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How different kinds of cost information for salespeople affect negotiations and economic outcome: a behavioral perspective

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Summary

The paper deals with different kinds of cost information for salespeople and their influences on the process and the outcome of distributive price negotiations. Building upon the behavioral negotiation model by Neale and Northcraft, a simulation game is carried out with 119 dyads. The results show that undifferentiated cost information (i.e., the salesperson is not aware of the exact amount of direct costs, and overhead expenses, respectively) leads to higher reservation prices, which also translates to higher target prices, higher first bids, and higher outcomes. This effect is due to higher pressure of cost recovery when no specific information on direct costs is known to the salesman. Other influencing factors (e.g., characteristics of the salesman) of the negotiated outcome do not occur. Thus, at least in a distributive setting, only cognitive references play a significant role in determining negotiated outcome. In all, we provide a comprehensive negotiation model based on behavioral economics that takes a closer look at the development of prices in negotiations. With regard to corporate practice, our findings suggest that managers should refrain from providing their salespeople with differentiated cost information, even though theoretical considerations recommend that pricing decisions should rely on complete information.

Keywords: behavioral accounting; behavioral negotiation theory; cost information; distributive bargaining; price negotiations

Introduction

Both academic research and managerial practice have devoted a lot of attention to the topic of negotiation, with price negotiations being of particular relevance in business relations. Theoretical work often claims that in price negotiations, salespeople should refer to the direct costs when fixing the lower price limit (or, synonymously, the reservation price), i.e. to the costs that accumulate with a particular contract. As in most cases, price negotiations (e.g. between a supplier firm and its customers) are indeed accomplished by salespeople instead of the company's executive board itself, it is interesting to analyze if companies can systematically influence negotiated outcomes by varying the level of detail of cost information they are giving to their salespeople. This question can be substantiated by the following rationale: Cost information which does not itemize direct costs and overhead expenses in an explicit manner (undifferentiated cost information) exerts a higher pressure of cost recovery than does more detailed information (differentiated cost information). This effect should occur due to the higher degree of uncertainty in the first case. With a higher pressure of cost recovery in mind, salespeople should achieve "better" negotiated outcomes, more accurately higher sales prices.

From a theoretical point of view, the described problem belongs to the discipline of behavioral accounting. Behavioral accounting literature, however, provides very sparse empirical knowledge on how companies can indirectly influence selling prices by providing their salespeople with an "advantageous" kind of cost information. To our knowledge, only one work has dealt with the aforementioned problem: Plinke (1985) embedded the question into the more general topic of revenue planning in project business settings. He found that undifferentiated cost information leads to higher negotiated prices. However, as he only refers to the negotiated price as the dependent variable, it is still unclear how this effect develops. Consequently, looking at negotiated prices only is somewhat incomplete as it does not reflect more recent advances in behavioral bargaining. Rather, the analysis should reflect the theoretic behavioral model of Neale and Northcraft (1991) who conceptualized dyadic bargaining. The model can be classified as state-of-the-art in the aforementioned theoretical context. In their model, Neale and Northcraft distinguish between (static) context variables and (dynamic) interaction variables, and their respective influence on negotiation outcomes. The context variables affect outcome measures only indirectly, in fact via the dynamic factors. According to the model, the kind of cost information a salesman is provided with would belong to the static factors, whereas e.g. bidding behavior (as a consequence of reservation prices) is an example for a dynamic variable influencing negotiation outcome.

Thus, in our paper, we aim at contributing to the behavioral negotiation literature in the following sense: Building upon the theoretical model by Neale & Northcraft (in the following: N&N model), we analyze the influence of different kinds of cost information on the negotiation process, as well as on negotiated outcomes. Hence, the main objective is to apply a known theoretical model in new empirical setting. Hereby, we will use the results of an extensive simulation game with 119 dyads. Having in mind that in the N&N model, cost information as a static factor affects negotiation outcome only indirectly, we will also concretize through which (mediating) factors the hypothesized effect develops. More specifically, we will refer to the hierarchical structure of reservation prices, target prices, initial bids, and negotiated contract prices. Thus, the focus is on prices to be negotiated, resulting in a distributive bargaining situation. This conceptualization, from a methodological point of view, enables us to isolate the effect of different cost information on negotiated outcome, whereas in an integrative setting (multi-item negotiations) complex interactions between the different negotiation topics would occur and would thus complicate the matters.

All in all, our conceptualization not only answers the question as *to which extent* different cost information affects the result of price negotiations; it specifically gives reasons *why* suchlike occur.

The remaining paper is organized as follows: Firstly, in a theoretical section, we will review the relevant behavioral accounting literature before turning to the N&N model in greater detail. Secondly, hypotheses are developed. Thirdly, we will describe our negotiation model which, in a sense, is an implementation of the N&N model with particular reference to cost information and its behavioral consequences. Lastly, the empirical analysis and its results are discussed before we end up with conclusions and directions for further research.

