 percent of the employees. Both methods are performance based. The third method is an automatic (and modest) salary increase by means of a yearly salary step within every job-category. This last method is not based on the performance of the employees. Moreover, a large proportion of employees in this firm have reached the highest step within their job category. Figure 3.2 shows the situation for the editorial staff, all without incentive compensation: 45 percent have reached the highest compensation given their job category. Hence, given the lack of alternative salary increases, promotions are important as an incentive device.

The second reason why promotions are such an important incentive is the above-industry-average salary increase at a promotion: total monetary compensation for lower-level employees within this division is below the median compensation for the same type of employees in peer companies, whereas at higher levels within the organization the total monetary compensation catches up with peer companies and even surpasses the median compensation for the industry. This implies that a promotion within this division will – on average – have stronger impact on monetary rewards than a similar promotion within another publishing company.

3.3.3 *Questionnaires*

Table 3.2 shows the core questions of the questionnaire, along with the sample mean scores and standard deviations. The questions concerning the employees' perception of the compensation system, as well as those related to motivation and individual performance, were all formulated as statements. Employees were asked to react to the statements by providing answers ranging from 1 (1 = Completely disagree) to 5 (5 = Completely agree). Multiple questions have been asked to assess single constructs. The internal consistency of the constructed scales (transparency, fairness, controllability,

intrinsic and extrinsic motivation) is tested by means of Cronbach's alpha.⁴¹ Factor analysis has been used to provide insights into the relationship between the various answers.

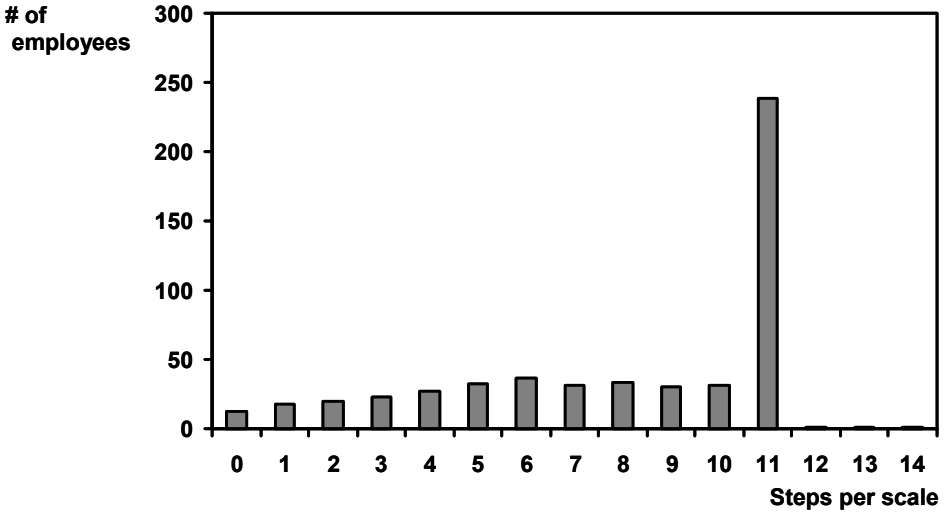


Figure 3.2: Frequency distribution of salary increments for the editorial staff

3.3.3.1 Transparency

The perceived transparency for each element of the compensation system was assessed by asking questions concerning the complexity and the clarity of communication of each element. In total, three statements were formulated that tried to capture transparency. They all contained the word “clear”, either referring to the dimension of communication or the dimension of complexity. In addition, respondents were asked to evaluate the transparency of the overall compensation system. The transparency of the element monetary compensation was measured by only one statement. Two statements measured the transparency of promotion opportunities. For this scale the Cronbach's alpha, the measure for internal consistency, was equal to .83.

3.3.3.2 Fairness

The perceived fairness of the monetary compensation system was measured by using four statements. The statements tried to capture different dimensions of the concept of fairness. The internal fairness of the monetary rewards is measured, first, by asking whether the employees feel that the compensation system treats them fairly and, second, if the match between pay and performance is perceived to be fair. The third statement focuses on the external fairness (the current level of monetary compensation compared with competitive firms). The Cronbach's alpha for this scale equals .82. A single statement measures the perceived fairness of internal promotions.

⁴¹ Cronbach's alpha estimates the proportion of the variance that is systematic and is often used in combination with factor analysis. The alpha can vary on a scale between 0 and 1. A score of 0.70 or above is by convention an acceptable score that points towards internal consistency.

Table 3.2: Summary of questionnaire⁴²

	Perception	Question	Mean	Std. Dev.
<i>Transparency</i>	Mon. Comp.	The way in which my salary is determined is fully clear to me.	3.486	1.233
	Car. Conc.	It's clear to me what my promotion possibilities are.	3.037	1.274
	Car. Conc.	It's clear to me what the criteria are for me to get promoted to the next level.	2.678	1.247
<i>Fairness</i>	Mon. Comp.	I feel fully appreciated by the total compensation I receive for the work I do.	2.989	1.151
	Mon. Comp.	My compensation fits my performance.	2.897	1.200
	Mon. Comp.	My salary is good when compared with what I could earn in another company doing the same job.	2.895	1.118
	Mon. Comp.	I find the compensation system to be fair.	2.497	0.937
	Car. Conc.	People who I've seen receive promotions at the company deserve them.	2.890	0.875
<i>Controllability</i>	Mon. Comp.	I can influence my total compensation by working harder.	1.712	1.035
	Car. Conc.	I have full control over my ability to get promoted.	3.079	1.202
<i>Extrinsic motivation</i>	1	The manner in which I am compensated ensures that I am motivated to give the fullest effort possible.	3.020	1.120
	2	There are enough promotion possibilities to stimulate me to work hard.	2.592	1.042
	3	I'm satisfied with the way in which my compensation is determined.	2.800	0.965
	4	I'm satisfied with the promotion possibilities existing in the company.	2.810	1.029
	5	I get the feeling that the company finds it important to have a solid and clear compensation system.	2.773	1.024
	6	I'm enthusiastic about my salary level.	2.972	1.054
	7	I find the compensation system to be motivating.	2.701	1.087
<i>Intrinsic motivation</i>	1	I get much satisfaction from the work I do.	4.002	0.884
	2	My job is worth the effort.	4.230	0.763
	3	I'm very satisfied with my job.	3.847	0.876
	4	I often have to force myself to go to work.	1.544	0.882
	5	Usually I'm enthusiastic about my job.	4.144	0.856
	6	While at work I often feel like the day will never end.	1.533	0.841
<i>Work Satisfaction</i>		Considering all the aspects of my present job, my overall satisfaction can be expressed by the following grade: (on a scale of 1 to 10):	7.044	1.214
<i>Turnover Intent</i>		I've often seriously considered quitting and finding a job elsewhere.	2.615	1.185

