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CONTRACT FRAME AND PARTICIPATION: MITIGATING DISADVANTAGES OF PENALTY CONTRACTS

Research paper

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Abstract

Contracting is an important aspect of IT governance and control. This aspect involves the manner in which goals are set, their achievements rewarded and penalized. In the context of service level agreements it has been shown that contracts that involve penalties have positive effects on individuals' effort and negative effects on individuals' attitude such as fairness perception. The negative effects of penalty clauses are a likely reason why they are rarely found in contracting with individuals. Our study was motivated by the question whether negative effects of penalty contracts can be mitigated. In an experiment we found that controllee participation can mitigate such negative effects. This implies that controllee participation is even more important in the face of penalty contracts in order to maintain high fairness perception levels.

Key Words: IT governance, contract framing, fairness perception, participation.

1. Introduction

Penalty clauses are used in business-to-business contracting such as service level agreements to capture outsourcing arrangements that reflected an estimated \$325 billion market in 2013 (Gartner Group, 2009, Goo et al., 2009, for a review see Fehrenbacher, 2016). However, penalty clauses are rarely used in contracting with individual employees. This analysis discusses reasons for this asymmetry and explores a mechanism to mitigate potential negative effects of penalty contracts on an individual basis. As such, this study, in part, responds to a call by Wiener et al. (2016) to study negative socio-emotional consequences of controls in information systems.¹

Contracting is an important element of IT governance and it is linked to the manner in which controllers set goals, and controllees' achievements are rewarded and sanctioned. It is integratively associated with a variety of core IS capabilities organizations need to consider (Willcocks et al., 2006, Feeny and Willcocks, 1998). Still, contracting mistakes are frequently stated to be part of the reason why outsourcing projects fail (Goo et al., 2008). A better understanding of contract framing effects could help to reduce mistakes in IT governance related to contracting and control. Our results are particularly interesting for IS outsourcing contexts, because "outsourced projects are dominated by outcome controls" (Choudhury and Sabherwal 2003, p. 291) that include measuring of target achievement and consequential incentives and sanctions. The importance to study effects of penalty contracts on the individual level gets magnified in light of the argument that regularly used firm-level penalty clauses can also trickle down to the individual level (Fehrenbacher, 2016).

At the individual level two influential theories predict the same preferences for bonus-framed and penalty-framed contracts. Both, prospect theory (Kahneman and Tversky, 1979) and theory of

¹ In line with Wiener et al. (2016), Kirsch (1996), Ouchi (1979) controls are defined to be any attempts to align individual behaviour with organizational objectives.

reciprocity (Rabin, 1993) would predict that individuals prefer bonus contracts over penalty contracts. However, the two theories describe different mechanisms to influence employee effort. Whereas prospect theory would predict an effort increasing effect of penalty contracts as compared to bonus contracts, theory of reciprocity would predict an effort decreasing effect (Rabin, 1993). These contradictory effects are supported by Hannan et al. (2005). The difference in the causal mechanisms of the theories can be attributed to fairness. Theory of reciprocity builds largely on feelings of fairness whereas prospect theory does not. As such, theory of reciprocity would predict a reduced feeling of fairness in penalty-framed contracts (as compared to bonus framed contracts) that leads to reduced effort. Thus, feelings of fairness are important to manage because they can inhibit the expenditure of effort. There is evidence that suggests positive effects of fairness perception directly for employee effort (Libby, 2001) or more indirectly through corporate citizenship behaviour (Skarlicki and Latham, 1996). Thus, the negative effect of a penalty context on fairness perception might be a major reason why penalty contracts are almost non-existent in simple employee—firm relationships (Luft, 1994).

This study is guided by the question whether feelings of unfairness can be reduced in the face of penalty frames. More specifically, we investigate whether subordinate participation can mitigate the negative effect of penalty framed contracts on fairness perception. This could be important to achieve in light of the documented effort and commitment increasing effects of penalty contracts (Hannan et al., 2005; Church et al., 2008; Fehrenbacher 2016). It is further important because of the manifold positive effects organizational fairness perception has. It has been described to have a positive effect on performance (Libby, 2001), organizational citizenship behaviour (Skarlicki and Latham, 1996) and organizational commitment (Levy and Williams, 1998, Alexander and Ruderman, 1987, for a review see Cohen-Charash and Spector, 2001).

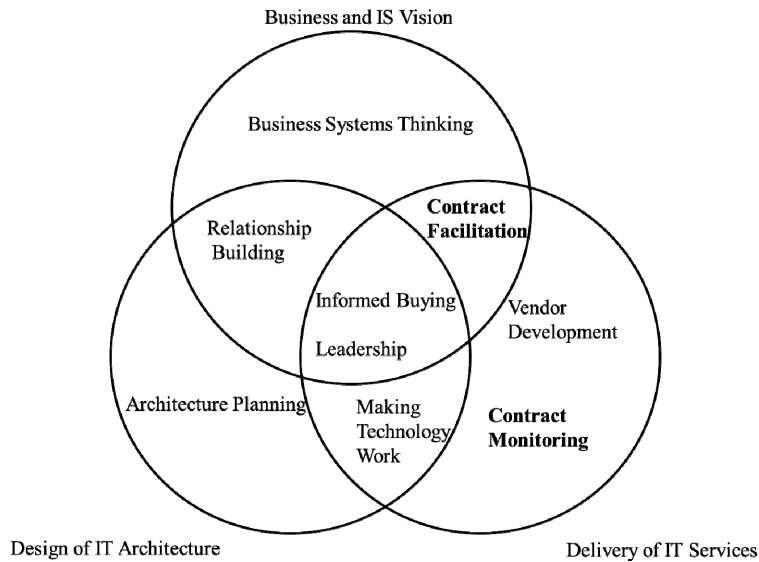
We conducted a 2 x 2 fully crossed between participant experiment with contract frame (penalty vs. bonus) and participation (no vs. yes) as the manipulated variables. Participants are asked to assume the role of a management consultant who does project-based consulting (as for example IT consulting). Our contributions to literature are three-fold. First, our research partly responds to a call by Wiener et al. (2016) to study control enactment in information systems. Control enactment regards the interaction of the controller (source of control e.g. supervisor, service recipient) with the controlee (target of control e.g. subordinate, service provider) to put a portfolio of controls into practice. We demonstrate that interaction in form of participation offered to the controlee can have positive effects. This interaction can provide a mechanism that can help to overcome negative effects of penalty framing that is regularly used in IS sourcing. Second, at a theoretical level, our results provide evidence that contract-framing and participation are complements. Management control (MC) “practices are complements when benefits of one MC practice increase with the use of (some) other MC practice” (Grabner and Moers, 2013, p. 412). The effort-increasing benefits of penalty-framed contracts increase with the use of participation that increases related fairness perception. Third, in additional analyses we evidence perception of control as a process-based influence from participation to contract fairness perception thereby supporting the applicability of the control-mediated theories of fairness. As such, we contribute to the IS project control literature in starting to fill-in a gap on “socio-emotional consequences of control activities” (Wiener et al. 2016, p. 743).