Theoretical background

In the context of analyzing contract negotiations, behavioral economics provide an important theoretical background. The aim of behavioral negotiation theory is to identify variables that influence the behavior of negotiators and thus the result of negotiations (e.g. Neale & Northcraft, 1991). Thereby, these approaches improve the understanding of negotiations and provide numerous indications for a proper preparation and accomplishment of negotiations. Behavioral accounting can be assigned to this field of theory since it analyzes the response of individuals to accounting issues or accounting information (Borkowski, Welsh, & Zhang, 2001; for a deeper insight into the foundations of behavioral accounting see, e.g., Argyris, 1952; Arnold & Sutton, 1997; Ashton & Ashton, 1995; Burns & DeCoster, 1969). Hence, it

also addresses the question how different kinds of cost information influence the behavior and decisions of negotiators. As this is the scope of our study, behavioral accounting constitutes the central theoretical framework to our paper.

Furthermore, our analysis is based on cognitive negotiation theory, which pertains to socio-psychological research approaches and thus to another area of behavioral economics (see also Huber & Neale, 1986; Thompson, Neale, & Sinaceur, 2004). According to the cognitive negotiation theory, dealing with the question of how negotiators process information before and within the negotiation interaction, there are different reference points which play an important role in the psychological information process of salespeople. These include the negotiator's reservation price, target price, and first bid. In negotiation literature, it is unquestionable that these reference prices predict the result of negotiations at least to some extent (e.g. Kristensen & Gärling, 1997; White et al., 1994; Van Poucke & Buelens, 2002).

The reservation price (or resistance point) is the point where the negotiator principally should be indifferent between accepting the offer and ending the negotiation (i.e. the reservation price is the lower limit or the lowest outcome a negotiator is willing to accept; Kristensen & Gärling, 1997; Van Poucke & Buelens, 2002). The target price (or aspiration price) is usually defined as the best outcome a negotiator can reasonably expect (Blount et al., 1995; White & Neale, 1994). The first bid (or opening offer) is the first price mentioned either by the salesperson or the buyer in the negotiation (Van Poucke & Buelens, 2002). It plays a central role within the negotiation interaction and for the negotiation outcome as it establishes a valuable anchor point. The high relevance of anchor points in price negotiations can be attributed to findings by Tversky and Kahneman: When individuals have to make quantitative estimations under uncertainty they tend to align their estimation with a specific anchor point (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974). In these situations, an anchor point is a starting point that individuals adjust in order to come to their final answer. These adjustments are typically insufficient resulting in a bias towards the starting point (Slovic & Lichtenstein, 1974; Tversky & Kahneman, 1974). Hence, the final estimation is significantly higher for high initial values than for low starting points (Jacowitz & Kahneman, 1995). Analogously, the first mentioned price in a price negotiation has a significant influence on the negotiated price (Kristensen & Gärling, 2000; Van Poucke & Buelens, 2002). But one has to keep in mind that the first bid needs to be plausible and reliable in order to serve as such an anchor point.

As described in the introduction, we will build upon the descriptive theoretical negotiation model by Neale & Northcraft (1991). It has been explicitly formulated as a

"framework for future research in this area" (Neale & Northcraft, 1991, p. 147). Factors that influence negotiated outcomes are divided into (static) context variables and (dynamic) interaction variables. The principle notion of the model is that the context variables serve as a kind of basis for negotiations, but only exert indirect effects on negotiated outcomes via the dynamic interaction variables. The model is illustrated in figure 1.

Insert figure 1 about here

As our main object of investigation is the influence of different types of cost information (i.e., undifferentiated vs. differentiated cost information), something that only applies to the selling side of the market, we will adopt the seller's perspective. Nonetheless, as the N&N model conceptualizes dyadic bargaining, we will include information on the negotiation counterpart inasmuch as it concerns the (dynamic) interaction variables of the model.

Development of hypotheses

In most cases, price negotiations between a supplier firm and its customers are accomplished by salespeople on the side of the supplier firm. Salespeople do not have access to the complete accounting information of the company; they are rather provided with order-related cost information by the company. Hence, it can be assumed that companies can systematically influence the negotiation behavior of their salespeople and thus the negotiated outcomes by manipulating the kind of cost information they are giving to their salespeople. Although we know that in situations of temporary underemployment, the decision of salespeople on accepting a contract should only be based on the order-related direct costs instead of drawing on full costs which also comprise overhead expenses. Contrary to this theoretically "correct" basis for decision-making, in corporate practice an insistence on full costs can often be observed. An explanation for such a gap between theory and practice can be the following rationale: Salespeople attain to a higher price when they are provided with undifferentiated cost information than they do with information on both direct and overhead cost components. In the former case, salespeople would feel a higher pressure of cost recovery than in the latter case. I.e., the higher the knowledge on the composition of order-related costs is, the stronger the inclination of salespeople to accept a lower price should be. Against this background, based on the theory of behavioral accounting, we assume that negotiation behavior and decisions of salespeople vary with different kinds of cost information they are provided with.

Hence, the fundamental hypothesis of our study is that salespeople with undifferentiated cost information achieve a higher contract price than salespeople with differentiated cost information. However, reflecting the theoretical background about different reference prices determining negotiation outcomes (reservation, target price, first bid), we conclude that, in our research context, there is no direct relationship between the variation of cost information and the agreed price. Rather, the variation of cost information has a direct effect on the (subjective) reservation price of the salesperson. Therefore, in our following hypotheses, we need to take into account the relationship between reservation price, target price, first bid, and negotiated price in order to fully understand the effect of different kinds of cost information on negotiation outcome.

