

The antecedents of satisfaction with pay in teams: do performance-based compensation and autonomy keep team-members satisfied?

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Abstract

This paper aims to investigate the effects performance-based compensation and autonomy on satisfaction with pay in the context of team working. I develop a complex perspective that considers the influence of different monetary and non-monetary rewards on satisfaction with pay. Drawing from the agency theory, equity theory and theory of cooperation I predict that both piece rates and team-based rewards are associated with higher pay satisfaction. Moreover, I claim that both individual and team-based autonomy contribute to increased satisfaction with pay. Using a cross-sectional dataset of randomly selected European employees who are asked about specific working and living conditions, results confirm that both productivity-based rewards and autonomy are important for employee satisfaction. Managers should know when to introduce rewards based only on individual merits and when to give to use autonomy as a buffer to compensate for the potential lack of fairness in the payment system.

Keywords: performance-based compensation, agency theory, equity theory, pay satisfaction, employee autonomy

JEL classification: J31, J33

1. Introduction

The objective of this paper is to investigate the effect of both performance-based compensation and autonomy on satisfaction with pay in the context of team working. Previous literature suggests that even if teams are common in organizations only some firms use corresponding compensation systems (Zobal, 1998; Shaw et al., 2001). Zobal (1998) argues that 65% of the

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reporting organizations had teams but only half (33%) of them had team compensation systems, while Shaw et al. (2001) reveals that up to 70% of U.S. organizations are now using some type of team-based rewards.

We expect also that autonomy, as a non-monetary type of reward (Lawler, 1971) and satisfaction will be related in a predictable way. According to Zobel (1998), who considers compensation as a motivator capable to influence behaviour, if an employee is rewarded for certain behaviours or performance, he or she will be keener to repeat the same attitude or action. An employee can be motivated through either monetary or non-monetary forms of compensation. In the first case, the employees' performance is acknowledged through an individual performance-pay based contract or by implementing a team-based compensation system that shows how the sum of individual efforts influences the whole performance of the team. In the second case, autonomy, as an intangible incentive, can keep employees satisfied and later motivated to exert a certain effort required in their job.

My paper considers teams as individuals who work together for the accomplishment of a common goal set by a higher authority in the firm. This goal could be temporary, as in case of project or problem-solving teams or continuous, as in the case of production teams. An important contribution for the literature resides in the nature and richness of the data which comes from different industries and countries.

The aim of my paper is to develop a perspective that takes into account agency theory, equity theory and the theory of cooperation when analysing the effects of performance-based compensation and autonomy on satisfaction with pay in teams. Agency theory suggests that once we adopt high performance work practices we also have to adapt the compensation system. Moreover, it provides predictions on the effects of the rewards. From the equity theory it can be inferred that the discrepancy between the deserved or expected salary and the actual amount received could influence satisfaction (Lawler, 1971; Crosby, 1976; Ballas, Dorling, Shaw, 2007) while the theory of cooperation explains the effect of the new practices on employee perceptions of fairness and satisfaction.

Previous research took into consideration the roles of equity and fairness of payment systems (Adams, 1963; Adams, Freeman, 1976; Crosby, 1976; Frohlich, 2007; Goncalo, Kim, 2010) and their influence on satisfaction (Alexander, Ruderman, 1987; Aquino, Griffeth, Allen, Hom, 1997; Masterson et al., 2000; Tremblay, Sire, Balkin, 2000; Haar, Spell, 2009). However, two aspects from the previous studies require a better understanding of the relationship between team compensation and team-member satisfaction. Prior research has studied the relationship between perceived fairness with pay and job satisfaction (Donovan, Drasgow, Munson, 1998; Masterson et al. 2000; Haar, Spell, 2009; Casuneanu, 2010) but little is known about the specific effects of different types of compensation applied to team member satisfaction. Therefore,

in this study I aim to contribute to the compensation and satisfaction literature by looking at how individual performance pay and team-based rewards affect employee satisfaction with pay. The goal of this research is to investigate both similarities and potential dissimilarities between individual performance pay (IPP) and team-based rewards (TBR) in order to study their main effects on satisfaction with pay

Second, a limitation of the existent research refers to the data which was used. There are few recent studies with non-experimental and comprehensive data. Some articles based their findings on experiments (i.e. Greenberg; 1988; Goncalo, Kim, 2010), other results came from national random samples (Tremblay, Sire, Balkin, 2000 from Canada only; Harr, Spell, 2009 from New Zealand only; Casuneanu, 2010 from Romania only) or only from a specific industry (i.e. Gomez-Mejia, Belkin, 1989; Kirkman, Shapiro, 2000; Ramaswami, Singh, 2003). One reason why economists tend to be sceptical about laboratory data is that such experiments may not reveal accurately the true behaviour of workers. For one, the monetary incentives to perform well in experiments are usually very low, as compared to real life wages. Another worry is that the experiments refer to very particular settings which are not immediately translatable into real life settings. In this sense, survey data should be preferable.