3.3.3.3 Controllability

Statements concerning potential employee influence on the compensation system capture controllability. To this end, we focused on the terms *"influence"* and *"being in control"*. Single statements measured the perceived controllability of the two elements of the compensation system: pay and promotion.

3.3.3.4 Motivation

In order to grasp the level of job motivation of the individual employees, the respondents were asked to react to 13 statements.⁴³ Seven of these statements were intended to estimate the level of extrinsic motivation. The intrinsic motivation of the employees was

⁴² Mon. Comp. refers to questions regarding monetary compensation; Car. Conc. refers to questions regarding career concerns.

⁴³ The statements used in the questionnaires are a result from a careful review of questionnaires available from the psychological literature (e.g. Van Breukelen, 2001 and Van Knippenberg and Van Schie, 2000) and in-depth interviews with managers. Although scales for measuring intrinsic and extrinsic motivation are available, we decided to adjust the questions and add others that were more in line with the culture of the company. We will provide different tests (factor analysis and analysis of internal consistency of the measured construct) indicating the coherence of the constructs.

estimated by means of six questions. The statements refer to motivation coming from the job itself, the level of current monetary compensation, and future rewards by means of promotion opportunities. Factor analysis was used to identify the underlying dimensions of the responses to the fourteen motivational statements. A scree plot of the factor results suggests a two-factor solution. The rotated component matrix of the two factors supports our principal assumption: one factor is loaded with the extrinsic motivation questions, while the intrinsic motivation questions load the second factor.⁴⁴

The internal consistency of the two components of motivation was again estimated with Cronbach's alpha. The scale reliability of the summative scale for extrinsic motivation was .77. In order to generate a proper construct for intrinsic motivation, the negatively stated variables 4 and 6 were inversely recoded. The Cronbach's alpha of this scale has a value of .84.

3.3.3.5 *Indicators for the level of motivation*

Three additional outcome variables that form indicators of individual motivation are analyzed. These indicators, overall work satisfaction, turnover intent and sick leave, were all measured by a single statement. First, employees expressed their overall work satisfaction on a 10-point scale. The second individual indicator of the level of motivation, turnover intent, was assessed by means of the statement: "I've often seriously considered quitting and finding a job elsewhere". Sick leave is a relatively objective indicator and was assessed by the question in the questionnaire – "How many days have you approximately been absent in 2000 for health reasons?" – since we were unable to link the questionnaire to personnel data. The categorized answers were considered only for employees who were employed by the company throughout the entire year 2000.

3.3.3.6 *Control variables*

Individual differences in demographic factors can have an impact on the relationship between the variables (e.g. Janssen, 2001). Therefore, demographic control variables were used in each of the analyses. The respondents were divided into three groups: younger than 35, between 35 and 45 and older than 45. Respondents with high levels of education (a Bachelor's or Master's degree) are distinguished from the rest (dummy variable). The dummy for gender is 1 for male respondents, and 0 for females. Respondents are part of one of four organizational groups: editorial staff (group 1), sales (group 2), marketing (group 3), and support staff (group 4). A dummy distinguishes participants in an incentive program from the rest. Furthermore, a dummy for managers was used as well as a dummy for having explicit targets. Three categories of tenure were used (less than 5 years, between 5 and 10 years, and more than 10 years). A similar division was based on the number of years the respondents were working in the same function (less than 1 year, between 1 and 4 years, and more than 4 years).

3.3.4 *Descriptive statistics*

In order to get an overview of the sample data, we present descriptive statistics for the dependent and independent variables obtained by the questionnaire. Table 3.3 compares the means of the various dependent variables for different sub-groups. The control

⁴⁴ The Appendix shows a scree plot of the factor analysis conducted to create the constructs for intrinsic and extrinsic motivation. We have chosen a two-factor solution, since the scree plot flattens at a three-factor solution, while the eigenvalue is above one for a two-factor solution. Table A5.2 presents the corresponding factor scores for the individual questions.

variables are used to form these sub-groups. It shows that tenure and task tenure are negatively related to work satisfaction. Employees who have worked less than five years with the organization have a higher average work satisfaction than employees who have been with the organization for over ten years (7.17, $p < 0.05$). This difference is even clearer once the focus shifts to task tenure. Performing the same tasks for less than one year provides the employee with a median work satisfaction of 7.29, while staying without a promotion for more than four years diminishes the level of satisfaction to 6.80 ($p < 0.01$).