As our research model is based on the descriptive theoretical negotiation model by Neale & Northcraft (1991), there are different blocs of hypotheses that relate to different facets of our model. I.e., we differentiate between hypotheses regarding (1.) the link between context variables and dynamic variables, (2.) the link within dynamic variables, (3.) the link between dynamic variables and negotiation outcome, and (4.) the link between outcome measures. In addition, we analyze the moderating influence of negotiator characteristics on the negotiation interaction.

Concerning the link between context variables and dynamic variables we are able to analyze the relationship between a variation of the extent (i.e. the level of detail) of cost information and the reservation price. As described above, the higher the salesperson's knowledge on the composition of the order-related costs is, the stronger the inclination to accept a lower price should be. In case of providing the salesperson with differentiated cost information (i.e. the salesperson is aware about how the full costs decompose into direct costs and overhead expenses) the salesperson is able to define the lower price limit as the order-related direct costs. In case of undifferentiated cost information, there is a high uncertainty of defining the true lower price limit because he/she does not know the exact amount of the direct costs. Therefore, salespeople with different kinds of cost information are expected to feel a different pressure to cover order-related costs; hence, different reservation prices can be assumed. This leads to the following hypothesis:

H1: Undifferentiated cost information leads to higher reservation prices.

With regard to the fundamental hypothesis about the relationship between cost information and negotiated price, the question is if the effect of a variation of cost information carries

forward beyond the reservation price to the agreed price. I.e., are there significant relationships between reservation price, target price, first bid, and negotiated price, so that there is an indirect effect from cost information on the negotiated price? To answer this question, we should take a closer look at the relationships between the dynamic variables. Generally, salespeople intend to achieve a higher price than their reservation price, which results in a transaction-specific profit. Accordingly, the reservation price establishes the basis for the determination of the salesperson's target price: The target price, being the best outcome a negotiator can reasonably expect, results from the reservation price by adding an aspired order-related profit (a "markup").

H2a: The reservation price positively affects target prices.

To achieve a specific target price, a negotiator should refrain from starting the negotiation by stating his/her target price. Rather, he/she should take into consideration the estimation of concessions he/she expects to grant to the counterpart. Therefore, with regard to the negotiator's thought processes, the first bid stems from the target price by allowing for the expected concessions.

H2b: The target price positively affects first bids.

Additionally, the reservation price should also have a positive direct effect on the first bid, whether a negotiator is conscious of a particular target or not:

H2c: The reservation price has a direct effect on first bids which is positive.

Taking H2a, H2b and H2c together, the idea of mediating effects is illustrated. In general terms, a mediator is a variable that intervenes between a predictor variable and a criterion variable, i.e. it accounts for the relation between the predictor and the criterion (Baron & Kenny, 1986). Mediation holds if the mediator has a stronger effect on the dependent variable than the independent variable, with all effects being significant. Here, target price is hypothesized to mediate the link between reference prices and first bids (mediation model 1).

Following the described argumentation, there is a "natural" hierarchy concerning the relationship between reservation price, target price, and first bid. The "chain" of relevant

reference prices finally influences the negotiated price, or equivalently – as we analyze a distributive bargaining setting – the negotiator's profit. This leads to the analysis of the link between dynamic variables (reference prices) and negotiation outcome (profit). Firstly, for reasons of comprehensiveness, we will also analyze the well-established direct influence of the first bid on profit:

H3a: The first bid of a salesperson positively affects his/her profit.

Secondly, according to the chain of reference prices and analogously to the already mentioned mediation model, we establish a comparable constellation in order to relate the antecedents of first bid to the negotiated outcome. As found by Huber and Neale, sellers who are assigned a difficult goal were the most profitable (Huber & Neale, 1986). This finding can be incorporated in our research model by the following hypothesis:

H3b: The target price positively affects profit.

Hence, H3a and H3b in conjunction with the already mentioned hypothesis H2b again reflect the idea of a mediation model: Here, first bid mediates the link between target prices and profit (mediation model 2).

Up to now, we have only looked at the seller's bidding behavior as an antecedent of his/her own profit. In distributive price negotiations, however, a second key anchor towards the negotiated price is the first bid of the other party. For reasons of symmetry, we expect the first bid of the negotiation counterpart to affect the seller's profit in the following way:

H4: The higher the first bid of the buyer, the higher the seller's profit.

Relating the first bids of both parties to each other, we notice that the initial bid within a negotiation serves as a cognitive anchor, and thus also influences the first counterbid within the negotiation. The seller's first bid can be the very first bid within the negotiation (the "initial bid"), or the first counterbid (i.e., when the initial bid comes from the counterpart). As the first counterbid is already anchored on the initial bid, whereas the initial bid of course is not, we expect the seller's first bid to be higher when stated by himself/herself. Again for reasons of symmetry, we are able to derive the following hypotheses:

H5a: The seller's first bid is higher when it is the initial bid within the negotiation.
H5b: The buyer's first bid is lower when it is the initial bid within the negotiation.

Besides the profit as a purely economic measure we also integrate negotiator's satisfaction with the process and the achieved result in our research model. Satisfaction results directly from the negotiator's profit. The relevance of considering satisfaction is due to the fact that it explicitly considers the relationship between negotiator profit and his/her target price (see also Huber & Neale, 1986). The target price not only has an indirect influence on the negotiator profit, but also a direct effect on the negotiator satisfaction that needs to be taken into account.

H6: The target price negatively affects negotiation satisfaction.