The remainder of the paper is structured as follows. The following section provides the background literature and hypotheses development. The subsequent section introduces the methods used, followed by the results and the discussion.

2. Background Literature and Hypothesis Development

In IT governance the question of contracting with other entities and individuals is of particular concern (Willcocks et al. 2006, Feeny and Willcocks, 1998). Contract facilitation and contract monitoring are two of the nine IS core capabilities that focus on contracting. They enable the implementation and alignment of the business and IS vision and the delivery of IT services (see Figure 1). Effective contract monitoring involves developing and managing appropriate performance standards for the contracting parties, holding the contracting entities accountable against those performance standards, and evaluating the performance continuously. Contract facilitation aims at

ensuring the success of contracts for IS services. Such a careful contract management is important because arrangements for IS service delivery are complex and can be manifold. It aims at facilitating the interaction between parties that are captured in contracts (vendor – user, service provider – service recipient). It has a coordination purpose and is action-oriented (Feeny and Willcocks, 1998). This research examines how actions can be influenced by contract management. We argue that contract management can be improved when purposefully using contract framing and participation in contracting. Both, framing and participation has been employed in IT management. Our focus is on their interactive effect.



Note: Bolded text indicates core IS capabilities that are informed by this analysis in particular (adapted from Willcocks et al., 2006, Feeny and Willcocks, 1998).

Figure 1. *Nine IS core capabilities and Focus of Analysis*

Effects of contract framing can be theorized using prospect theory. According to prospect theory, changes in wealth perceived as losses affect individuals subjective utility to a greater extent than changes in wealth perceived as gains (Kahneman and Tversky, 1979). Consequently, individuals are expected to work harder to avoid a penalty than to achieve a bonus of an equivalent monetary amount. Empirical findings support that individuals select a higher level of costly effort to avoid a penalty than to receive a bonus of an equivalent monetary amount (Hannan et al., 2005, Church et al., 2008). Despite this effort enhancing effect, penalty contracts are almost non-existent in employee-firm settings. In inter-firm relationships penalty clauses are regularly used if one party does not meet agreed standards (Goo et al., 2009). Thus, penalty contracts seem to have decisive disadvantages as compared to bonus contracts at least at the individual level.

One disadvantage might be that penalty-framed contracts have informational shortcomings, such that they do not lead to the optimal incorporation of environmental signals. Frederickson and Waller (2005) find that bonus-framed contracts as opposed to penalty-framed contracts facilitate information use. Another important disadvantage is likely to be the role of individual preferences and fairness. When employees are asked to state their preferences between penalty-framed contracts and bonus-framed contracts that are economically equivalent, they prefer bonus contracts over penalty contracts (Luft, 1994). When asked to rate its perceived fairness penalty contracts tend to be perceived as less fair (Hannan et al., 2005). These preferences can be explained by prospect theory (Kahneman and Tversky, 1984), where greater emphasis is placed on penalties (or losses) than gains (or bonuses) of the same strength.

The importance of the role of fairness perceptions and their positive effects for organizations have been acknowledged in the literature (Libby, 1999, Chang et al., 2008, Bol, 2011, Masschelein et al., 2012, Miller et al., 2013). Fairness perceptions has been shown to be associated with contract choices (Miller et al. 2013), activity-based costing information sharing (Masschelein et al. 2012), transfer price negotiations (Chang et al., 2008) and technology acceptance (Chiu et al., 2009). It is agreed

upon that high levels of perceived fairness strengthen incentives and subordinate motivation (Bol, 2011). Further, the intention to take an opportunistic action is more strongly influenced by fairness perceptions of this action than by the presence of incentives and opportunity to do so (Cohen et al., 2007). Another stream of literature suggests that individuals who perceive their organization as fair show more responsible organizational citizenship behaviour (Skarlicki and Latham, 1996; Cohen-Charash and Spector, 2001) and are more committed to an organization (Levy and Williams, 1998, Alexander and Ruderman, 1987).

These positive effects of employee fairness perceptions are likely strong deterrents from introducing penalty-based contracts on an individual basis, because they are perceived less fair than bonus-based contracts. Our first hypothesis expresses the notion that penalty contracts are perceived as less fair.

Hypothesis H1: Individuals working under a penalty contract perceive their contract as less fair than individuals working under a bonus contract.