Table 3.3: Descriptive statistics of control variables⁴⁵

		Extrinsic Motivation	Intrinsic Motivation	Satisfaction	Turnover Intent	Sick Leave
Age	<35	2.851	4.100***	7.078	2.624	1.273*
	35-45	2.762	4.228	6.993	2.619	1.482**
	>45	2.797	4.306**	7.046	2.586	1.346
Education	Low	2.868	4.161	7.082	2.290***	1.387
	High	2.778	4.209	7.024	2.793***	1.349
Gender	Female	2.773	4.163	7.023	2.601	1.378
	Male	2.886	4.254	7.081	2.664	1.312
Tenure	<5	2.891***	4.124**	7.170**	2.470***	1.258**
	5 till 10	2.674*	4.274	6.954	3.091***	1.438
	>10	2.755	4.254	6.900*	2.625	1.463*
Task tenure	<1	3.057***	4.271	7.290*	2.362*	1.353
	1 till 4	2.826	4.162	7.115	2.604	1.288**
	>4	2.656***	4.207	6.797***	2.761*	1.493**
Management	No	2.789	4.163**	6.964***	2.568*	1.414***
	Yes	2.898	4.312**	7.375***	2.809*	1.141***
Part-time	No	2.795	4.203	7.017	2.741***	1.332
	Yes	2.864	4.151	7.146	2.153***	1.467
Targets	No	2.807	4.159*	6.970**	2.575	1.388
	Yes	2.819	4.290*	7.261**	2.733	1.290
Organizational groups	Gr 1 with inc comp	2.778	4.435	7.278	3.222**	1.353
	Gr 1 without inc comp	2.742*	4.346***	7.042	2.679	1.372
	Gr 2 with inc comp	2.933	4.321	7.556**	2.286	1.538
	Gr 2 without inc comp	2.918	3.976	6.857	2.643	1.182
	Gr 3 with inc comp	2.805	4.283	7.276	2.667	1.179
	Gr 3 without inc comp	2.783	4.100	7.061	2.580	1.511
	Gr 4 with inc comp	2.901	4.333	7.538	2.769	1.100
Gr 4 without inc comp	2.877	3.977***	6.837**	2.492	1.291	

* $p < .10$, two-tailed tests.

** $p < .05$, two-tailed tests.

*** $p < .01$, two-tailed tests.

The table also indicates differentiations for the level of intrinsic and extrinsic motivation. Group 4 (Staff) without incentive compensation has a lower level of intrinsic motivation than the other three groups. On average, management functions have a higher level of intrinsic motivation (4.31 versus 4.16, $p < 0.05$). Table 3.4 provides the descriptive statistics for the variables used to analyze the effect of the entire compensation system on motivation and other indicators of individual motivation.⁴⁶

⁴⁵ Gr 1 refers to editorial staff, Gr 2 refers to the sales department, Gr 3 refers to the marketing department, and Gr 4 refers to support staff. All these departments were divided into a group receiving incentive compensation and a group without incentive compensation.

⁴⁶ A full correlation table is presented in the Appendix.

3.3.5 Regression techniques

To test the hypothesized relationships between the perceptions of the compensation system and the two types of motivation, we will use both the average of the 6 or 7 statements and the factor scores as dependent variables. The technique we employ is OLS regression. For regressions with work satisfaction, turnover intent and sick leave as dependent variables the appropriate technique is an ordered probit model, since these ordinal dependent variables result from the usage of a single construct that can only take on a limited number of values.⁴⁷

Table 3.4: Descriptive statistics and correlations

Variables	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
<i>Compensation</i>												
1 Transparency	3.470	(1.252)										
2 Fairness	2.798	(0.902)	0.117									
3 Controllability	1.670	(0.994)	0.089	0.225								
<i>Promotions</i>												
4 Transparency	2.843	(1.183)	0.095	0.201	-0.052							
5 Fairness	2.849	(0.892)	0.110	0.343	0.164	0.065						
6 Controllability	3.086	(1.184)	-0.105	0.330	0.184	0.317	0.217					
<i>Motivation</i>												
7 Extrinsic	2.788	(0.691)	0.061	0.716	0.199	0.342	0.343	0.451				
8 Intrinsic	4.196	(0.612)	0.055	0.130	0.008	0.225	0.041	0.104	0.251			
<i>Indicators of motivation</i>												
9 Work satisfaction	7.000	(1.250)	0.005	0.396	0.134	0.242	0.194	0.269	0.422	0.470		
10 Turnover intent	2.662	(1.177)	-0.030	-0.310	-0.091	-0.186	-0.128	-0.209	-0.426	-0.336	-0.359	
11 Sick leave	1.356	(0.798)	0.012	0.028	0.004	0.033	-0.020	-0.002	-0.011	-0.182	-0.136	0.006

N = 385.

3.4 Results

3.4.1 The effects of monetary compensation and promotions on motivation

Table 3.5 displays the regression results concerning the overall motivational effects of monetary compensation and promotions, with extrinsic and intrinsic motivation as the dependent variables. Both the factor results and the average values are used as dependent variables, in order to investigate if the type of scale that is used affects the outcomes. The independent variables are the perceptions of the monetary part of the compensation system and the promotion part. A large number of control variables are used to restrain the impact of demographic factors on the two types of motivation. Four out of six characteristics have a significant relationship with extrinsic motivation: namely, the perceived fairness of the monetary compensation system and the transparency, fairness and controllability of promotions. The perceived fairness of the monetary compensation has the strongest effect on extrinsic motivation. The transparency and the controllability of the monetary part of the compensation system were found to have no effect on the level of extrinsic motivation. The level of intrinsic motivation is not influenced by any of the characteristics of the monetary compensation system.

⁴⁷ In order to test for common-method variance, we have used a one-factor test. This test showed that the variance explained by a single factor is 19 percent and the natural result was a 12 factor solution. Therefore, we conclude that the potential risk of finding false relationships as a result of common-method variance is limited.

However, two perceived characteristics of promotion opportunities have a significant positive effect on intrinsic motivation. The transparency of promotions is found to be significant when using both the factor scores and the average scores as a measure for intrinsic motivation. Controllability has a modest significant effect when measuring intrinsic motivation by averaging the underlying variables.⁴⁸

The control variables that are significantly correlated with extrinsic motivation are the employee characteristics gender and task tenure. The significant control variables in the regression explaining variations in intrinsic motivation are age and the organizational department where the employees are working. In order to test for multicollinearity, the VIF scores were also measured. The highest score (2.999) was below commonly employed tolerance levels and indicates that multicollinearity does not significantly affect our results.

