

## **Intervening Effects of the Personality Dimension Agreeableness on Negotiation Strategy Selection in Budget Negotiations**

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### **Abstract**

This paper presents results of an experiment testing how the personality dimension agreeableness interacts with different organizational factors to affect the strategy chosen when entering a budget negotiation. Prior budget research suggests firms invite subordinates into budget negotiations primarily to elicit private information from subordinate managers. However, criticism of traditional budgeting processes suggests subordinates will act strategically in such negotiations, limiting the effectiveness of inviting managers into budget negotiations. This study hypothesizes the factors most criticized, including budget targets in performance evaluation, will interact with certain organizational factors, connectedness of organizational units, and an individual personality dimension to significantly affect the amount of information managers share through the choice of negotiation strategy. Results indicate such interaction may impact how and to what extent information is shared in the budget negotiation, suggesting important implications for how budget managers approach budget negotiations.

Keywords: budget, budget negotiation, personality, participative budgeting

### **Introduction**

While budgeting generally, and subordinate involvement in budget preparation in particular, have been one of the most researched topics in management accounting (Shields and Shields 1998), the area remains largely unsettled (Derfuss 2016). In particular, how and to what extent factors related to the budget development process address the fundamental agency problem of eliciting private information from subordinate managers (agents) remains unresolved (Brown, Evans Iii, and Moser 2009). Eliciting such information to better manage organizational planning is a fundamental reason firms invite participation in the budgeting process (Shields and Shields 1998). However, critics, most notably the Beyond Budgeting Roundtable, argue traditional budgeting practices incentivize participating managers to use their private information strategically for personal advantage, harming firm efficiency and profitability (Libby and Lindsay 2010). Given this, adding to the understanding of factors influencing such information sharing would significantly contribute to both academia and practice.

This paper reports the results of an experiment exploring how personality affects subordinate response to two structural factors around the budget negotiation process: the degree of budget focus in performance evaluation and the level of interdependence between organizational units. An interaction between these factors and the personality dimension agreeableness, part of the “Big Five” personality framework, affecting the intention of pursuing integrative negotiation strategies is hypothesized.

Integrative strategies approach negotiation with a “win-win” perspective. They require the negotiator to more openly provide private information to achieve optimally beneficial negotiation outcomes for all parties. Generally integrative strategies produce better overall outcomes, but are used less often than distributive strategies, which approach negotiation as a win/lose proposition, due to the greater effort and trust required of integrative strategies (McCracken, Salterio, and Schmidt 2011; Neale and Bazerman 1985).

Since a primary reason firms involve subordinate managers in the budgeting process is for those managers to provide information to better coordinate firm interdependencies (Shields and Shields 1998), the implicit goal of initiating budget negotiations is to prompt the utilization of integrative negotiation strategies. Use of integrative negotiation strategies increases the flow of information during the budgeting process, resulting in improved firm planning and control. Therefore, factors which affect the intention to utilize integrative negotiation strategies during budget negotiations should be of ample interest to the accounting discipline.

Results of the experiment indicate a moderating relationship between the personality dimension agreeableness and the aforementioned structural factors impacting the intent to utilize an integrative negotiation strategy. Certain combinations correlate with a reduced intent, while others correlate with a greater intent. Such insights aid practitioners in better approaching budget negotiations to advance planning and control, and advance the academy’s understanding of the budgeting process.

The rest of the paper is structured as follows. A review of relevant literature related to budget negotiation and personality along with research hypotheses is presented in the section “Theory and Hypotheses.” The section “Methodology” then describes the experiment performed. Results and hypotheses tests are presented in the section “Results.” Implications and limitations of the experiment are presented in the section “Discussion and Limitations.”

## **Theory and Hypotheses**

### **Budget Negotiation**

Budgets routinely function as a central component of planning and control systems (Arnold and Gillenkirch 2015; Covaleski, Evans Iii, Luft, and Shields 2003). However, the use of budgets for both planning and control purposes creates conflicting pressures and incentives within organizations (Libby and Lindsay 2010). Planning functions require an open exchange of information to develop accurate forecasts and optimally coordinate organizational interdependencies. Control, particularly performance evaluation, incentivizes less open exchange. Subordinates held accountable for performance against a budget target may attempt to obtain easier targets by sharing, or withholding, information strategically (Libby and Lindsay 2010).