Thus, in order to overcome these limitations my paper considers real data from across various industries and countries. The empirical analysis is based on data from the fourth European Working Conditions Survey (EWCS) conducted in 2005 by the European Foundation for the Improvement of Living and Working Conditions. The data from the EU (EWCS) Survey allows a more comprehensive picture on the European context in general and on the satisfaction of European employees in particular. It offers more interesting and complete information than an experimental study would give due to the fact that the data is provided by real employees in different countries and it encompasses various types of job titles ranging from elementary to managerial occupations.

Previous research also explored the role of autonomy (Lawler, 1971; Greenberg, 2006; Haar, Spell, 2009) when it comes to employee satisfaction or other positive work-related attitudes (i.e. cooperation). Karasek (1979) developed a model of job demands and job decision latitude and observed that stress associated with high job demands decreased employee satisfaction while simultaneous high job demands and high job decision latitude (autonomy) increased team-member satisfaction. Thus I infer that job satisfaction is influenced by job design. Furthermore, Prendergast (2002), Raith (2008) and Ortega (2009) contended that there is a positive correlation between autonomy and performance-based compensation due to the fact that complex jobs require more discretion and compensation based on performance “in order to take advantage of the employee’s specific knowledge” (Ortega, 2009). Nevertheless, previous literature was either theoretical (Prendergast, 2002; Raith, 2008) or

considered autonomy at the individual level (Karasek, 1979; Ortega, 2009). There are few studies that take into account the influence of autonomy at the team level. In order to fill this gap in the literature I consider in this study the role of both individual or task and team-based autonomy when analyzing their effects on employee satisfaction. Even if autonomy is seen as a non-monetary reward (Lawler, 1971), it may also have a latent influence on satisfaction with pay.

My research contributes to the literature by taking into account not only the type of compensation but also the level of autonomy that a team member enjoys when assessing team member satisfaction with pay as a function of perceived fairness of the rewards (Crosby, 1976). Autonomy is expected to work like a buffer which compensates for the potential injustice of the reward systems. Another contribution consists of analyzing simultaneously the roles of individual (task) and team autonomy.

Altogether, this research aims to contribute to the existing literature by examining different types of antecedents of satisfaction with pay in teams. The first type is represented by the form of compensation and is directly connected with the dependent variable, while the second type, autonomy, both individual and team-based, refers to a specific type of reward, a non-monetary compensation which affects satisfaction with pay.

The structure of the paper is presented as follows: in the next section I develop the theoretical framework and formulate the hypotheses of interest, in section three I describe the data, in the next part I focus on the results and in the last section I present the conclusions and implications for future research.

2. Piece rates, equity and agency theory

In this section, the reasoning behind the selection of performance-based compensation as an antecedent of pay satisfaction is described as predicted by both equity and agency theory. To start with, according to the equity theory, satisfaction with pay is a subjective function of both actual pay and several individual judgments, and thus individual performance pay has to be applied carefully by properly rewarding each member of the team. For instance, Crosby (1976) considered that employees may feel dissatisfied with their salary when there is a discrepancy between the outcome they want and what they receive, when they compare to somebody else who has more than they do (Kirkman, Shapiro, 2000), when past experience made them expect more than they now have, when future expectancies for achieving better outcomes are low (Cook, Crosby, Hennigan, 1977), and when they feel they deserve more. Additionally, Lawler (1971) argued that pay satisfaction is a function of the perceived discrepancy between current pay and the amount of pay that should be received. Through this amount he referred to the actual pay, wage history, and the perceived pay of referent others.

First, people tend to compare the amount of payment received with the expected payment. If team members feel they were unfairly paid, for instance they were paid less than what they considered based on the effort exerted, they can decide to lower their performance (Leventhal, 1976; Greenberg, 1988; Haar, Spell, 2009; Goncalo, Kim, 2010) or quit their jobs in order to end the inequity (Hom, Griffeth, Sellaro, 1984; Konovsky, Cropanzano, 1991; Fields, Pang, Chiu, 2000).

Second, workers may also feel inequity if they receive a lower compensation than their colleagues (Crosby, 1976; Kirkman, Shapiro, 2000). If a team member thinks that he or she exercised a certain level of effort that requires in exchange a specific amount of compensation he or she will expect it (Mueller, Iverson, Jo, 1999). The same idea that satisfaction with pay can come out from comparing one's compensation to another's is found in Ballas, Dorling and Shaw's research (2007). It was also suggested that distributive justice was obtained when individuals compared their inputs and outputs with those of another colleague and made fairness appraisals (Adams, Freeman, 1976). Likewise, Haar and Spell (2009) argued that equity is obtained when "the input/outcome ratio of the individual is equal to those of others compared with" (p.1829) and thus employees may decide to either lower or increase their amount of effort or change their perceptions about the work provided and rewards (Haar, Spell, 2009). Consequently, and in line with previous research, I consider satisfaction with pay to include perceived fairness of the rewards.