Table 3.5b continues the analyses by replacing the average scores of the perceptions of the compensation system with the factor scores. This results in comparable outcomes as in Table 3.5a. The main difference is the effect of the controllability of monetary compensation on extrinsic motivation, which is significant at the 0.01 level. The perceived controllability of promotions significantly affects intrinsic motivation at the 0.05 level.

The empirical results give an indication of the validity of the theoretically-expected relationships between the perceptions of a compensation system and motivation. Regarding extrinsic motivation, support has been found for five of the six expected relationships. Transparency of monetary compensation has not been proved to have a significant effect on extrinsic motivation. On the other hand, transparency of promotion opportunities did show the expected relationship. Fairness and controllability were found to be important influencers of extrinsic motivation.⁴⁹

Furthermore, no significant relationship has been revealed between the perceptions of the characteristics of the monetary part of the compensation system and intrinsic motivation. However, intrinsic motivation is significantly influenced by the perception of transparency and controllability of the promotion opportunities. This result does not hold for the other characteristic of the promotion opportunities, fairness.

⁴⁸ When using the average scores as dependent variable, ordered probit can serve as an alternative technique, since the dependent variable is a derivative of an ordinal variable. The results are extremely similar. The levels of significance do not change for the variables of interest.

⁴⁹ We also analyzed the samples of employees with an incentive contract and employees without an incentive contract separately. This served two purposes. First of all, the different contract types can potentially lead to different outcomes. Second, the sample contained a relatively high fraction of employees with an incentive contract, which potentially biases the outcomes. The result of the separate regressions showed similar outcomes for the main variables of interest. We have also investigated the interaction effects of the different variables of the compensation system. The results did not change the overall outcome (i.e. the relationship between the compensation system and motivation), nor did it result in additional interesting insights.

Table 3.5a: Regression results extrinsic & intrinsic motivation⁵⁰

	Extrinsic Motivation				Intrinsic Motivation			
	Averages		Factor Scores		Averages		Factor Scores	
	Coef.	Std. Dev.	Coef.	Std. Dev.	Coef.	Std. Dev.	Coef.	Std. Dev.
<i>Characteristics of monetary compensation</i>								
Transparency	-0.015	(0.018)	-0.004	(0.024)	0.004	(0.025)	-0.005	(0.040)
Fairness	0.458***	(0.027)	0.749***	(0.036)	0.055	(0.037)	-0.020	(0.060)
Controllability	0.024	(0.024)	0.033	(0.033)	-0.016	(0.033)	-0.033	(0.054)
<i>Characteristics of promotion</i>								
Transparency	0.078***	(0.020)	0.087***	(0.028)	0.062**	(0.028)	0.141***	(0.046)
Fairness	0.070***	(0.026)	0.107***	(0.035)	0.026	(0.035)	0.050	(0.058)
Controllability	0.106***	(0.021)	0.129***	(0.028)	0.052*	(0.028)	0.070	(0.047)
<i>Control variables</i>								
Age < 35	0.031	(0.059)	0.079	(0.080)	-0.189**	(0.08)	-0.335**	(0.131)
Age > 45	0.067	(0.063)	0.148*	(0.086)	0.129	(0.086)	0.280**	(0.141)
Education	-0.099**	(0.050)	-0.102	(0.068)	-0.032	(0.069)	-0.024	(0.111)
Gender	0.116**	(0.053)	0.075	(0.072)	0.079	(0.072)	0.046	(0.119)
Gr 1 with inc comp	0.089	(0.142)	-0.118	(0.192)	0.327*	(0.193)	0.559*	(0.316)
Gr 1 without inc comp	0.080	(0.060)	0.045	(0.081)	0.419***	(0.082)	0.737***	(0.134)
Gr 2 with inc comp	0.105	(0.117)	0.085	(0.162)	0.429***	(0.159)	0.880***	(0.267)
Gr 2 without inc comp	0.076	(0.132)	0.069	(0.175)	0.017	(0.179)	0.099	(0.288)
Gr 3 with inc comp	0.091	(0.129)	-0.020	(0.177)	0.296*	(0.176)	0.460	(0.291)
Gr 3 without inc comp	0.010	(0.076)	-0.030	(0.102)	0.186*	(0.104)	0.350**	(0.168)
Gr 4 with inc comp	0.183	(0.152)	0.110	(0.205)	0.212	(0.206)	0.382	(0.336)
Management dummy	-0.061	(0.082)	-0.037	(0.112)	0.114	(0.111)	0.243	(0.183)
Part-time	-0.042	(0.058)	-0.090	(0.079)	-0.069	(0.079)	-0.156	(0.130)
Target dummy	-0.031	(0.081)	0.015	(0.110)	-0.016	(0.11)	-0.054	(0.181)
Task tenure < 1	0.116	(0.061)	0.176**	(0.084)	0.088	(0.083)	0.096	(0.137)
Task tenure > 4	-0.126**	(0.056)	-0.167***	(0.076)	-0.051	(0.076)	-0.064	(0.124)
Tenure < 5	0.095	(0.064)	0.163*	(0.087)	-0.016	(0.087)	-0.058	(0.143)
Tenure > 10	0.059**	(0.075)	0.176*	(0.101)	-0.092	(0.101)	-0.220	(0.167)
Intercept	0.702	(0.136)	-3.245***	(0.183)	3.499***	(0.185)	-0.862***	(0.300)
R ²	0.631		0.702		0.161		0.184	
R ² adjusted	0.610		0.683		0.111		0.134	
Number of observations	429		415		429		415	

**p* < .10, two-tailed tests.
 ***p* < .05, two-tailed tests.
 ****p* < .01, two-tailed tests.

⁵⁰ Gr 1 refers to editorial staff, Gr 2 refers to the sales department, Gr 3 refers to the marketing department, and Gr 4 refers to support staff. All these departments were divided into a group receiving incentive compensation and a group without incentive compensation.