Of particular concern in budgeting research has been how the structure of the budgeting process affects the sharing of information from subordinate to superior. Agency theory posits that subordinates will use the information asymmetry created by the presence of subordinate private information to obtain favorable performance contracts. Given this, superiors utilize the budget contract and budget setting process to incentivize the subordinate to share private information. More complete and accurate information improves organizational planning, and enables managers to craft optimal incentives for performance evaluation and control. (Brown et al. 2009; Derfuss 2016; Sprinkle, Williamson, and Upton 2008).

In practice, the process of engaging subordinates and crafting a budget is conducted through negotiation (Fisher, Frederickson, and Pfeffer 2000). Recent budget negotiation research has suggested subordinates do act strategically within the negotiation process (Fisher, Pfeffer, Sprinkle, and Williamson 2015); however, subordinates routinely do not claim as much slack as possible in budget negotiations (Brown et al. 2009). Understanding the factors which drive how and to what extent subordinates share private information remains a largely underdeveloped area of management accounting research.

### **Negotiation Strategy**

While budget negotiation research has suggested subordinates act strategically in their negotiations (Fisher et al. 2015), this line of research primarily focusses on whether negotiations end in agreement, or assignment of a budget by the superior (Fisher et al. 2000; Fisher, Frederickson, and Pfeffer 2006; Fisher, Maines, Pfeffer, and Sprinkle 2002). This approach fails to consider the myriad components which comprise the negotiation process. Such factors can affect a negotiator's willingness to share information.

Specifically, the negotiation strategy a participant chooses will guide whether information is shared freely or shared strategically to gain an advantage. Negotiation strategies fall into two broad classifications: integrative or distributive. When pursuing an integrative negotiation strategy, a negotiator attempts to find an outcome where all parties get as much of what they desire from the negotiation as possible. In contrast, a negotiator pursuing a distributive negotiation strategy tends to view the interaction through a framework where any gain for the other party results in reduced outcome for themselves. The strategy a negotiator chooses will have a substantial impact on how he shares information, and has been consistently shown to significantly impact the ultimate negotiation outcome (Bame-Aldred and Kida 2007; Gibbins, McCracken, and Salterio 2010; McCracken et al. 2011; Neale and Bazerman 1985).

Typically, negotiators default to pursuing distributive negotiation strategies. Such strategies are appropriate for many typical negotiation situations, such as haggling over a price. Moreover, such strategies require less cognitive effort, viewing the negotiation as a fixed set of factors, and only require the negotiator consider their own outcome (Neale and Bazerman 1985; Thompson 2000).

Primary tactics utilized by negotiators pursuing a distributive strategy include contending, compromising, and conceding. Contending tactics attempt to aggressively assert claim to as much of the negotiation set as possible and force concessions from the other party. Making a low offer price when negotiating the purchase price of a car would be a contending tactic. Compromising strategies attempt to find a middle ground between the parties. "Split-the-difference" type strategies would fall in this classification, where the parties each make some concessions to find an agreeable resolution. Lastly, conceding strategies involve making a strategic concession from one's position to benefit the other party. Such strategies reduce the negotiators claim on the negotiation area, but the concession can prompt concessions from the other party, moving the negotiation toward an agreement. For instance, a car salesman might offer a longer loan term, prompting the buyer to accept a higher purchase price (Esser and Komorita 1975; McCracken et al. 2011; Thompson 2000).

In contrast, negotiators pursuing an integrative negotiation strategy view the area of possible agreement as flexible. Most commonly these strategies involve expanding the agenda and/or problem solving. Expanding the agenda strategies involve bringing more issues into the negotiation area, allowing parties to make beneficial trade-offs. This allows parties to make

concessions on issues of low importance to them, but which hold greater importance to other parties. For instance, a car salesman might offer free carwashes and coupons for a percent off service work with the car purchase. By bringing factors beyond the price and loan terms into the negotiation, each side can obtain more of what they desire in the negotiation outcome while conceding areas of less importance to them. Problem solving strategies involve the parties finding alternative routes to each negotiator's desired outcome. This strategy, like expanding the agenda, involves finding win-win trade-offs. However, instead of increasing the negotiation area negotiators look more intently at the possible trade-offs to find areas which the parties value differently. In the car purchase example a salesman pursuing a problem solving strategy would first seek to fully understand the car purchaser's circumstance and needs, and then seek to find a way to meet those while generating the required profit (Bame-Aldred and Kida 2007; McCracken et al. 2011; Thompson 2000).