To sum up, team member satisfaction with pay depends on how fairly employees consider they have been compensated. Distributive justice, defined as the worker's evaluation of the "fairness of his or her rewards, given his or her inputs" (Mueller, Iverson, Jo, 1999, p.871) is connected to the equity theory (Adams, 1965; Haar, Spell, 2009) and, in a compensation setting, it refers to the reaction of the individuals to both the amount and the form of compensation received (Tremblay, Sire, Balkin, 2000; Haar, Spell, 2009). According to the equity theory, the greater the discrepancy between the amount employees believe they should receive and the actual amount they receive, the greater their tension or dissatisfaction (Lawler 1990; Livingstone, Roberts, and Chonko 1995). Specifically, the prediction of this theory is that employees prefer individual performance compensation as long as it is properly applied with respect to their expectations and through comparison to other team members.

However, if the manager does not observe this effort he would not compensate it accordingly (Holmstrom, 1982). And so, due to moral hazard, employees could feel dissatisfied and perform at a lower level leaving the managers with the free riding problem. In a team setting the application of individual performance compensation could negatively affect employees who may not perceive their goals as cooperatively linked and may tend to see their jobs and personal tasks as separated from those of their colleagues.

In theory, we should expect very different effects depending on the ability of the worker. For instance, a high-ability worker will be happy with individual performance pay and less happy with team performance incentives - the team is only as successful as its weakest link. Likewise, a low-ability worker should have the opposite preferences: happy with team incentives because team incentives give them the opportunity to free-ride at a low cost, not happy with individual performance incentives.

Worker heterogeneity was studied thoroughly in the literature with a special focus on its effects on productivity (Lazear, 2000; Hamilton, Nickerson, Owan, 2003; Burgess et al., 2009; Falk, Ichino, 2006; Bandiera, Barankay, Rasul, 2010). Moreover, “compensation in performance-pay jobs is more closely tied to both observed and unobserved productive characteristics of workers than compensation in non-performance-pay jobs” (Lemieux, MacLeod, Parent, 2009) and performance pay could generate higher wage inequality.

With respect to direct effects on satisfaction, scholars considered that distributive justice, as part of organizational justice, predicts job satisfaction (Greenberg, 1990; McFarlin, Sweeney, 1992; Martin, Bennett, 1996). Furthermore, literature also connected justice perceptions about payment received to job satisfaction (Moorman, 1991; McFarlin, Sweeney, 1992; Aquino, Griffeth, Allen, Hom, 1997; Donovan, Drasgow, Munson, 1998; Masterson et al. 2000; Colquitt et al., 2001; Haar, Spell, 2009). So it is crucial to apply a fair compensation system trying to avoid moral hazard and subjective interpretations in order to keep the workers satisfied with their salary. It is only when individual performance-based compensations are applied fairly or perceived to be following distributive justice rules that employees will present a high satisfaction with pay.

Another interesting fact revealed by the literature on piece rates is that high-ability workers could form a team norm that must be also achieved by the lowest-ability employees (Hamilton et al., 2003) or the rest of the team members who may feel pressure to reach a certain productivity level in order to receive a satisfactory salary. In keeping with previous research, due to complying with specific productivity levels and considering no moral hazard problems, I expect individual performance pay to increase employee satisfaction with pay. Consequently, in a team setting, if employees are properly rewarded individually, they will feel more satisfied with pay since it is easier to see and compare efforts and outcomes within a group. Therefore, the prediction of the agency theory, as well as the expectation of the equity theory, suggests that compensation based on individual productivity leads to increased pay satisfaction:

Hypothesis 1: The adoption of individual performance-based compensation leads to higher employee satisfaction with pay in teams.

3. Team-based rewards and cooperation

Among the many rules that people use to allocate goods and resources (Deutsch, 1985), two have received more emphasis along the time: the equity rule, described in the previous section, in which people are rewarded in direct proportion to their individual contribution (Adams, 1963; 1965), and the equality rule, in which all team members receive the same amount regardless of their individual contribution (Deutsch, 1975). When analyzing the effect of the salary type on satisfaction with pay, this paper take into consideration how distributive justice refers to the distribution of socially-valued goods and resources (Foa, Foa, 1974) and to the perceived fairness of the outcomes received (Frohlich, 2007; Goncalo, Kim, 2010).

Previous research presents contradictory findings regarding the relationship between team based rewards (TBR) and pay satisfaction: while it was argued that TBR could increase pay satisfaction, it was also believed that they may reduce pay satisfaction. In this section, the reasoning behind each view is described as predicted by the theory of cooperation and equity/equality theory. To begin with, following the assumptions from the theory of cooperation, employees working in a group would generally see their goals as cooperatively linked (Deutsch, 1949; De Dreu, 2007) and, knowing that their actions are also for the well-being of the team as a whole, they may prefer a compensation based on team performance. Team-member satisfaction depends on the perception of its members who may consider that being rewarded collectively would ultimately be beneficial for their own interests. Thus, I expect that employees working in a group would generally see their goals as cooperatively linked and be more satisfied when they receive a group-based reward.