With regard to the link within outcome measures, it is intuitive to assume that there is a positive relationship between the seller's profit and negotiation satisfaction.

H7: Profit positively affects negotiation satisfaction.

To provide a comprehensive negotiation model based on behavioral economics, we need to integrate another idea from socio-psychological negotiation research: Is there an influence of negotiator-specific characteristics on negotiation outcome? Indeed, in negotiation literature, character-oriented approaches play a minor role since empirical studies have found no significant relationship between negotiator characteristics and negotiation outcome (Bazerman et al., 2000; Pruitt & Carnevale, 1993). But as we attempt to propose a comprehensive behavioral research model we integrate two personality traits into our analysis that are directly linked to the context of negotiations: Machiavellianism and negotiation expertise. Machiavellianism comprises the degree to which a person expresses tendencies to control others through aggressive, manipulative, and even devious means to achieve personal or organizational objectives (Christie & Geis, 1970). Generally, salespeople with strong Machiavellian tendencies are assumed to achieve a higher price in price negotiations than salespeople with lower Machiavellian tendencies. According to our research model, this effect develops indirectly via the aforementioned hierarchy of different reservation prices. Consequently, Machiavellianism is hypothesized to have an influence on the negotiation behavior (hence on the negotiation interaction), which, in turn, influences negotiation

outcomes. Thus, we integrate the effect of different levels of Machiavellianism by analyzing if the relationship between first bids and negotiated prices (i.e. the actual negotiation interaction) is moderated by the seller's Machiavellianism.

H8: The seller's tendency of Machiavellianism moderates the relationship between first bid and seller's profit.

In the same way (that is, also in a moderating function), seller's negotiation expertise as a second personality trait is considered here. Seller's negotiation expertise concerns the willingness and capability to conduct a negotiation in an effective way. Therefore, it includes the ability to steer the negotiation in the right direction, according to one's own interests (Plinke, 1985).

H9: The seller's negotiation expertise moderates the relationship between first bid and seller's profit.

Empirical analysis

In order to test our hypotheses, we developed the model displayed in figure 2. As already pointed out in the theory section, the model reflects a seller's perspective. Due to the additional fact that the objective of our study is incorporated into a distributive bargaining setting (or, in other words, into zero-sum games where the gain of one party represents exactly the loss of the other party; Thompson, 2005), some measures simultaneously refer to both parties. However, the first bid of the other party is explicitly included as it forms, together with the first bid of the seller, the (subjective) zone of possible agreements. The model explicitly refers to the theoretical N&N model, i.e. it (1.) introduces the kind of cost information the supplying company gives to its negotiating salesman as a static context variable and (2.) contains the hierarchical structure of reservation price, target price, and initial bid as antecedents of the achieved profit (the latter being a linear increasing function of the negotiated price, thus an equivalent measure for the negotiated price). All these antecedents belong to the negotiation interaction. The hierarchical structure is reflected by the fact that the measures are modeled as mediator variables. In line with the principle notion of the N&N model, the kind of cost information also influences negotiation outcome, but only indirectly via the aforementioned hierarchically structured factors. The seller's tendency of Machiavellianism and his/her expertise as a negotiator are modeled as additional context

factors. More specifically, as these factors are expected to interact with the action during the negotiation (i.e., the first bid), they are included as moderators into the model. As both the salesperson's tendency of Machiavellianism and his/her negotiation expertise are metric variables, their respective moderating influence on the link between first bid and profit is modeled through direct effects on profit, and an interaction term with the first bid on profit (Sharma, Durand & Gur-Arie, 1981).

Furthermore, it should be kept in mind that we include satisfaction with the negotiation process and the achieved outcome as an additional outcome measure in the model. By this, we are able to analyze the downstream effects of the economic measure for negotiation success, which may be relevant to possible future interaction within a business relationship. Here, as already pointed out in the theory section, satisfaction depends on the achieved (economic) outcome, but also on the target price, as it includes an adjustment to expectations.

Insert figure 2 about here

In order to test the model empirically, a simulation game has been accomplished, with 254 Master students in Germany as participants, most of them in their final year of education. Laboratory research has its main advantage in allowing for replications (Greenhalgh & Neslin, 1983). In experimental studies, student samples are widely accepted due to their relatively high homogeneity (Petty & Cacioppo, 1996); this homogeneity helps isolate the effect(s) of interest. Furthermore, in many bargaining games, students do not seem to perform else than practitioners or professionals (see for example Camerer, 2003, and Roth, 1995, as well as the studies by Neale and Northcraft (1986), and Northcraft and Neale (1987)). Therefore, we consider the sample to be suitable in our context.