Table 3.5b: Regression results extrinsic & intrinsic motivation⁵¹

	Extrinsic Motivation				Intrinsic Motivation			
	Averages		Factor Scores		Averages		Factor Scores	
	Coef.	Std. Dev.	Coef.	Std. Dev.	Coef.	Std. Dev.	Coef.	Std. Dev.
<i>Characteristics of monetary compensation</i>								
<i>(Factor Scores)</i>								
Transparency	0.009	(0.022)	0.039	(0.030)	0.004	(0.030)	-0.015	(0.050)
Fairness	0.401***	(0.024)	0.660***	(0.032)	0.040	(0.032)	-0.036	(0.053)
Controllability	0.110***	(0.025)	0.169***	(0.033)	-0.009	(0.033)	-0.036	(0.055)
<i>Characteristics of promotion</i>								
<i>(Factor Scores)</i>								
Transparency	0.117***	(0.023)	0.128***	(0.031)	0.096***	(0.031)	0.189***	(0.051)
Fairness	0.076***	(0.023)	0.108***	(0.030)	0.038	(0.031)	0.065	(0.050)
Controllability	0.133***	(0.024)	0.162***	(0.032)	0.071**	(0.032)	0.123**	(0.053)
<i>Control variables</i>								
Age < 35	0.028	(0.059)	0.074	(0.079)	-0.194**	(0.080)	-0.347***	(0.131)
Age > 45	0.085	(0.063)	0.169**	(0.086)	0.140	(0.086)	0.272*	(0.142)
Education	-0.111**	(0.051)	-0.123*	(0.069)	-0.011	(0.069)	-0.009	(0.114)
Gender	0.092*	(0.054)	0.043	(0.073)	0.078	(0.073)	0.067	(0.121)
Gr 1 with inc comp	0.062	(0.144)	-0.165	(0.195)	0.328*	(0.195)	0.568*	(0.323)
Gr 1 without inc comp	0.081	(0.060)	0.045	(0.081)	0.425***	(0.082)	0.742***	(0.135)
Gr 2 with inc comp	0.108	(0.117)	0.083	(0.163)	0.451***	(0.159)	0.900***	(0.270)
Gr 2 without inc comp	0.059	(0.131)	0.044	(0.174)	0.021	(0.178)	0.121	(0.289)
Gr 3 with inc comp	0.088	(0.130)	-0.031	(0.178)	0.315*	(0.176)	0.472	(0.294)
Gr 3 without inc comp	0.011	(0.078)	-0.034	(0.104)	0.195*	(0.106)	0.382**	(0.173)
Gr 4 with inc comp	0.190	(0.152)	0.116	(0.205)	0.225	(0.206)	0.391	(0.339)
Management dummy	-0.061	(0.082)	-0.035	(0.111)	0.111	(0.111)	0.247	(0.184)
Part-time	-0.057	(0.058)	-0.108	(0.079)	-0.068	(0.079)	-0.144	(0.130)
Target dummy	-0.068	(0.083)	-0.034	(0.114)	-0.031	(0.113)	-0.058	(0.188)
Task tenure < 1	0.112*	(0.061)	0.173**	(0.083)	0.081	(0.083)	0.092	(0.138)
Task tenure > 4	-0.111**	(0.056)	-0.153**	(0.075)	-0.042	(0.076)	-0.065	(0.125)
Tenure < 5	0.103	(0.064)	0.174**	(0.086)	-0.013	(0.086)	-0.064	(0.143)
Tenure > 10	0.068	(0.074)	0.189*	(0.101)	-0.090	(0.100)	-0.227	(0.167)
Intercept	2.748***	(0.084)	-0.111	(0.113)	4.033***	(0.113)	-0.246	(0.187)
R ²	0.631		0.703		0.171		0.189	
R ² adjusted	0.609		0.684		0.121		0.138	
Number of observations	421		408		421		408	

p* < .10, two-tailed tests.*p* < .05, two-tailed tests.****p* < .01, two-tailed tests.

3.4.2 The effects of monetary compensation and promotions on indicators of motivation

While investigating the relationship between the compensation system and motivation, it is informative to look at the more direct consequences of motivation. Table 3.6 presents the results of these tests: namely, the relationship between the compensation system and work satisfaction, turnover intent, and sick leave.

⁵¹ Gr 1 refers to editorial staff, Gr 2 refers to the sales department, Gr 3 refers to the marketing department and Gr 4 refers to support staff. All these departments were divided into a group receiving incentive compensation and a group without incentive compensation.