From an equity/equality perspective, Folger and Cropanzano (1998) noted that “justice holds people together whereas injustice can pull them apart”. Moreover and in line with the theory of cooperation, Kirkman and Shapiro (2000) found that employees were more receptive to TBRs when they perceived they were treated fairly. Also, perceptions of fairness are likely to promote feelings of job satisfaction because of the attainment of expected rewards (Sridhar N. Ramaswami, Jagdip Singh; 2003). In line with this, Kandel and Lazear (1992) analyze the argument that Japanese firms enjoy team spirit because compensation is linked to overall profitability. Consequently, an equality rule (i.e. team-based compensation) facilitates team members to perceive their tasks as cooperatively linked and thus increase their motivation to work harder for a higher group reward. These arguments predict a positive relationship between group rewards and pay satisfaction because in a team setting people tend to perceive their goals as related from the beginning (through team cohesiveness). Furthermore, if there is distributive justice and moral hazard is low, team based rewards lead to higher pay satisfaction as employees

acknowledge that they work together for the accomplishment of a common goal which will later reflect in a common reward.

Empirical evidence regarding the relationship between performance-based compensation and satisfaction found that individual-based rewards contributed to less pay satisfaction than aggregate compensation (Gomez-Mejia and Balkin, 1989; Lee, 1996; Garza, 1998), thus confirming the theoretical predictions.

However, there is another standpoint in the literature which considers that team pay can lead to perceptions of inequalities about the payment received among the workers, and so it can hamper satisfaction. It was found that organizations that rate as successful did not eliminate individual rewards in favor of team rewards (Zobal, 1999). Nevertheless, previous research presents more and stronger arguments in favour of the positive relationship between group-based rewards and pay satisfaction. From the premises of the theory of cooperation and consistent with Kirkman and Shapiro (2000) findings that employees are more receptive to TBRs when they perceive justice and a fit between group based rewards and organizational changes, I expect that, in the case of TBR, employees would see their goals as cooperatively linked and thus be more satisfied:

Hypothesis 2: The adoption of team-based rewards increases individual satisfaction with pay in teams.

4. The role of autonomy

Previous research explored the connection between employee discretion and performance-based pay. Prendergast (2002), Raith (2008) and Ortega (2009) found a positive correlation between them due to the fact that complex jobs require more discretion and compensation based on performance “in order to take advantage of the employee’s specific knowledge” (Ortega, 2009). Furthermore, Barth, Bratsberg, Haegeland and Raaum (2008) assert that performance-related pay is prevalent in firms where workers have a higher degree of autonomy in organizing their work. In line with these findings, it was also asserted that when managers encourage employees to trust their own decisions and judgement there would be a certain level of satisfaction regardless of how compensation is distributed (Haar, Spell, 2009). Consequently, autonomy could provide a very good insight in understanding employee satisfaction with pay as a part of overall satisfaction. According to the equity theory, employees who were reassigned to higher status offices raised their performance as a response to overpayment inequity and those reassigned to lower status offices decreased their performance as a response to underpayment inequity (Greenberg, 1988). Moorman (1991) stated that “if employees believe they are treated fairly, they will be more likely to hold positive attitudes about their work and their work outcomes” (p. 845). Therefore, it is important to know which variables

influence individual satisfaction beyond the rewards system in order to balance its potential negative effects. Previous literature considered the potential mitigating role of non-monetary rewards which could compensate for low distributive justice like job autonomy (Lawler, 1971; Campion, Berger, 1990). It is considered that, if employees have more autonomy, they obtain more non-pecuniary rewards, and therefore, controlling for payment level, autonomy should have a positive effect on pay satisfaction. Moreover, Nguyen, Taylor and Bradley (2003) found that perceived job autonomy influences positively satisfaction with pay.

In keeping with previous literature, my research proposes to explore the role of both individual and team autonomy which may directly affect satisfaction with pay. There are several other arguments for using *individual autonomy* as an antecedent for satisfaction with pay. First, autonomy can be regarded as a non-monetary reward (Lawler, 1971) and so it can be positively linked to satisfaction as it has similar characteristics with the payment system. Second, past research considered satisfaction with pay as an important component of job satisfaction (Harr and Speel, 2009) which was found to be increasing with autonomy (Boffey, 1985) or the worker's control over how a job is done (Nguyen, Taylor, Bradley, 2003). Empirical evidence presents mixed results when it comes to the relationship between individual autonomy and job satisfaction. Sprigg, Jackson and Parker (2000) found no main effects for individual autonomy. However, a great amount of literature found individual autonomy positively related to job satisfaction (Hartline and Ferrell, 1996; Hartline et al., 2000; Hui, Au and Fock, 2004; Haar and Spell, 2009). Thus, indirectly, autonomy and pay satisfaction seem to be connected.