Within the case study, each student was assigned to one of two roles: a supplying firm, or its customer. The task was to bargain for the price of a special facility the customer needed for his production plant. As each student worked on his/her own, we originally had 127 bargaining dyads. Apart from basic information which were the same for both parties (description of the situation, problem formulation), each student got role-specific material. On the customer side, this material mainly contained details for arguments to be employed in the negotiation, as well as information on the upper price level and the BATNA (best alternative to a negotiated agreement; Fisher, Ury & Patton, 1992; the BATNA was a rather doubtful outside option, thus close to 0). As all students in the customer function received the same

information, there should not be any systematic variation in the pricing pressure they exert towards their supplier counterparts. On the side of the supplying company (that is, on the side of the firm that was to deliver the plant facility to its customer), also some arguments for the negotiation were provided, as well as the BATNA (also in this case, the BATNA was paraphrased as a value of 0) and cost information concerning the development of the plant facility. The latter kind of information was manipulated in the following way: Whereas one half got an exact summary of all cost elements with an explicit split into direct costs and overhead expenses (differentiated cost information), the other half only knew the total amount of all respective cost elements (undifferentiated cost information). The negotiations took place in internet chats, with a time slot of 120 minutes (for the appropriateness of internet experiments in behavioral accounting research see Bryant, Hunton & Stone, 2004). No participant had the possibility to uncover his/her negotiating counterpart. Items to measure the personal factors, as well as reservation prices and target prices were collected through an online questionnaire before the individual negotiations took place. After the negotiation was complete, the participants had to answer to a second questionnaire, which contained measures of negotiation evaluation (i.e., satisfaction with the negotiation process and the outcome), as well as questions for manipulation checks (supplying firm only). The initial bids, as well as the first counterbids and the negotiated prices, were derived through internet protocols (log files). As both latent (personal factors and satisfaction) and manifest variables (all remaining items) are present in this study, we will apply SEM techniques in order to estimate our behavioral negotiation model. Missing data for at least one party led to the exclusion of altogether 8 dyads, leaving 119 complete data sets for all following analyses.

Results of the manipulation checks

Three questions in the second questionnaire were intended to check if the manipulation of cost information actually succeeded: (1.) “The cost data was useful in order to come to a pricing decision.” (2.) “The kind of cost information helped me substantiate my decisions during the negotiation.” (3.) “The kind of cost information reduced my personal uncertainty in evaluating and accepting particular price offers from my negotiation counterpart.” As expected, all items show significant higher values for the group with differentiated cost information ($p<.001$ for questions (1.) and (2.); $p<.05$ for question (3.), using the non-parametric Mann-Whitney-U test). Thus, the different cost information indeed generated different levels of cost pressure.

Results of the preliminary analysis of the mediating and moderating effects

In order to test if the intended models of mediating effects (target price as a mediator between reservation price and first bid; first bid as a mediator between target price and profit) are meaningful and, as a consequence, justified to be part of the SEM model, preliminary regression analyses have been applied. Generally, in order to establish a variable C to be a mediator of an independent variable A on a dependent variable B, one has to estimate three separate regression models (Baron & Kenny, 1986): (1.) A as a regressor of the mediator C; (2.) A as a regressor of B; (3.) the mediator C as a regressor of B. Here, both mediation models actually hold (as any path coefficient is significant with $p<0.001$) and should, as a consequence, be considered in the following analysis using SEM techniques.

Besides the mediating effects, we also assume the negotiator's tendency of Machiavellianism, as well as his/her expertise in negotiation, to moderate the influence of first bid on profit (see development of hypotheses). Again, in order to know if these moderating effects actually occur, we analyze them apart from the other effects, in a preliminary analysis. Referring to the procedure proposed by Sharma, Durand & Gur-Arie (1981), we again apply regression techniques. To analyze if a variable C moderates the link between variables A and B, three regression equations should be estimated: (1.) A as a regressor of B; (2.) A and C as regressors of B; (3.) A, C and the interaction term A*C as regressors of B. Here, both personal variables can be classified as quasi-moderators (that is, both personal characteristics interact with the first bid, and they are also related to profit as the dependent variable). Consequently, we will include these effects into the SEM model.

Results of the SEM model

We use the Partial Least Squares (PLS) algorithm in order to estimate the model. A PLS path model consists of two different models: the outer (or measurement) model relating the manifest variables to (latent) constructs, and the inner (or structural) model linking latent constructs. The PLS path model verifies if hypothetical relationships match with empirical correlations (Wold, 1974). An iterative algorithm provides the researcher with the factor loadings or weights (outer model), and the regression coefficients (inner model) (Lohmöller, 1989; Wold, 1982). An advantage of PLS is that it can handle a relatively small sample size (Chin, 1998; Scholderer & Balderjahn, 2006), an argument that applies to our case as the sample size is just under 60 in each of the two groups (suppliers with differentiated and undifferentiated cost information, respectively), with a total of 18 items in the model.

As PLS is non-parametric in nature, it does not allow for statistical inference. The application of resampling methods like jackknifing or bootstrapping methods generates goodness-of-fit or validity measures (Efron & Tibshirani, 1993).

As already mentioned, the model includes three latent constructs (Machiavellianism – MV, negotiation expertise – NE, and negotiation satisfaction – SAT). For these constructs, goodness-of-fit of the respective measurement models have to be reported. Firstly, in order to analyze content validity, exploratory factor analyses of both NE and SAT reveal a one-factor structure in each case (with 75.9% and 67.7% explained variance, respectively). MV, however, decomposes into two factors (with three items mainly loading on the first factor). Thus, one item was excluded from all further analyses. The remaining three items reveal a one-factor structure with an explained variance of 63.8%. Secondly, on the item level, indicator reliability (a measure for the degree to which the variance of an item can be explained by the underlying factor) should be present. Indicator reliability is said to be satisfactory when the loadings of all items belonging to one construct are higher than 0.6; items with loadings lower than 0.4 should be excluded from the analysis (Hulland, 1999). Whereas for both NE and SAT, the critical threshold of 0.6 is reached for all item loadings (NE: loadings between 0.698 and 0.959; SAT: loadings between 0.693 and 0.912), one item belonging to MV has to be excluded. The remaining two items show loadings of 0.744 and 0.949, respectively. Thirdly, on the construct level, internal consistency (Fornell & Larcker, 1981) as a measure for construct reliability is satisfactory for all three constructs and ranges between 84.0% (MV) and 87.6% (NE) (Nunnally, 1978). Lastly, the average variance extracted (AVE) as an indicator of the discriminant validity of a construct has been computed. Values range between 67.4% (SAT) and 72.7% (MV); these values all exceed the critical threshold of 0.5.