Table 3.6: Regression results indicators of motivation (ordered probit)⁵²

	Work Satisfaction		Turnover Intent		Sick Leave	
	Coef.	Std. Dev.	Coef.	Std. Dev.	Coef.	Std. Dev.
<i>Characteristics of monetary compensation</i>						
Transparency	-0.073	(0.046)	-0.041	(0.045)	0.029	(0.065)
Fairness	0.428***	(0.070)	-0.340***	(0.069)	0.001	(0.095)
Controllability	-0.034	(0.062)	-0.054	(0.061)	0.053	(0.087)
<i>Characteristics of promotion</i>						
Transparency	0.136***	(0.052)	-0.079	(0.051)	0.081	(0.072)
Fairness	0.063	(0.065)	-0.044	(0.065)	0.037	(0.093)
Controllability	0.107**	(0.052)	-0.078	(0.052)	0.041	(0.076)
<i>Control variables</i>						
Age < 35	-0.160	(0.150)	0.074	(0.148)	-0.136	(0.211)
Age > 45	0.237	(0.159)	-0.131	(0.159)	-0.321	(0.216)
Education	-0.200	(0.128)	0.487***	(0.128)	0.160	(0.173)
Gender	0.109	(0.134)	-0.007	(0.133)	0.045	(0.192)
Gr 1 with inc comp	0.580	(0.355)	0.113	(0.351)	0.890	(0.542)
Gr 1 without inc comp	0.486***	(0.152)	0.034	(0.151)	-0.298	(0.212)
Gr 2 with inc comp	0.980***	(0.300)	-0.444	(0.296)	0.603	(0.425)
Gr 2 without inc comp	0.172	(0.329)	0.229	(0.328)	-0.711	(0.622)
Gr 3 with inc comp	0.589*	(0.327)	-0.487	(0.321)	0.863	(0.530)
Gr 3 without inc comp	0.367*	(0.193)	0.025	(0.191)	0.237	(0.261)
Gr 4 with inc comp	0.718*	(0.383)	-0.231	(0.378)	0.380	(0.713)
Management dummy	0.262	(0.206)	0.284	(0.203)	-1.083***	(0.355)
Part-time	0.010	(0.148)	-0.358**	(0.147)	0.315*	(0.191)
Target dummy	-0.141	(0.201)	0.201	(0.203)	-0.255	(0.314)
Task tenure < 1	0.077	(0.156)	-0.266*	(0.156)	0.000	(0.246)
Task tenure > 4	-0.217	(0.141)	0.133	(0.140)	0.404**	(0.196)
Tenure < 5	0.239	(0.162)	-0.515***	(0.161)	-0.428**	(0.218)
Tenure > 10	-0.169	(0.187)	-0.247	(0.188)	-0.199	(0.246)
Pseudo R ²	0.095		0.092		0.065	
Number of observations	427		421		385	

**p* < .10, two-tailed tests.
 ***p* < .05, two-tailed tests.
 ****p* < .01, two-tailed tests.

Work satisfaction is significantly positively affected by the fairness of the monetary compensation and the transparency and controllability of promotion opportunities. Turnover intent has a significant negative relationship with the perception of the fairness of monetary compensation. Sick leave was not significantly related to any of the six characteristics of the compensation and promotion system.⁵³

⁵² Gr 1 refers to editorial staff, Gr 2 refers to the sales department, Gr 3 refers to the marketing department, and Gr 4 refers to support staff. All these departments were divided into a group receiving incentive compensation and a group without incentive compensation.

⁵³ Unfortunately, no objective information on the frequency of sick leave could be tied to the anonymous questionnaire.

3.5 Conclusion

Various schools of thought in both the psychological and the economic literature have made compensation the central subject of study. However, they have not yet come to a univocal answer about the effect of compensation and promotion on the motivation and performance of workers. The economic literature has largely focused on developing theoretical models without empirically investigating their implications. This stands in sharp contrast to the growing interest from both the public and the private sector to implement or restructure compensation systems for workers.

In this chapter, we have empirically analyzed the compensation system of a firm. Both the dependent and independent variables that we employ in our analysis are derived from psychological and economic theories. The results enable us to evaluate the empirical validity of these theories in our case study setting and offer managerial and policy recommendations.

Crowding theory has been developed in an attempt to stretch the boundaries of economic theory. Our regression results do not find support for crowding theory insofar as monetary compensation is concerned. We have not found evidence of a statistically significant relationship between monetary compensation and intrinsic motivation. As far as crowding theory focuses on the effects of incentive compensation, our study remains inconclusive because of the low percentage of employees who have incentive pay. But we do find that promotion opportunities affect intrinsic motivation positively. Transparent and controllable promotional opportunities can increase the prospect of enjoyable future tasks and thereby intrinsic motivation. We have also tested predictions made by both the reciprocity and equity theory by investigating the relationship between the perception of fairness and motivation. As hypothesized, we have found that the perceived fairness of the monetary and promotional parts of the compensation system has a significant relationship with extrinsic motivation. This result is predicted by both the reciprocity theory and equity theory. In this respect, therefore, we are unable to distinguish between the reciprocity and equity theory.

The test of crowding theory is not only of academic importance, but also has significant policy implications. An important challenge for most West-European countries, especially the Netherlands, lies in increasing labor productivity. Our empirical results show that motivation (and thus productivity) will be higher when a compensation system is well designed. As we have shown, an increase in the perception of fairness and controllability will increase the level of extrinsic motivation. The support for the importance of perceived fairness is clearly a recurring empirical result in this study. The feeling of being treated fairly by the company will induce the worker to have higher motivation in return. A first specific policy recommendation is that companies should do their best to promote this perception of fairness. For example, an increase in bonuses of top-managers and payouts to shareholders (i.e. dividends or stock price increases), while at the same time salary levels of workers remain constant, can stimulate the perception of unfairness and will reduce the workers' motivation and productivity. Increases in labor productivity should partly be returned to the workers, instead of being completely consumed by shareholders or top-management as predicted by the reciprocity theory. Equity theory emphasizes the importance of fairly rewarding differences of performance between workers. Incentive compensation is an instrument that potentially enhances this type of fairness. Since the level of intrinsic motivation is not affected by differences in the design of the compensation system, we found no evidence that potentially negative effects such as crowding-out might occur. Therefore, the second policy recommendation is to implement performance-based pay in situations where the conditions of fairness and controllability can be met.

Not having identified a relationship between the characteristics of monetary compensation and intrinsic motivation also implies that a well-designed monetary compensation system will not serve as a substitute for promotion opportunities. The characteristics of promotions have been shown to have a positive relationship with both types of motivation. Therefore, promotions are an important tool to enhance labor productivity. We have shown that a well-perceived compensation system also has a beneficial effect on other indicators of motivation: work satisfaction and turnover intent. We can conclude that a well-designed compensation system can be of great importance for managers in order to increase both motivation and individual performance.