Additional support suggesting potential effects of autonomy was found in the model of job demands, job decision latitude and mental strain developed by Karasek (1979). He found that stressful jobs decreased satisfaction of team members unless correlated with high autonomy. Consequently, in the context of high autonomy, team members would feel satisfied as managers trust their judgement and their abilities (Haar, Spell, 2009) and perceive autonomy as a specific type of reward (Campion, Berger, 1990) that could compensate for the potential low level of distributive justice. On the other hand, in the case of low autonomy, since employees have less control over their work, they would be focused more on how rewards are distributed (Haar, Spell, 2009) and thus, the relationship between the performance-based compensation and pay satisfaction will be strictly determined by how management is applying compensation. For example, in a team context, using an individual performance pay system considered inappropriate due to moral hazard or personal judgements and without providing enough employee discretion could decrease individual satisfaction with pay.

Thus, taking into account the predictions from previous literature which regard autonomy as a determinant of job satisfaction and payment satisfaction as a component of employee satisfaction, I expect individual autonomy to influence positively satisfaction with pay:

Hypothesis 3: Individual autonomy increases satisfaction with pay in teams

Team autonomy can be considered a determinant of payment satisfaction as well. At the team level, individual autonomy is insufficient if it is not complemented by team autonomy.

Previous research argued that autonomy has to be “truly collective, distributed throughout the team so that each team-member must have both autonomy to act and the ability to influence others to act” (Spriggs, Jackson, Parker, 2000). Moreover, it was argued that team autonomy parallels individual autonomy (Thomas, Velthouse, 1990; Kirkman, Rosen, 1999).

There is also empirical evidence that group autonomy has a positive effect on job satisfaction in general, and payment satisfaction in particular. Scholars found that group autonomy was positively related to job satisfaction which included satisfaction with pay (Kirkman, Rosen, 1999; Spriggs, Jackson, Parker, 2000). Since team autonomy has been considered the team-level analogy of individual autonomy (Van Mierlo et al., 2006) I hypothesize:

Hypothesis 4: Team-based autonomy increases satisfaction with pay in teams

5. Method

The data that I use in this paper comes from the fourth European Working Conditions Survey conducted in 2005 by the European Foundation for the Improvement of Living and Working Conditions¹. This survey provides an analysis of the working conditions in the 27 countries of the European Union, in two candidate countries (Turkey and Croatia), in Switzerland and Norway.

In total, nearly 30.000 individual workers were interviewed in face-to-face interviews in their own homes between September and November of 2005, but I restricted the sample to employees who report working in a team. The unit of analysis is the individual and the observations are cross-national. The survey

¹ The source of the survey that provided my data it is available at: <http://www.eurofound.europa.eu/ewco/surveys> and it is based on a questionnaire containing a core of common questions, allowing meaningful comparisons to be made between this survey and previous editions. All interviews were conducted face-to-face in the respondent's own household; this was selected by starting from an assigned address and following a random walk procedure.

sampled the total active population of the respective nationalities of the EU member states, aged 15 and over, resident in the countries involved in the survey.

5.1. Dependent variable

As Crosby (1976) noted that *satisfaction with pay* is a function of both actual pay and several judgments that employees make such as comparisons to others, personal desires and expectations, satisfaction with pay is considered to include perceived fairness of the rewards. Therefore, satisfaction with pay was assessed using a single-item scale based on question q37b from the EWC Survey: "I am well paid for the work I do", coded 1= strongly disagree and 5= strongly agree. Respondents were asked to indicate on a 5-point scale how strongly they agreed or disagreed with the above statement. This measure was assessed based on the scale developed by Warr et al. (1979) which includes both intrinsic and extrinsic aspects of job satisfaction, such as pay. Considering pay a dimension of job satisfaction is also in line with Sprigg et al. (2000) and Green and Heywood (2008).

5.2. Independent variables and interaction effects

Individual performance pay was measured through a dummy variable based on question ef6b from EWC Survey: "What does your remuneration include: Piece rate or productivity payments?" coded 0= not mentioned, 1= mentioned.

The *team based rewards* variable was also measured through a dummy variable based on question ef6h from the same Survey: "What does your remuneration include: Payments based on the overall performance of a group?", coded 0= not mentioned, 1= mentioned.

Individual Autonomy was measured through an index variable which represents the mean of three dummy variables: whether or not the employee can decide on his or her methods of work, the order of tasks and the speed of work. It uses variable q24a,b,c from the survey.

Team autonomy was measured through a dummy variable based on question q26b_1a from the survey: "Do the members of the team decide by themselves on the division of tasks?" with levels 1 for those who answered "Yes" meaning high team autonomy, and 0 otherwise.

Interaction effects were measured by creating two variables: first, by interacting individual autonomy with PR and second, by multiplying team-based autonomy with TBR.