Since penalty contracts can induce higher effort levels than bonus contracts, we examine how fairness perceptions can be managed under penalty contracts. As such we test whether negative fairness consequences of penalty frames can be mitigated. More specifically, we argue that subordinate participation under penalty contracts can work against negative fairness perceptions of penalty contracts. Such participation may attenuate negative effects of penalty-framed contracts on fairness perception.

“Participation is a concept used to describe the extent to which a subordinate is allowed to select his own courses of action” (Milani, 1975, p.274) and to describe influence-sharing between subordinates and superiors in a hierarchical context (Mitchell 1973). In the information systems literature user participation is regarded as an important factor for the success of information systems and is embedded in system development methodologies such as joint application design (JAD) and participative design (PD) (Anderson and Crocca, 1993, Carmel et al., 1993, Lin and Shao, 2000). Participation in system development can enhance user acceptance, understanding about the system, knowledge about the organization, and overall system quality (Ives and Olson, 1984, Lucas, 1974).

In accounting, a significant body of literature on participation is associated with budgeting. This is because of positive effects attributed to participation in budgeting. Organizations are expected to reap higher benefits when letting employees participate in the budgeting process (Argyris, 1952). Such benefits have been associated with attitude towards the job, the supervisor and the company (Milani, 1975, Magner et al., 1995), budgetary slack and performance (Fisher et al., 2000). Moreover, participation in the budgeting process has been associated with increased fairness perceptions (Libby, 1999, Libby, 2001).

Thus, participation can take numerous forms (Argyris, 1952, Anderson and Crocca, 1993, Carmel et al., 1993, Lin and Shao, 2000). It is clear that participation can only have an effect when the subject of participation is closely related to activities that are important. We regard elements of participation in the design of performance evaluation. We argue that such participation can increase fairness perception of the associated contract even under conditions of penalty frames. Performance evaluation is part of a contract that involves variable pay and influences whether and how much variable pay service providers receive.

Participation in constituting processes hands control to involved entities. Such control over processes has been associated with fairness in the procedural justice literature (Folger, 1977, Houlden et al., 1978, see Lind and Tyler, 1988 p. 203 ff. for a review).² The literature suggests that increased control leads to enhanced fairness judgments. In this literature, a distinction is typically made between control via opinion or value expression, which is referred to as process control or voice, and control via selection or veto of decision options, which is termed decision control or choice.³ Control-mediated theories of procedural justice suggest that permission of voice or choice for those affected by the

² This literature originates from law scholars which is one reason why the term ‘justice’ is often used. We use the terms justice and fairness interchangeably. Thibaut et al. (1974) in their account about ‘Procedural Justice as Fairness’ support the close nature of this terms, in the sense that when the principles of justice are agreed to.

³ Process control and decision control are the terms used most frequently in writings about legal and dispute resolution procedures (Houlden et al., 1978), and voice and choice are the terms used most frequently in writings about organizational and allocation procedures (Folger, 1977).

decision is seen as fair because voice and choice is seen as a form of individual control that can be used to obtain favourable outcomes (Brett and Goldberg, 1983) or equitable outcomes (Thibaut and Walker, 1978). Feeling of control over outcomes is the central part of control-mediated theories. The theory was developed in the justice literature. It remains an empirical question whether this theory is conditional upon contractual framing.

Consider an employee who has the opportunity to choose *ex-ante* between different ways of how his/her performance is evaluated *ex-post*. The employee knows that performance evaluation is an important part of determining variable pay and that variable pay has been agreed with the firm in the contract. Control-mediated theories would predict that, he/she perceives higher control over the decision making process and thus he/she perceives higher procedural fairness of performance evaluation. Since performance evaluation is an important part of determining variable pay, the employee has more control over procedures related to the contract if he/she can determine the performance evaluation procedure.

Consequently, allowing employees to decide between different performance evaluation procedures can be expected to lead to increased fairness judgments of related contracts. The notion is that when individuals participate in determining how outcomes associated with a contract are determined, they perceive a contract as fairer.

Cropanzano and Folger (1991) suggest a two-component model that considers not only the control over a process, but also accompanying factors. They break down perceptions of fairness into two components. One component captures an individual's perception of having received an unfavourable outcome, e.g. in our case a penalty-framed contract. The second component captures factors accompanying the unfavourable outcome, e.g. participation or no participation in the way performance is evaluated. If the factors associated with the first component are fair (bonus contract frame), the second component is less likely to influence individuals' actions. If the events associated with the first component are unfair (penalty contract frame), the second component is more likely attended to by the subordinate.

Thus, if the subordinate perceives the contract to be fair (i.e. bonus-framed contract), no further preference adaption is made and the process by which performance evaluations are determined will be largely ignored for fairness evaluations. On the other hand, if the contract is perceived to be unfair (i.e. penalty-framed contract), subordinates may adapt their preference according to the process that is used in the contract to evaluate performance. Even if the participation in performance evaluation is not associated with the contract framing, but is associated with the process of evaluating, fairness perceptions of the compensation contract are adjusted upwards if individuals participate and have control.

This leads to the expectation that the relationship between participation and fairness perceptions is conditional upon the contract frame individuals face. Since bonus contracts tend to be preferred by employees and are considered as fair, the perceived fairness of a contract associated with a bonus is high with and without participation in performance evaluation. However, since penalty contracts tend to be perceived unfair, participation in how performance is evaluated increases fairness perceptions of the contract associated with it. In synthesis, following from the two-component model by Cropanzano and Folger (1991) as explained above, the interaction hypothesis is formally stated as follows. Figure 2 Panel A visualizes this interactive expectation.

Hypothesis H2: When subordinates receive a penalty-framed contract without participation, fairness perceptions are lower than when subordinates receive a bonus-framed contract or are presented with a participation opportunity.