Our study has three main limitations. The first one is the difficulty of investigating the causality of the relationships. We can not be sure that the perception of a transparent, fair, and controllable compensation system leads to increased motivation, or that the causality goes the other way. The perception of the compensation system will consist of updated beliefs of how motivation results in rewards. The relationships we have analyzed are based on the existing psychological and economic literature, but whether the causality runs in the direction that the theory predicts or vice versa remains an issue worth further investigation.

The research site is the cause of the second limitation. The research site was one division of a single Dutch company. This leads to the limitation that we are unable to identify the practical boundaries of this study and the possibility of generalizing the results.

The third limitation is related to the research methodology. In our methodology, we were not able to combine the questionnaire with hard data that illustrate the actual level of effort and performance displayed by the employees. We did not analyze to what extent the maximization of employee motivation corresponds with the maximization of the principal's utility. The costs of improving the compensation system should, of course, be weighed against the benefits of motivated personnel.

Much work remains to be done. One important possible contribution is to increase the understanding of the mutual relations between extrinsic, intrinsic, and total motivation. This chapter has shown the existence of a positive relationship between the perceived characteristics of a compensation system and both types of motivation, but has not dealt with the interaction of the two types of motivation with respect to total motivation or performance. The impact of a compensation system on the performance of employees depends for a large part on the importance of extrinsic motivation for total motivation. Further research might also lead to an improved understanding of the optimal balance between improving the monetary compensation system and providing promotion opportunities.

APPENDIX A3:

Table A3.1: Complete correlation table

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Compensation</i>																	
1 Transparency	1.000																
2 Fairness	0.117	1.000															
3 Controllability	0.089	0.225	1.000														
<i>Promotions</i>																	
4 Transparency	0.095	0.201	-0.052	1.000													
5 Fairness	0.110	0.343	0.164	0.065	1.000												
6 Controllability	-0.105	0.330	0.184	0.317	0.217	1.000											
<i>Motivation</i>																	
7 Extrinsic	0.061	0.716	0.199	0.342	0.343	0.451	1.000										
8 Intrinsic	0.055	0.130	0.008	0.225	0.041	0.104	0.251	1.000									
<i>Indicators of motivation</i>																	
9 Work satisfaction	0.005	0.396	0.134	0.242	0.194	0.269	0.422	0.470	1.000								
10 Turnover intent	-0.030	-0.310	-0.091	-0.186	-0.128	-0.209	-0.426	-0.336	-0.359	1.000							
11 Sick leave	0.012	0.028	0.004	0.033	-0.020	-0.002	-0.011	-0.182	-0.136	0.006	1.000						
<i>Control variables</i>																	
12 Age < 35	-0.124	-0.058	0.144	-0.115	0.117	0.167	0.027	-0.171	-0.004	0.029	-0.081	1.000					
13 Age 35-45	-0.027	0.028	-0.049	-0.030	-0.029	0.010	-0.049	0.036	-0.031	-0.004	0.079	-0.589	1.000				
14 Age > 45	0.169	0.040	-0.103	0.148	-0.103	-0.199	0.018	0.153	0.034	-0.032	0.004	-0.484	-0.410	1.000			
15 Education	0.008	-0.055	0.200	-0.119	0.042	0.027	-0.066	0.006	-0.052	0.233	-0.028	0.181	-0.051	-0.158	1.000		
16 Gender	0.157	0.088	0.103	0.008	0.012	-0.122	0.060	0.055	0.048	0.055	-0.034	-0.199	-0.034	0.260	-0.023	1.000	
17 Gr 1 with inc comp	0.090	0.023	0.133	-0.013	0.006	-0.018	-0.005	0.085	0.041	0.107	0.008	-0.174	0.044	0.153	0.074	-0.005	1.000
18 Gr 1 without inc comp	-0.219	-0.150	-0.222	0.209	-0.168	0.084	-0.041	0.187	-0.018	0.030	0.003	-0.025	0.076	-0.058	0.012	-0.253	-0.164
19 Gr 2 with inc comp	0.029	0.049	0.298	-0.089	-0.039	0.005	0.038	0.063	0.109	-0.078	0.072	0.104	-0.056	-0.055	0.065	0.021	-0.056
20 Gr 2 without inc comp	-0.030	-0.014	-0.020	-0.054	0.026	-0.043	-0.014	-0.094	-0.043	0.016	-0.047	-0.024	-0.002	0.031	-0.137	-0.071	-0.033
21 Gr 3 with inc comp	0.086	0.015	0.274	-0.105	0.093	0.012	-0.008	0.040	0.048	0.001	-0.057	0.105	-0.047	-0.065	0.207	0.036	-0.058
22 Gr 3 without inc comp	0.061	0.013	-0.087	-0.023	0.117	-0.030	-0.005	-0.059	0.018	-0.018	0.086	0.127	-0.080	-0.071	0.058	-0.069	-0.075
23 Gr 4 with inc comp	0.124	-0.001	0.053	-0.036	-0.009	-0.028	-0.012	0.004	0.052	0.020	-0.052	-0.103	-0.014	0.134	0.089	0.204	-0.035
24 Gr 4 without inc comp	0.054	0.112	-0.093	-0.063	0.059	-0.047	0.043	-0.226	-0.103	-0.038	-0.041	-0.057	0.018	0.053	-0.228	0.243	-0.130
25 Management dummy	0.236	0.118	0.257	-0.078	0.179	-0.003	0.030	0.061	0.105	0.115	-0.131	-0.069	-0.004	0.088	0.280	0.269	0.324
26 Part-time	-0.033	0.083	-0.072	0.073	0.012	0.095	0.044	0.017	0.061	-0.228	0.080	-0.198	0.228	-0.017	-0.228	-0.279	-0.079
27 Target dummy	0.123	0.035	0.401	-0.080	0.036	-0.024	0.002	0.087	0.113	0.032	-0.054	0.026	-0.074	0.045	0.185	0.188	0.319
28 Task tenure < 1	-0.104	0.080	0.086	0.090	0.037	0.179	0.170	0.045	0.050	-0.072	0.009	0.197	-0.116	-0.110	0.122	-0.171	-0.041
29 Task tenure 1-4	0.083	0.009	0.103	-0.079	0.104	0.048	0.038	-0.071	0.088	-0.021	-0.119	0.227	-0.046	-0.206	0.084	-0.035	-0.019
30 Task tenure > 4	-0.014	-0.066	-0.170	0.020	-0.137	-0.177	-0.160	0.043	-0.129	0.073	0.119	-0.379	0.131	0.297	-0.175	0.157	0.049
31 Tenure < 5	-0.098	0.005	0.150	-0.148	0.168	0.151	0.077	-0.139	0.083	-0.084	-0.121	0.555	-0.179	-0.436	0.194	-0.177	-0.123
32 Tenure 5-10	0.022	-0.021	0.020	-0.022	-0.056	-0.043	-0.070	0.034	-0.029	0.142	0.024	0.035	0.092	-0.134	0.012	0.044	-0.054
33 Tenure > 10	0.076	0.019	-0.164	0.164	-0.134	-0.114	-0.027	0.112	-0.065	-0.014	0.112	-0.605	0.124	0.548	-0.219	0.147	0.171