5.3. Control variables

Three sets of control variables were used to account for potential individual, organizational level effects and contextual effects. Thus, the variables I use are: age of the respondent (continuous variable), education (categorical variable ranging from 0 = no education to 6 = tertiary education, advanced level), gender of the respondent (dummy variable with value 0 for women and 1 for men), occupation title (categorical variable ranging from 1= elementary occupations to 10= managerial jobs), organizational size (categorical variable with 8 levels according to the number of employees), country (where the survey was conducted) and industry (in which the respondent activates).

The employees' attitude can also depend on the complexity of tasks that they have to develop and on their specific knowledge and abilities. Literature on specific knowledge (Prendergast 2002; Raith, 2008; Ortega, 2009) argues that employees with more complex jobs have more specific knowledge. As it is too costly for the firm to know which actions are optimal, it is preferred to use a performance pay scheme and let the agent decide which action to take. Therefore, in this research I control for occupation level that ranges from elementary occupations to managerial jobs.

In order to test the hypotheses, I estimate the following general employee satisfaction with pay (SWP) equation:

$$SWP = F(IPP, TBR, \textit{Individual Autonomy}, \textit{Team Autonomy}, \textit{Individual, Organizational, Contextual Characteristics})$$

6. Results

I started to analyse the data by observing the descriptive statistics among the main variables of interest: piece rates, team-based rewards, individual and team-level autonomy, age, gender, tenure and satisfaction with pay. Then, I test the hypotheses using ordered-logit regression analyses with two models: first, the basic model considers only the direct effect of the independent variables while the second model studies whether there is any interaction between the effects of autonomy and performance pay.

Table 1. Descriptive statistics

Variable	N	Mean	SD	Min	Max
1. Piece rates or productivity payments	13100	0.12	0.33	0	1
2. Team-based rewards	13046	0.06	0.24	0	1
3. Individual autonomy	14615	2.03	1.13	0	3
4. Team autonomy	14453	0.54	0.50	0	1
5. Age	14632	40.37	11.55	15	80
6. Education	14632	3.47	1.26	0	6
7. Gender	14632	0.51	0.49	0	1

8. Tenure	14632	9.85	9.80	0	60
9. Satisfaction with pay for team members	14548	2.99	1.20	1	5
10. Satisfaction with pay for other workers	9639	2.98	1.19	1	5
11. Satisfaction with pay for all employees	24470	2.99	1.20	1	5

Table 1 presents the descriptive statistics of the main variables of my research. For a better understanding this table summarizes the descriptive statistics mainly for employees working in teams. Only the dependent variable, satisfaction with pay, is studied both for the entire sample and for sub-samples of team-members and other employees. Piece rates (PR), team-based rewards (TBR), individual autonomy and team autonomy are the independent variables that influence employee satisfaction with pay in teams, while age, education, gender and tenure are control variables describing the individuals. What is interesting to observe is that respondents are generally satisfied with their payment (2.98) and PR and TBR are not very common as their means are around 0. Also, I see that the average individual autonomy is 1.13 representing about one third of the total potential. Team autonomy is more balanced as its mean is 0.54 and tenure in a company is around 10 years (9.85).

Table 2. Regression analysis for performance-based compensation and autonomy predicting satisfaction with pay in teams

Variables	Direct Effects (Step 1)	Direct and Interaction Effects: (Step 2)
Piece rates	1.1571*** (0.06)	1.2304** (0.12)
Team-based rewards	1.1494* (0.08)	1.1612 (0.12)
Individual autonomy	1.0938*** (0.02)	1.0985*** (0.02)
Team Autonomy	1.1391*** (0.04)	1.1408*** (0.04)
Individual Autonomy*Piece rates	-	0.9670 (0.04)
Team Autonomy*TBR	-	0.9808 (0.14)
Age	0.9977 (0.00)	0.9977 (0.00)
Individual Gender (Men)	0.8950*** (0.04)	0.8960*** (0.04)

	Education dummies	Yes	Yes
	Tenure	0.9927*** (0.00)	0.9927*** (0.00)
	Job title dummies	Yes	Yes
	Salary dummies		
	Salary 2:	0.9666 (0.08)	0.9661 (0.08)
	Salary 3:	1.0990 (0.09)	1.0987 (0.09)
	Salary 4:	1.3137*** (0.11)	1.3135*** (0.11)
	Salary 5:	1.5174*** (0.12)	1.5158*** (0.12)
	Salary 6:	2.0265*** (0.16)	2.0247*** (0.16)
	Salary 7:	2.3461*** (0.19)	2.3442*** (0.19)
	Salary 8:	2.7947*** (0.23)	2.7935*** (0.23)
	Salary 9:	4.2417*** (0.38)	4.2432*** (0.38)
	Salary 10:	6.7640*** (0.63)	6.7645*** (0.63)
Organizational	Size dummies	Yes	Yes
Contextual	Industry dummies	Yes	Yes
	Country dummies	Yes	Yes
Number of observations		11440	11440
	Pseudo R ²	0.0650	0.0650