3. Method

3.1. Research design

A controlled laboratory experiment using a fully crossed 2 (penalty vs. bonus) x 2 (no participation vs. participation) experimental design was conducted. Participants were presented with a case in which they were asked to assume the role of management consultants. The work of management consultants is mostly project based and the case thus is in line with a recent call to study 'temporary

endeavours such as projects' in regards to questions on information systems control (Wiener et al., 2016, p. 741). The case information on the company and the performance evaluation types and measures was adapted from Cheng and Coyte (2014). Participants were asked to state their preferences as if they were on the job based on the information provided to them.

Participants were randomly allocated to the treatments. The no participation condition was alternated between two versions: a version in which participants were evaluated based on a formula-based scheme (version A) and a version where participants were evaluated according to a subjective scheme (version B). This was necessary because participants in the participation treatment could choose between one of the schemes.

3.2. Participants

A total of 181 participants from a second year undergraduate introductory business information systems class and a postgraduate enterprise systems class volunteered to take part in the experiment. The sample is considered appropriate for the task at hand, because our student sample is trained, the focus is on relative differences, and manipulation checks were performed (see below) (Guala, 2005). Similar samples have been used in other experimental information systems studies (Fehrenbacher and Djamasbi, forthcoming, Fehrenbacher and Tracy, 2016, Fehrenbacher, forthcoming). Thirteen participants failed to complete one or more of the necessary questions leaving a final usable sample of 168 (66 males, 102 females; 108 undergraduates, 60 postgraduates). On average participants were 21.1 years of age and reported an average of 10.6 months of full-time work experience. Participants received credit points for their studies upon completion of the experiment. Alternatively, to gain these credit points, participants could have completed a different task.

3.3. Independent Variables

The manipulated independent variables were contract framing (penalty vs. bonus) and participation in the performance evaluation process (no vs. yes). In the bonus condition of contract framing the contract consisted of a base salary of 100,000 HVU (hypothetical currency) and a variable annual bonus of up to 20,000 HVU. In the penalty condition of contract framing the contract consisted of a base salary of 120,000 HVU and a variable annual penalty of up to 20,000. The numbers used in the experiment were the same as in Chang et al. (2013) and followed the rationale that both contracts are economically equivalent (disregarding time value of money), i.e. a subordinate receives 100,000 HVU if performance evaluation is low and receives 120,000 if performance evaluation is high for both the bonus and penalty contracts. The only difference between the two contracts is the variable component that is a bonus component in one contract and a penalty component in the other contract.

Participation in the performance evaluation process was manipulated by giving participants choice or no choice between a formula-based scheme and a subjective weighting scheme. Performance evaluation includes a variety of variables (setting of measures, definition outcomes or timing issues). In IT governance it can be part of contract monitoring activities (Willcocks et al., 2006, see Figure 1). We focus on weighting schemes, i.e. how performance measures are weighted amongst each other. Allowing for flexibility in the weighting of performance measures *ex-post* by the superior (subjective weighting scheme) or specifying the weighting of performance measures *ex-ante* (formula-based weighting scheme) is a design choice principals can specify in a contract (Gibbs et al., 2004). Since this design can complement penalty-framed as well as bonus-framed contracts, we use it to investigate whether employee participation in the way performance measures are weighted influences fairness perception of contracts.

3.4. Dependent Variable

The primary dependent variable asks for the overall fairness perception of the compensation contract (How fair do you perceive your compensation contract?). Participants were asked to rate between 1 = Unfair and 7 = Fair. In our supplementary analysis we test a causal model using several mediating variables. These mediating variables are all measured on scales from 1 to 7 and are fairness of variable component (How fair do you perceive your bonus/penalty-based variable component of your compensation contract? 1 = Unfair, 7 = Fair), fairness of weighting scheme (How fair do you perceive

your weighting scheme of the performance areas? 1 = Unfair, 7 = Fair), control over weighting scheme (How much control did you perceive over the weighting scheme of the performance areas? 1 = Low Control, 7 = High Control), feeling of success (If your performance evaluation is good, how strong would be your feeling of success when you (do not) receive the full bonus (penalty)? 1 = Low, 7 = High). Below in the supplementary analysis it is discussed why these additional variables were captured.

3.5. Experimental Procedures

Participants were seated in front of computers in a behavioural laboratory of a large university. The computers were separated from each other with separation walls. Each session contained up to eight participants. The instrument is described in the following.

Participants were asked to complete a case study and state preferences as if they were on the job. They were informed that for the case study a hypothetical currency is used that is termed Hypothetical Value Unit (HVU). Two attention checks associated with this currency were conducted through-out the course of the case study (see below). On the subsequent screen they were asked to recall the abbreviation of the hypothetical currency used in the study and were asked to choose from a list of six options (attention check 1). They could only proceed once they had selected the correct abbreviation, but had unlimited trials. Then participants received information on their role and are asked to assume the role of a management consultant at Alpha Consulting for the purpose of this study. The company's goal and its performance measures were described as follows: The overall goal of Alpha Consulting is to increase its fee revenue from clients. In line with this, the performance as a management consultant at Alpha Consulting is evaluated based on the following four areas: Billable hours (total number of work hours you charged to clients this month); Average billing rate you charged to your clients this month (HVU); Total revenue from new project work requested by your clients this month; Evaluations by your clients (based on survey ratings of your performance this month).

These measures were later used in a formula-based manner or in a subjective manner to evaluate the consultant by the supervisor (depending on the treatment). With regards to the supervisor they were informed that the supervisor evaluated the performance on the respective four areas against other management consultants. Subsequently, the first treatment was performed. In the bonus treatment the consultant's base salary consisted of a base salary of 100,000 HVU and a variable annual component of up to 20,000 (bonus). In the penalty treatment the consultant's base salary consisted of a base salary of 120,000 HVU and a variable annual penalty of up to 20,000. The level of the variable payment depended on the performance in the four areas described previously.