The results of the PLS algorithm are summarized in tables 1 and 2. Table 1 shows the estimated path coefficients of the model with reference to their levels of significance, as well as the R^2 as a goodness-of-fit index for any endogenous variable. Undifferentiated cost information lead to significantly higher reservation prices (β=.347). This supports hypothesis 1. The effect also translates to higher target prices, and to higher first bids, as higher reservation prices yield higher target prices (β=.592), and higher target prices yield higher first bids (β=.683). These results are in accordance with hypotheses 2a and 2b, respectively. The "translation" effect is additionally supported by the Mann-Whitney-U test (the non-parametric variant of the F test in an ANOVA): With undifferentiated cost information, target prices, as well as first bid, are significantly higher (p=.01 and p=.007, respectively). However,

in contrast to hypothesis 2c, the direct link between reservation price and first bid is significantly negative. Consequently, the pure mediating effect of the target price on the link between reservation price and first bid is lessened.

Insert table 1 about here

Surprisingly, when integrating a direct link between target price and profit (as suggested by mediation model 2), the effect of the first bid on profit becomes insignificant (rejection of hypothesis 3a). Consequently, the seller apparently anchored his/her final decision on the target price when evaluating the acceptability of a contract (β=.26; confirmation of hypothesis 3b). Nonetheless, one can again say that undifferentiated cost information also translates to higher negotiated outcomes (Mann-Whitney-U test; p=.007).

Concerning the remaining hypotheses, we first turn to additional effects on negotiated outcome. The higher the buyer's first bid, the more convenient it is to the seller, resulting in higher profit for the latter (β=.492), which is in line with hypothesis 4. Also hypothesis 6 is supported by our model, showing that higher target prices lead to lower satisfaction levels (β=–.354). Therefore, with profit being held constant, the satisfaction with the economic measure of the negotiated agreement is lower with high expectations. The link between the two different outcome measures (β=.514) is indeed substantive and supports hypothesis 7, but also shows that the two measures are not exactly the same, which is a kind of ex post justification of treating them as different concepts.

Within the dynamic variables, the fact that the first bid is higher when it is the initial bid of the negotiation only holds for the buyer (β=.123). Thus, only hypothesis 5b is supported, whereas hypothesis 5a is not. The two remaining hypotheses concerning the moderating effects of the personal traits of a salesperson (on the link between first bid and profit) also have to be rejected: no significant influence can be detected. Whereas the preliminary regression analyses suggest moderating effects of both tendency of Machiavellianism and negotiation expertise, these effects do not occur in the complete model. Thus, in our distributive bargaining game on the price of a product, only the "hard facts" or, in other words, cognitive references (reservation price, target price, first bids) determine the negotiated outcome in terms of profit and satisfaction, whereas characteristics of the negotiating people are virtually inconsiderable. All results with respect to the hypotheses are summarized in table 2.

Insert table 2 about here

Concerning the different goodness-of-fit measures of the structural (inner) model (PLS does not provide global goodness-of-fit measures), we first observe that negotiation outcome can be explained quite well (R^2=38.1% for profit; R^2=26.7% for satisfaction). In addition to the R^2 values, the effect size (of a particular path coefficient) refers to the changing in R^2 when an exogenous construct is omitted. Here, the following effects can be classified as substantive: reservation price on target price; target price on first bid; first bid (of the counterpart) on profit; and profit on satisfaction (thus all but one effect of our proposed chain of reference prices and its effect on two different outcome measures). Concerning satisfaction (the only endogenous latent construct), the Stone Geisser criterion (to be interpreted like R^2, but with reference to the degrees of freedom in the model; Fornell & Cha, 1994) yields a value greater than zero, implying prediction relevance.

Conclusions and directions for further research

With our behavioral negotiation model, which is an implementation of the theoretical model by Neale and Northcraft (1991), we analyzed the effect of different kinds of cost information for a salesman on the negotiation process and its outcomes. The empirical results suggest that in the end, undifferentiated cost information (i.e., without specific information on the amount of direct costs) yields higher negotiated outcomes, as such cost information is connected with a higher uncertainty of the lower price level, which, in turn, results in a higher pressure of cost recovery. Thus, a company can, in a certain sense, “control” for their negotiated profits by giving undifferentiated cost information to their salespeople.

We were also able to show that there is indeed a hierarchical structure of reservation prices, target prices and first bids as antecedents of profit and, lastly, of negotiation satisfaction. Two effects, however, did not appear in the expected manner: Firstly, as the reservation price negatively affects first bids, the original mediating role of the target price is weakened. Secondly, not the first bid, but the target price seems to be the relevant anchor for a salesman when accepting a contract.