Notes: The Satisfaction equation is estimated by O-logit

Standard errors are in parentheses

* p<.1

** p<.05

*** p<.01

Table 2 presents the results of the steps that I followed for testing the hypotheses. The satisfaction equation is estimated by using the ordered-logit model. I consider the effects of the independent variables: PR, TBR, individual and team-based autonomy and the effects of the control variables on satisfaction with pay in teams. The salary categories control implicitly takes care of some of the worker heterogeneity in terms of skill. In the first stage, I analysed the direct

effects and in the second stage I added two interactions: first, between individual autonomy and piece rates and the second between team autonomy and team-based rewards. In the regression analysis, a selected sample is used in estimation. The difference in the number of observations from the selected sample used in estimation (11440 observations) and the observations from the descriptive statistics table comes from the missing data: some respondents did not know how to answer and others refused to respond to certain questions from the survey. Thus, in Table 1 we have a higher number of observations than in the regression which uses more variables with missing data.

The first conclusion from Table 2 is that PR influence positively satisfaction with pay, its coefficient of odds ratio being 1.1571 ($p < .01$) in the first stage and 1.2304 ($p < 0.05$) in the second. This finding supports the first hypothesis, confirming that the adoption of piece rates or other productivity payments leads to higher employee satisfaction with pay in teams. However, I found little support for the second hypothesis as TBR was found significant only in the first stage and at $p < 0.1$. When interaction effects are added, the performance based on the overall achievement of a group loses significance and this result does not support Hypothesis 2 for $p < 0.05$ team-based rewards do not have a significant influence on satisfaction with pay in any model.

Remember that Hypothesis 3 asserts that individual autonomy affects positively the team-member satisfaction. Results from Table 2 confirm this hypothesis as the coefficient of individual autonomy is positive and significant in both stages: 1.0938 ($p < .01$) and 1.0985 ($p < .01$). As for the team level autonomy I notice that its effect is also positive and significant in both models with values of 1.1391 and 1.1408, both at $p < .01$, supporting Hypothesis 4. Interactions between autonomy and performance pay are introduced in order to investigate the allegation that the performance pay can have a differentiated effect on job satisfaction depending on whether there was significant autonomy or not. However, when interactions between first, individual autonomy and PR and second, between team autonomy and TBR are introduced, their coefficients are found insignificant suggesting that autonomy does not have a different effect depending on whether pay for performance incentives are also available or not.

Consequently, piece rates (or other productivity payments), both individual and team-based autonomy, are essential in order to keep team members satisfied with their payment. While the compensation type is a more evident determinant of satisfaction, it is interesting to observe how autonomy still has an important effect even after I controlled for salary dummies for each category. As expected, salary categories are significant but not sufficient. The significance of each salary category is compared to the lowest salary level, salary 1. In the regression, I find that all salary dummies from salary 4 to salary 10, representing medium-high salary bands, have a positive and significant effect on satisfaction with pay. Thus, I observe that compensation magnitude is an

important tool when it comes to employee satisfaction but it has to be applied carefully and along with the proper compensation type and amount of autonomy. This happens because the form or type of compensation, especially piece rates or other productivity payments are closer to the employee perception of fair payment as it is easier to measure one's work. Therefore, if employees feel less satisfied with their salary band they could come to a better understanding of the situation by considering their direct and quantifiable effort. Moreover, when managers offer employees discretion, they may regard it as a non-monetary type of reward and consequently one can balance a low-medium salary level with freedom of choice regarding methods of work, division of tasks or spare time.

7. Conclusions and discussion

The purpose of this study is to analyze the antecedents of satisfaction with pay in teams by focusing on performance pay and autonomy. In order to study the hypotheses of interest I considered both piece rates/productivity payments and team-based rewards and also two types of autonomy: individual and team-based. Data comes from the fourth EWCS and I employed ordered logit regression analysis.

Several important findings emerge from this study. First, my results show that piece rates or other productivity payments are associated with higher pay satisfaction, offering support to Hypothesis 1, while team-based rewards do not influence satisfaction with pay, meaning that hypothesis 2 was not supported. These findings are in line with previous research which considered that employees who experience distributive fairness are likely to indicate greater satisfaction (Moorman 1991; Netemeyer et al. 1997). Haar and Spell (2009) contended that "understanding the links between organizational justice and the distribution of employee reward system is vital for motivating employees" (p.1830). Team-based rewards were found insignificant when it comes to satisfaction with pay. The explanation may be that people can have difficulties in perceiving group boundaries and consequently they fail to see the benefits of this type of reward.

Secondly, with respect to autonomy, the results show that both individual and team-based discretion are positively associated with payment satisfaction, as predicted by hypotheses 3 and 4.