To confirm participants' understanding they were subsequently asked how high the highest potential annual bonus or penalty was as specified in the contract and were asked to choose the correct option (= 20,000 HVU) from a list of seven options (attention check 2). Once participants passed the attention check, information was given how the performance measures could be used in the company to evaluate the overall performance that influences the level of the variable component of the compensation contract. A: the measures could be used in a formula based scheme or B: the measures could be used in a subjective scheme. Then the second treatment was performed. In the no participation condition participants were told that they were evaluated based on either the formula-based scheme (Version A) or the subjective scheme (Version B). In the participation condition they were told that they can choose whether they want to be evaluated between the formula-based scheme or the subjective scheme.

4. Results

4.1. Manipulation Checks

A total of 31 participants failed to pass the manipulation check question on the contract frame manipulation (Was your contract based on a bonus or penalty? Answer: Bonus/Penalty). A total of 53 failed to pass the manipulation check question in the choice manipulation. (Did you select between a subjective and a formula-based weighting scheme? Answer Yes/No).

We included the manipulation check variables (0, pass; 1, fail) as covariates in our ANOVA model we describe below and ran an ANCOVA. Both manipulation check variables are not significant (Contract Frame Manipulation Check: $df = 1, F = .66, p < .42$; Choice Manipulation Check: $df = 1, F = 2.06, p < .16$). Thus, the failures may indicate some noise in the data, but do not bias the results. Henceforth, we will use the whole sample to test our hypothesis. In non-tabulated analysis we conducted the ANOVA and contrast tests described in the hypothesis testing section below also with a sample including only the manipulation check passes. In this non-tabulated analysis all significant relationships reported below are at least significant at the 0.05 level (one-tailed) using the reduced sample. Below we report the results using the full sample of 168 participants. Significance levels are evaluated two-tailed if not stated otherwise.

4.2. Tests of Hypotheses

Hypothesis 1 predicts that individuals working under a penalty contract perceive their contract as less fair than individuals working under a bonus contract. Results for this hypothesis are reported in Panel B of Figure 2 and Panel A of Table 1.

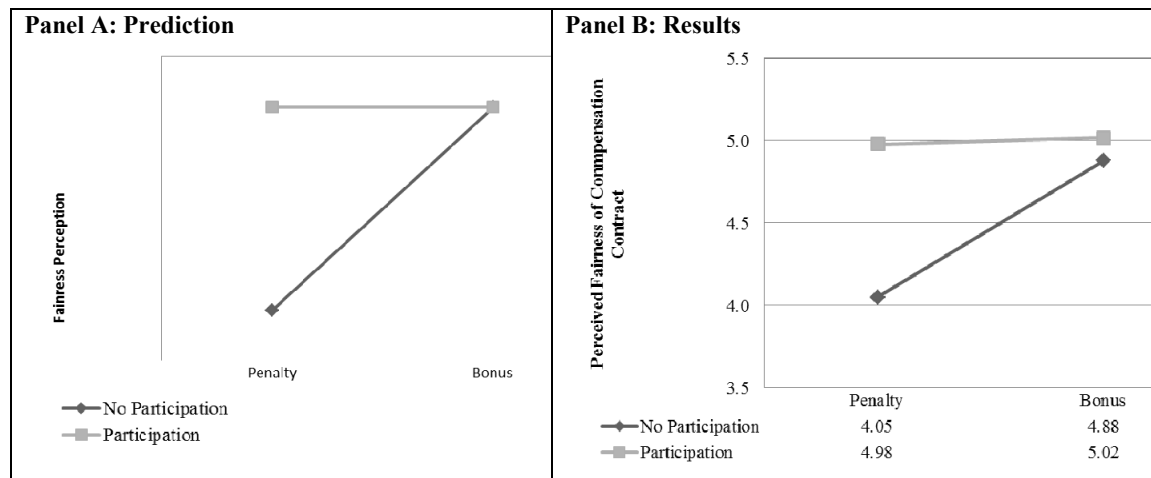


Figure 2. Predicted and Perceived Fairness of Compensation Contract

Descriptive statistics (Panel A, Table 1) indicate that participants perceive the fairness of a bonus framed contract higher (4.95) than the fairness of a penalty-framed contract (4.53). The results for the 2 x 2 ANOVA (Panel B, Table 1) reflect a significant main effect for contract framing ($F=4.875, p=.029$), providing support for Hypothesis 1. Levene's test for heterogeneity of variances is not significant ($F = .223, df = 3, 164, p=.880$).

Panel A: Descriptive Statistics Fairness Perception: Mean, (Standard Deviation), (n = Number of Participants)

	Penalty Frame	Bonus Frame	Overall Mean
No Participation	4.05 (1.38) (n=41)	4.88 (1.24) (n=40)	4.46 (1.37)
Participation	4.98 (1.27) (n=45)	5.02 (1.22) (n=42)	5.00 (1.40)
Overall Mean	4.53 (1.40)	4.95 (1.23)	

Panel B: ANOVA

Source	SS	Df	MS	F	P
Participation	12.174	1	12.174	7.443	.007
Contract Framing	7.973	1	7.973	4.875	.029
Participation x Contract Framing	6.379	1	6.379	3.900	.050
Error	268.231	164	1.636		

Table 1. Fairness Perception

Hypothesis 2 predicts that contract framing and participation interact in an ordinal manner, such that when subordinates receive a penalty-framed contract and do not participate in the performance evaluation process, fairness perceptions are lower than when subordinates receive a bonus-framed contract or participate in the performance evaluation process. In order to test the ordinal interaction we conduct a contrast coding analysis using the weights (-3) for the no participation/penalty condition and (+1) for the other three experimental conditions (Panel A, Table 2). Contrast coding can be used to compare experimental treatment cells in different ways depending on the theoretical prediction (see Buckless and Ravenscroft, 1990).