Apart from these results, the study presented here suffers from some limitations which, at the same time, disclose avenues for further research. First of all, even if there is empirical evidence on the suitability of student samples in laboratory negotiation research, it would be interesting to know if the model also holds for professionals. It may be that real sales people achieve higher results than students, especially with differentiated cost information. Secondly,

it can be interesting to analyze whether the effect of undifferentiated cost information also occurs in more complex integrative bargaining situations. Thirdly, we assume that in such integrative situations, the personal characteristics of the negotiator are more likely to influence negotiated outcomes than they do in a rather cognition-dominated distributive setting. Lastly, more general influencing factors can be looked at, e.g. a negotiator's risk aversion. In several following steps of our research, we plan to deal with all these limitations. As a starting point, we will deal with the student sample problem, using professional negotiators on the selling side of our case study. This variation will help us isolate the effect of students being confronted with different kinds of cost information in a price negotiation instead of professionals.

List of Figures

Figure 1: The behavioral negotiation model for dyadic bargaining by Neale and Northcraft (Neale & Northcraft, 1991, p. 177)

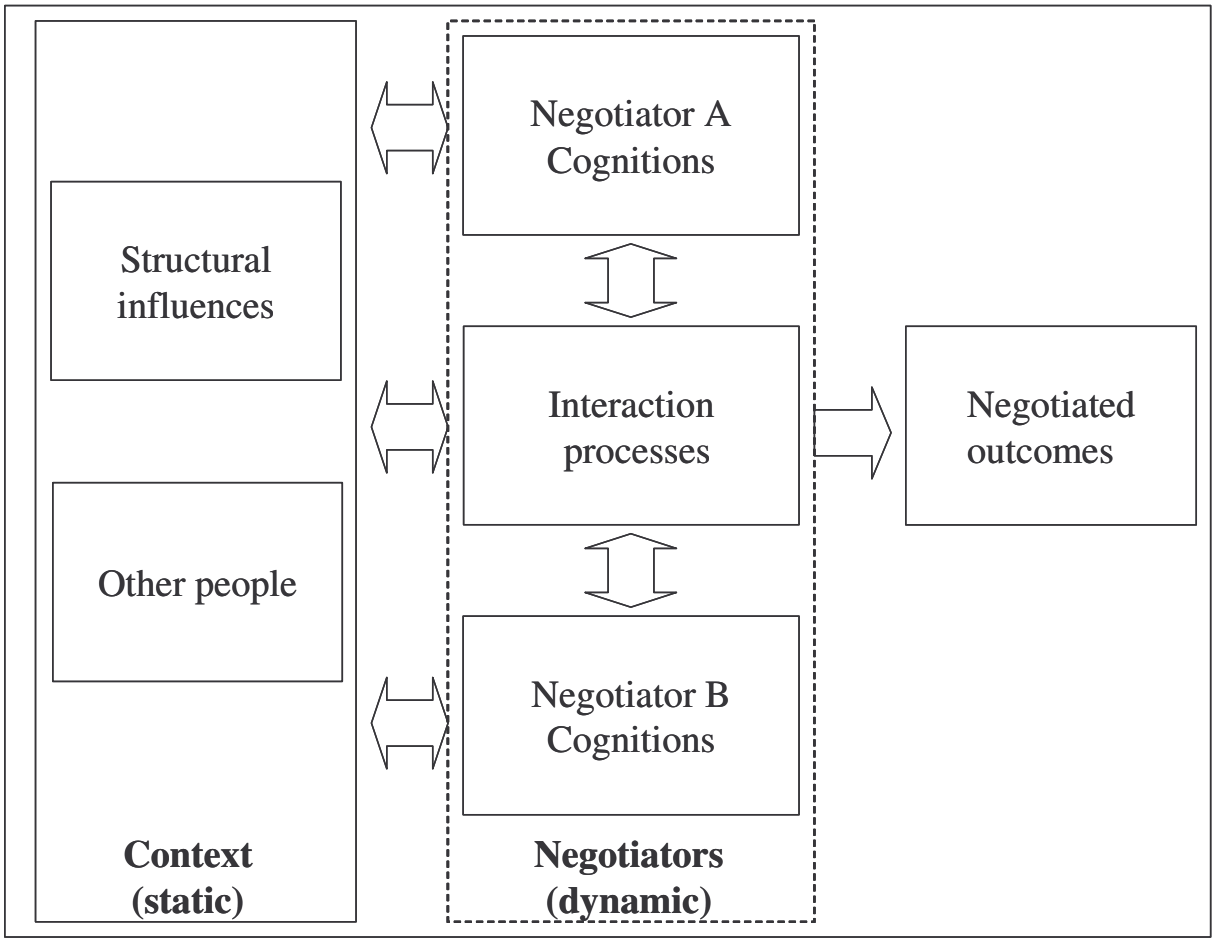
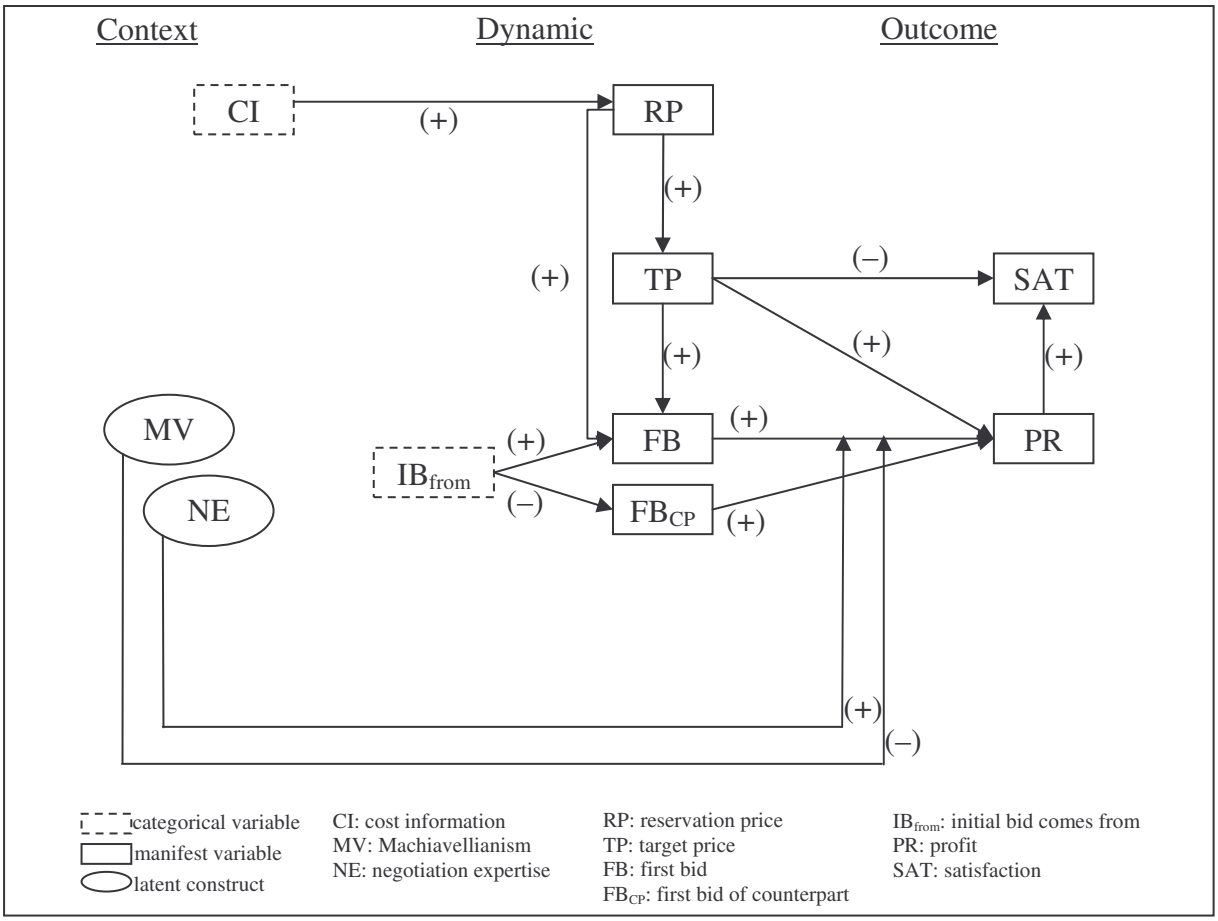