The coefficient of team autonomy (1.1408 in step 2) is the highest coefficient of all the significant variables suggesting that team autonomy is an important tool for keeping employees satisfied. It looks like, irrespective of the amount or type of compensation, employees with high autonomy (individual or group-based) consider themselves more satisfied or "fairly" paid for what they do. Thus, if the reward system lacks justice due to moral hazard (Holmstrom, 1982) or other subjective factors, at least autonomy can compensate for it and keep team-members satisfied with what they receive according to the job done.

We have to remember the specificity of this study which uses as dependent variable the answer to the question “I am well paid for what I do”. This comprises two parts: the direct or evident one which refers to the fairness of the rewards, and the less obvious one which considers other non-monetary benefits.

7.1 Implications, limitations and future research

This study presents some limitations that have to be looked at carefully. First, this research is a cross-sectional analysis; there is only one period of time, between September and November 2005. It would be interesting to study if the findings change when we conduct a time series analysis. The second limitation of this study is due to data availability: the survey does not offer precise information about piece rates or productivity payments so one can infer that they are either individual or group-based. However, the survey has another specific question, ef6h, which refers only to the compensation based on group performance so one can assume that the question about piece rates and other productivity payments (ef6b) refers to individual based rewards. But this is not clearly stated in the survey. For future research, it would be interesting to see the exact percent that corresponds to group compensation and to compare it with the percent for individual performance pay. Another limitation refers to the self-reported subjective data on the workers described satisfaction. These data are as reliable, or as unreliable, as laboratory experiments. Nevertheless, we should still be very interested in analysing this survey data because it gives us a different angle and a different perspective regarding various real-life settings and preferences.

Finally, the contribution of this study demonstrates that both individual and team-based autonomy influences positively payment satisfaction and perceived fairness in teams. Moreover, it looks like team autonomy has a bigger effect on our research variable, with a coefficient of 1.1408 compared to 1.0985 of individual or task autonomy.

Taken together, my results imply that both productivity-based rewards and autonomy are important tools when it comes to determining employee satisfaction and managers should know when to introduce rewards based only on individual merits so as to keep their workers motivated and when to give employees autonomy in order to compensate for potential fairness shortcomings in the payment system.

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Appendix

Table 3. Variable definition and structure

Variable Name	Definition	How it becomes operational	Expected effects
Age	The age of the respondent measured in years	Control variable with real values from 15 to 80 years. -uses variable hh2b from the survey	Control variable - individual
Gender	The gender of the respondent	Dummy variable with value 0 for woman and 1 for man. -uses variable hh2a from the survey	Control variable -individual
Autonomy: -Individual Autonomy (ia) -team-level autonomy	-individual autonomy describes the extent to which the respondent has autonomy in decision-making about his own work. It is an index that comprises three variables which the employee can control: his methods of work, the order of tasks and the speed of his work -team autonomy describes whether or not the team can decide by itself the division of tasks	Independent variables -with ia is expected that if the employee can decide upon his methods of work, the order of tasks and the speed of work he will be more satisfied - ia uses variable q24a,b,c from the survey - team autonomy uses variable q26b_1a from the survey	We expect that the more autonomy a worker or a team has in decision-making the higher job satisfaction.
Nationality (country)	The respondent country of origin	Dummy variables with values for the nationality of the respondent -uses variable country from the survey	Controlling for heterogeneity in nationality - contextual
Type of Industry	In which industry activates our respondent	Dummy variable for different industries -uses variable nace11 from the survey	Control variable - contextual
Job Tenure /experience (tenure)	Number of years a respondent has been employed in his/her present main job	Control variable with values in real years at the current company -uses variable q2d from the survey	Control variable - individual
Occupation	Job title	Dummy variable with for 10 different categories of occupation	Control variable, individual

		-uses variable isco from the survey	
Type of Compensation	The type of compensation that the employee receives	Independent variable with vales: -Individual performance pay (PR): variable ef6b from the survey -Payment based on the overall performance of a group (TBR): variable ef6h from the survey	Independent variable -PR increases job satisfaction - payment based on the overall performance of a group increases job satisfaction
Education (edu)	The highest level of education completed by the employee	Dummy variables for 7 different levels of education -uses variable isced from the survey	Control variable -individual
Size of the organization (size)	Number of employees in the company	Dummy variables for 7 different sizes -uses question q6	Control variable - organizational
Salary	Average net monthly income: in the fourth <i>EWCS</i> pay was measured by asking the respondents to position their usual monthly earnings in their main paid job on a 10-point scale corresponding to the 10 income deciles in each country. Thus the starting and ending points from the bands were different depending on the country.	Dummy variable for 10 different income levels -uses question ef5 from the survey	Control variable - individual
Employee Satisfaction with Pay	Payment satisfaction of team members: “I am well paid for the work I do”	Categorical variable, which uses a scale from 1 to 5, 1 meaning that the employee strongly disagrees which this affirmation, 2 that he or she disagrees, 3 neither agree nor disagree with the affirmation, 4 he or she agrees and 5 strongly agrees -uses variable q37b from the survey	Dependent variable