The contrast model is significant ($t = 3.961$, $p < .01$, see Panel B, Table 2). Further we conduct planned comparison between the three conditions where fairness perception is expected to be high. As expected all three planned comparisons are not significant indicating that there are no statistically significant differences between the other three respective groups (Panel B, Table 2). Thus, the results support hypothesis 2.

Panel A: Contrast Weights

Contrast #	Penalty/ No Participation	Penalty/ Participation	Bonus/ No Participation	Bonus/ Participation
1	-3	1	1	1
2	0	0	1	-1
3	0	1	-1	0
4	0	-1	0	1

Panel B: Contrast Tests

Contrast #	Value of Contrast	Std. Error	T	df	P
1	2.73	.689	3.961	164	.000
2	-.15	.283	-.527	164	.599
3	.10	.278	.370	164	.712
4	.05	.274	.168	164	.867

Table 2. Contrast Tests

5. Supplementary Analysis

In a supplementary analysis we explored underlying mechanisms via introducing mediators between both manipulated variables (contract framing, participation) and the dependent variable (fairness perception contract).

First, we used control-mediated theories of fairness perception to derive our expectation in H1. In order to test that the effect above on fairness perception stems from control perceptions we added two mediators to the direct effect: participation \rightarrow fairness perception of compensation contract. Consistent with control-mediated fairness theories, participation should increase feeling of control. Thus, we added the variable control over weighting scheme asking participants' about their feeling of control over the contract's performance evaluation weighting scheme. As a second mediator, we added the variable fairness of weighting scheme, asking participants' about their fairness perception regarding the contract's performance evaluation weighting scheme. This fairness perception then feeds into the overall fairness perception of the compensation contract.

Second, we explored a causal mechanism of why penalty framed contracts decrease fairness perception. Participants in Luft (1994) reported that under a bonus frame, meeting a target would give them a greater feeling of success than under a penalty frame. We explore whether such differences in feelings of success in a penalty vs. bonus frame mediate fairness perception. We again added two mediators to the direct effect studied above: contract framing \rightarrow fairness perception of compensation contract. We added feeling of success asking for participants feeling of success when they receive the bonus or do not receive the penalty. As a second mediator, we added the variable fairness of variable component, asking participants' about their fairness perception regarding the contract's variable component (i.e. bonus or penalty). This fairness perception then feeds into the overall fairness perception of the compensation contract.

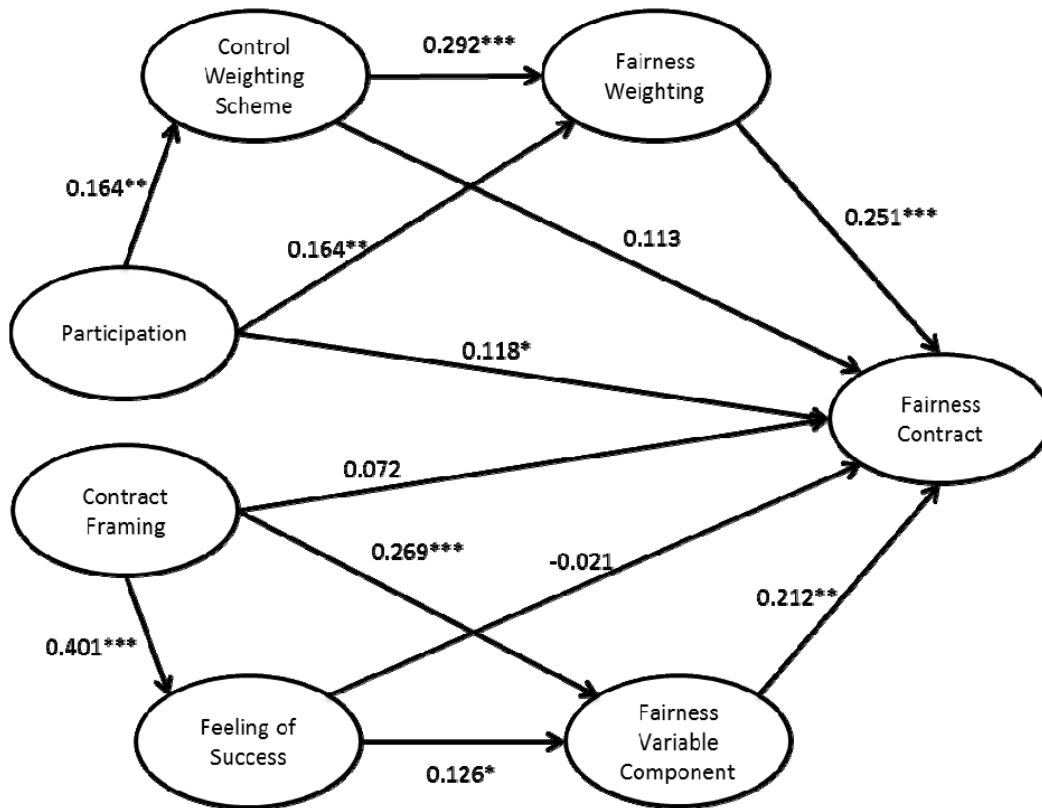
To examine these proposed mediations, we constructed a path model (Figure 3). In the constructed path model fairness perception contract is a dependent variable of fairness weighting scheme and fairness variable component. Fairness weighting scheme is a dependent variable of control weighting scheme and participation. Fairness variable component is a dependent variable of feeling of success and contract framing. Finally, control weighting scheme is a dependent variable of participation and feeling of success is a dependent variable of contract framing.