N = 385.

Variables	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
<i>Control variables (continued)</i>																
18 Gr 1 without inc comp	1.000															
19 Gr 2 with inc comp	-0.208	1.000														
20 Gr 2 without inc comp	-0.122	-0.042	1.000													
21 Gr 3 with inc comp	-0.216	-0.074	-0.043	1.000												
22 Gr 3 without inc comp	-0.280	-0.095	-0.056	-0.099	1.000											
23 Gr 4 with inc comp	-0.129	-0.044	-0.026	-0.046	-0.059	1.000										
24 Gr 4 without inc comp	-0.484	-0.165	-0.097	-0.172	-0.222	-0.102	1.000									
25 Management dummy	-0.388	-0.026	-0.078	0.506	-0.116	0.290	0.003	1.000								
26 Part-time	0.159	-0.063	0.086	-0.121	0.014	-0.047	-0.054	-0.199	1.000							
27 Target dummy	-0.348	0.441	-0.094	0.436	-0.179	0.236	-0.188	0.486	-0.189	1.000						
28 Task tenure < 1	0.047	-0.006	-0.060	0.018	0.114	-0.063	-0.077	-0.029	0.029	-0.013	1.000					
29 Task tenure 1-4	-0.120	0.051	0.003	0.047	0.010	0.051	0.057	0.031	-0.001	0.025	-0.416	1.000				
30 Task tenure > 4	0.094	-0.050	0.039	-0.063	-0.091	-0.010	-0.006	-0.012	-0.020	-0.017	-0.263	-0.768	1.000			
31 Tenure < 5	-0.103	0.107	0.024	0.002	0.107	0.007	0.020	-0.057	0.023	0.027	0.111	0.357	-0.457	1.000		
32 Tenure 5-10	0.085	-0.027	-0.019	0.107	-0.085	0.020	-0.055	0.093	-0.088	0.002	-0.010	0.059	-0.056	-0.411	1.000	
33 Tenure > 10	0.040	-0.089	-0.009	-0.080	-0.043	-0.021	0.015	-0.020	0.048	-0.022	-0.120	-0.415	0.525	-0.719	-0.323	1.000

N = 385.

Table A3.2: Factor scores intrinsic and extrinsic motivation

Perception	Question	Factor 1	Factor 2
<i>Extrinsic motivation</i>	1 The manner in which I am compensated ensures that I am motivated to give the fullest effort possible.	0.059	0.764
	2 There are enough promotion possibilities to stimulate me to work hard.	0.259	0.438
	3 I'm satisfied with the way in which my compensation is determined.	0.055	0.789
	4 I'm satisfied with the promotion possibilities existing in the company.	0.280	0.630
	5 I get the feeling that the company finds it important to have a solid and clear compensation system.	0.015	0.692
	6 I'm enthusiastic about my salary level.	-0.027	0.692
	7 I find the compensation system to be motivating.	0.051	0.481
<i>Intrinsic motivation</i>	1 I get much satisfaction from the work I do.	0.837	0.035
	2 My job is worth the effort.	0.671	0.130
	3 I'm very satisfied with my job.	0.802	0.098
	4 I often have to force myself to go to work.	-0.671	-0.093
	5 Usually I'm enthusiastic about my job.	0.812	0.030
	6 While at work I often feel like the day will never end.	-0.531	-0.087

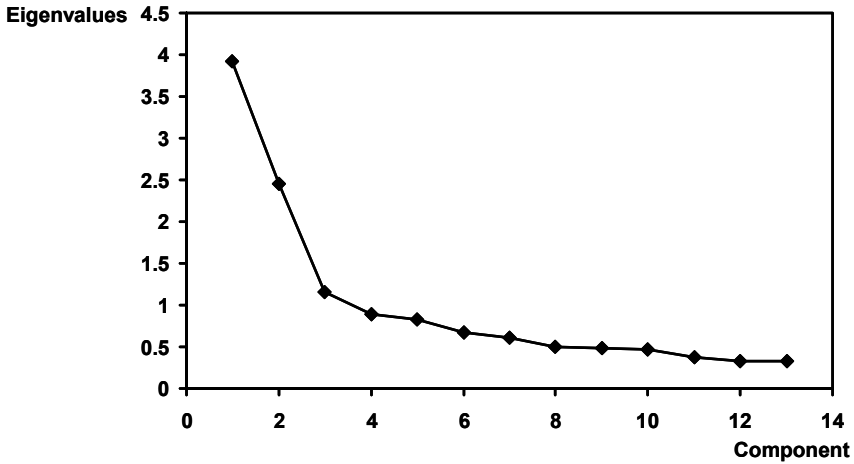


Figure A3.1: Scree plot