Figure 2: Behavioral model for analyzing the influence of different cost information on negotiation process, and negotiated outcomes



List of Tables

Table 1: Results of the SEM-model (path coefficients and p-values according to the bootstrapping procedure)

	Dependent variables					
	Reservation price	Target price	First bid	First bid of counterpart	Profit	Satisfaction
Influencing factors						
Cost information	**.347**					
Reservation price		**.592**	-.215			
Target price			**.683**		**.26**	**-.354**
First bid					*.077*	
First bid of counterpart					**.492**	
Profit						**.514**
Initial bid comes from seller			*-.057*			
Initial bid comes from buyer				-.123		
Moderating effects of context variables						
Machiavellianism					*.097*	
Machiavellianism * first bid					*-.066*	
Negotiation expertise					*.45*	
Negotiation expertise * first bid					*-.32*	
R^2	12,0%	35,0%	34,6%	1,5%	38,1%	26,7%

Significance of path coefficients:

Bold	p<.01
Regular	p<.1
Italic	n.s.

Table 2: Results of the SEM-model with respect to the hypotheses (**main** hypotheses: **bold** face type)

Hypothesis	Description	Result
Link between context variables and dynamic variables		
H1	Undifferentiated cost information leads to higher reservation prices.	supported
Link within dynamic variables		
H2a	The reservation price positively affects target prices.	supported
H2b	The target price positively affects first bids.	supported
H2c	The reservation price has a direct effect on first bids which is positive.	not supported
H5a	The seller's first bid is higher when it is the initial bid within the negotiation.	not supported
H5b	The buyer's first bid is lower when it is the initial bid within the negotiation.	supported
Link between dynamic variables and outcome		
H3a	The first bid positively affects profit.	not supported
H3b	The target price positively affects profit.	supported
H4	The higher the first bid of the buyer, the higher the seller's profit.	supported
H6	The target price negatively affects negotiation satisfaction.	supported
Link within outcome measures		
H7	Profit positively affects negotiation satisfaction.	supported
Moderating influences of context variables		
H8	The seller’s tendency of Machiavellianism moderates the relationship between first bid and profit.	not supported
H9	The seller's negotiation expertise moderates the link between first bid and profit.	not supported

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