To test the path model we use PLS, a soft modelling approach not using strong assumptions regarding distribution and sample size (Chin, 1998). In PLS resampling methods are adopted for building confidence intervals (Chin, 1998). PLS places fewer demands on the data, meaning that it can be applied to smaller samples than SEM, and it does not assume a normal distribution of the data (Chin, 1998, Kline, 2010). In contrast, the use of maximum likelihood estimation (which is the default estimation technique in SEM) assumes that the observed variables follow a multivariate normal distribution, and requires a sample size of at least 200 observations to provide a sound basis for estimation (Hair et al., 2010). Thus, due to our sample size limitation of less than 200 we use PLS (Smith and Langfield-Smith, 2004).

The resampling method used in this analysis is bootstrapping with 1,000 samples. Contemporary bootstrapping for PLS analysis have used large samples, such as 500 samples (Hall, 2008) and 1,000 samples (Hall and Smith, 2009), and it is common practice in contemporary PLS analyses to use large samples from 200 to 1,000 samples (Lee et al., 2011). The path coefficients and t-statistics of the PLS model are shown in Table 3 Panel A.

As shown in Figure 3 and Table 3, there are 12 associations among the variables. A total of nine associations are statistically significant, whereas three are not statistically significant. Participation is associated with Control Weighting Scheme ($\beta = 0.164, t = 2.231, p = 0.026$), Fairness Contract ($\beta = 0.118, t = 1.705, p = 0.088$) and Fairness Weighting ($\beta = 0.164, t = 2.324, p = 0.020$). Control Weighting Scheme has a statistically significant path to Fairness Weighting ($\beta = 0.292, t = 2.989, p = 0.003$), but not statistically significant towards Fairness Contract ($\beta = 0.113, t = 1.234, p = 0.217$). And Fairness Weighting is associated with Fairness Contract ($\beta = 0.251, t = 2.660, p = 0.008$). Contract Framing is associated with Fairness Variable Component ($\beta = 0.269, t = 3.566, p = 0.000$), and Feeling of Success ($\beta = 0.401, t = 6.933, p = 0.000$), but not with Fairness Contract ($\beta = 0.072, t = 0.986, p = 0.324$). Feeling of Success is associated with Fairness Variable Component ($\beta = 0.126, t =$

1.697, $p = 0.090$), but not with Fairness Contract ($\beta = -0.021$, $t = 0.272$, $p = 0.786$). And finally, Fairness Variable Component is associated with Fairness Contract ($\beta = 0.212$, $t = 2.236$, $p = 0.025$).



Note: * $p < 0.10$ (two-tailed), ** $p < 0.05$ (two-tailed), *** $p < 0.01$ (two-tailed).

Figure 3. Path Model and Coefficients

Panel A: Path coefficients and t -statistics

Variables	Path to				
	Control Weighting Scheme	Fairness Variable Component	Fairness Weighting	Feeling of Success	Fairness Contract
Contract Framing		0.269*** ($t = 3.566$)		0.401*** ($t = 6.933$)	0.072 ($t = 0.986$)
Control Weighting Scheme			0.292*** ($t = 2.989$)		0.113 ($t = 1.234$)
Fairness Variable Component					0.212** ($t = 2.236$)
Fairness Weighting					0.251*** ($t = 2.66$)
Feeling of Success		0.126* ($t = 1.697$)			-0.021 ($t = 0.272$)
Participation	0.164** ($t = 2.231$)		0.164** ($t = 2.324$)		0.118* ($t = 1.705$)
R ²	0.027	0.116	0.128	0.160	0.223

Panel B: Indirect effect path coefficients and *t*-statistics (bootstrapping)

Variables	Linkages	Path to Fairness Contract
Participation	Control Weighting Scheme	$p = 0.128$
Participation	Fairness Weighting	$p = 0.02^{**}$
Contract Framing	Feeling of Success	$p = 0.611$
Contract Framing	Fairness Variable Component	$p = 0.006^{***}$

Panel C: Path analysis (two linkages)

Variables	Linkages		Path to Fairness Contract
Participation	Control Weighting Scheme	Fairness Weighting	$p = 0.021^{**}$
Contract Framing	Feeling of Success	Fairness Variable Component	$p = 0.04^{**}$

Note: * $p < 0.10$ (two-tailed), ** $p < 0.05$ (two-tailed), *** $p < 0.01$ (two-tailed).

Table 3. PLS Results

The statistical significance of indirect effects is analysed using the bootstrapping technique (see e.g. Hall and Smith, 2009). For each of the 1,000 samples from bootstrapping the estimated coefficients for the indirect path are multiplied to calculate an estimated coefficient for the indirect effect. The significance is obtained examining the percentage of effects above and below zero. This technique is done with the bootstrapping output and does not assume any distribution.

As shown in Table 3, Panel B, Fairness Weighting mediates the association among Participation and Fairness Contract ($p = 0.02$), whereas Fairness Variable Component mediates the association among Contract Framing and Fairness Contract ($p = 0.006$). However, no mediation was identified from Participation through Control Weighting Scheme or Contract Framing through Feeling of Success.

Yet, as shown in Table 3, Panel C, there is a significant path which links Participation with Fairness Contract passing through Control Weighting Scheme and Fairness Weighting ($p = 0.021$). Similarly, there is a significant path which links Contract Framing with Fairness Contract passing through Feeling of Success and Fairness Variable Component ($p = 0.04$).⁴

6. Discussion

“Prior research largely neglects control dynamics and remains silent on negative socio-emotional consequences of control activities” (Wiener et al., 2016, p. 743). For instance, Gopal and Gosain (2010) show that higher levels of outcome controls are associated with higher software quality and project efficiency. According to Gopal and Gosain (2010) these outcome controls can be rewards and sanctions for meeting or failing to meet performance goals. Thereby rewards and sanctions are treated equally and potentially negative socio-emotional effects are not in focus.

Our study contributes by not only providing evidence for negative socio-emotional consequences of penalty-framed controls potentially associated with IS projects, but does also provide an avenue for mitigating some of the negative consequences through controllee participation, as a form of interaction between controllee and controller. Moreover, leveraging the strength of our experimental

⁴ We also tested the ordinal interaction (similar to Table 2) using the PLS approach by combining the two binary independent variables of the model displayed in Figure 3 into one. This newly created variable follows these conditions: if Participation and Contract Framing equal 0, then variable equals 0; and if Participation and/or Contract Framing not equal 0, then new variable equals 1. The coefficient of the path from this variable to Fairness Contract is 0.196 ($t = 1.664$, $p = 0.1$, two-tailed).

method, we provide process-based evidence of how controllee perceptions on socio-emotional factors are formed. For instance, we identify a process through feeling of success.

Thus, our study can be seen as a first step in a response to a call by Wiener et al. (2016, p. 742) who contend that “the literature largely treats as a black box the question of how the controller interacts with the controllee to implement or promote the selected controls”. We study the manner of interaction between controllers (supervisors, service recipients) and controlees (subordinates, service providers) by varying levels of controllee participation.

Using a control-mediated theory of fairness perception, we predicted and found that controllee participation in performance evaluation can mitigate the negative effect of penalty framed contracts on fairness perception. This is an important finding and contributes to the limited academic literature on penalty contracts in accounting information systems (Goo et al., 2009, Fehrenbacher, 2016). In accounting information systems the notion of penalties has been studied from a market perspective. For instance, market penalties resulting from IT operational risks (Benaroch et al., 2012) and reputation penalties for CEOs and CFOs resulting from IT control system weaknesses (Haislip et al., 2015) received recent academic consideration.

Furthermore, in business-to-business contracting penalty contracts are frequently used. For instance, penalty clauses are regularly employed in the design of service level agreements (Arora and Asundi, 1999, Yeo and Buyya, 2005, Goo et al. 2009, see Fehrenbacher 2016 for a review with respect to service level agreements), in part, because they have the potential to increase client-related effort (Fehrenbacher 2016). However, penalty frames can have negative effects on employee fairness perception (Hannan et al., 2005) and willingness to share knowledge (Fehrenbacher, 2016). We argue that these negative effects are likely a reason why penalty contracts are rare in individual contracts.

We contribute to this literature in providing that negative effects on individual fairness perception can be mitigated by involving the employee and giving the employee more participation rights. Thus, contract-framing and participation are shown to be complements. Management control (MC) “practices are complements when benefits of one MC practice increase with the use of (some) other MC practice” (Grabner and Moers, 2013, p. 412). The effort-increasing benefits of penalty-framed contracts increase with the use of participation that increases related fairness perception.

Effects of participation have been studied in budgeting (Argyris, 1952, Fisher et al., 2000), technology adoption (Lin and Shao, 2000) and information systems outsourcing success (Lee and Kim, 1999). All of these organizational activities can involve more or less participatory elements and may be controlled using bonus or penalty frames. Our results imply that controllee participation is even more important in the face of penalty contracts in order to maintain high fairness perception levels. For instance, McKeen et al. (1994) examine the influence of participation with respect to the contingencies task complexity, system complexity, user influence and user-developer communication. With respect to contract framing as a contingency we evidence differential importance of participation and thereby contribute to the study of the effect of participation and its limiting and supporting contingencies (Lin and Shao, 2000, McKeen et al., 1994).

Furthermore, in supplementary analysis we found support for the applicability of control-mediated theories in the study of participation and contract frames. As such we find that participation influences control perception and control perception influences fairness perception. We shed further light into underlying processes of the observed effects by providing evidence that feeling of success is part of a significant chain that explains the influence of contract frame on fairness perception. This contributes to the explanation of underlying processes causing the effect of contract frame on fairness perception. Thus, individual feeling of success is reduced in light of a penalty frame leading to reduced fairness perception of a contract. An interesting avenue for future research may be to explore how management can foster feeling of success to manage fairness perception levels.

7. Limitations and Future Research

Our study comes with several limitations and hence opportunities for future research. First, while we use participants that are trained in information systems concepts and techniques, our data is based on a laboratory experiment. Such as setting can limit the external validity. However, it allows for the isolation of single controls and the effects thereof. For instance, single control practices are hard to

isolate from other management or contextual effects in the field (Lazear, 2000, Cadsby et al., 2007, Fehrenbacher, 2013).

Second, our setting only explores one mechanism of how negative consequences of controls can be mitigated. Future research may explore different mechanisms and their effects in conjunction with controls such as contract framing. The mechanism we use involves choice on how performance evaluation is conducted. Control-mediated theories do also suggest positive effects of voice and it may be argued that choice is a more certain and more direct way of exerting control and voice may be seen as superfluous in situations of choice possibility (Brett and Goldberg, 1983). However, voice may have additional positive effects on perceived control in choice situations earlier in the decision making process (Earley and Lind, 1987). At the stage of problem definition and procedure design voice can be perceived to add additional control to choice whereas at the stage of selecting a solution from available alternatives voice does not provide additional perceived control effect to choice (Earley and Lind, 1987). Thus, future research may look at additional effects of voice to mitigate negative effects of penalty contracts.

Another fruitful area for future research may be the examination of different forms of controllee participation at different stages under different contract frames. Different stages (e.g. planning, analysis, design, testing, or implementation) and the question when user participation may take place are also important points of consideration for system designers (Lin and Shao, 2000, Ein-Dor and Segev, 1978, Lu and Wang, 1997).

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