Accountants tasked with negotiating budgets for their organization have substantial interest in the negotiation strategies employed. If negotiation partners pursue an integrative negotiation strategy more information will be offered, improving planning and control, and allowing more optimal performance incentives to be developed. However, budget negotiations contain unique features which could affect the negotiation strategies chosen. Budget negotiations conclude with performance goals for which parties are responsible (budget targets) instead of a transaction (like the purchase of a car). Even more, the subordinate party will typically be held accountable for meeting the agreed-upon target. As budget critics contend, such accountability incentivizes budget negotiators to act strategically and claim as much benefit as possible (Libby and Lindsay 2010).

The outcomes of budget negotiations may also impact other units in the firm beyond those of the negotiating parties. The realization that an agreement impacts other parties would be expected to prompt greater consideration of the affected parties. Such realization may affect how parties approach the negotiation. In circumstances with greater interdependence, where the outcome of a negotiation has impact beyond the immediate negotiator, the knowledge of that greater span of impact would be expected to induce greater use of integrative negotiation strategies and less use of distributive strategies (DeRue, Conlon, Moon, and Willaby 2009; Pruitt 1983). In contrast, circumstances with lower interdependence, where the negotiation outcome only affects the immediate participants, would likely incentivize use of more distributive negotiation strategies. For example, in a budget negotiation a business unit manager who only sees his unit's interests would be expected to claim as many resources as possible to improve his unit's position. Any gain surrendered worsens the unit's position without any obvious benefit, thus the utilization of distributive strategies to approach the negotiation as a win-lose exercise is the most logical choice.

However, in a budget negotiation with greater interdependence between business units, a business unit manager may well see the interaction differently. In such a circumstance the manager is aware that the outcome of the negotiation will impact other parties not directly involved in the interaction. The outcome could inform planning for stages of production after his. Alternatively, excess resources claimed by his unit could restrict the availability of resources for other units. The realization of other stakeholders whose well-being is impacted by the outcome of the unit manager's negotiation logically changes the strategy selection. The unit's well-being remains a central concern, but the impact of the negotiation outcome on other stakeholders' well-being factors into strategy selection as well.

Additionally, individual differences between negotiators may impact how these structural factors affect negotiation strategy selection. Ultimately negotiation and the choice of negotiation strategy is a behavioral choice. Certain personalities are driven more strongly by reward. Other personalities gravitate toward supporting others more naturally (Goldberg 1990; Judge 2002). The particular configuration of an individual's personality would be expected to affect the type of negotiation strategy to which they gravitate and are ultimately most comfortable pursuing in a given situation (Dimotakis, Conlon, and Ilies 2012).

### **Personality and Negotiation**

Increasingly, the generic negotiation literature has returned to the notion negotiation is an inherently behavioral endeavor, and individual differences (personality) affect how a person approaches the interaction (Dimotakis et al. 2012; Sharma, Bottom, and Elfenbein 2013). In this line of research personality factors typically function as an intervening variable moderating the impact of other variables influencing an individual's approach to negotiation. One particular personality dimension which has been shown to influence negotiation behaviors in the generic negotiation literature has been "agreeableness" (Dimotakis et al. 2012).

Agreeableness is one of the personality dimensions articulated in the "Big 5" model of personality (Goldberg 1981, 1990). While numerous models of personality have been propagated in academic research, the "Big 5" has ascended as a broadly accepted model of personality (Digman 1990). The "Big 5" posits that all individual differences can be categorized into five broad dimensions of personality: extraversion, conscientiousness, neuroticism, agreeableness, and openness to experience (McCrae and Costa 1985).

Within the Big 5 framework every individual possesses some measure of all five dimensions. However, an individual's typical behaviors will reflect the dimension(s) the individual possesses most prominently (DeYoung, Quilty, and Peterson 2007). Thus, someone characterized as highly agreeable would possess some measure of the other four dimensions: conscientiousness, extraversion, neuroticism, and openness to experience, but rate higher on the agreeableness dimension than the other four and predominantly demonstrate behaviors associated with this dimension.

Highly agreeable individuals tend to demonstrate substantial care for others along with a distinct disdain for conflict. Typical descriptors attached to highly agreeable individuals include: kind, caring, altruistic, tender, compassionate, cooperative, compliant, and meek. Highly agreeable individuals gravitate toward supporting others and prefer to avoid interpersonal conflict (Barrick, Mount, and Judge 2001; DeYoung et al. 2007; Goldberg 1992; Judge 2002; Judge, Simon, Hurst, and Kelley 2013).

Organizational behavior research suggests personality dimensions act as behavioral preferences which are activated by environmental opportunities (called "trait activation" in the literature) (Barrick et al. 2001; Barrick and Mount 1991, 2005). Trait activation occurs in moderately strong circumstances, when an interaction is salient enough to warrant a response, but not so intense the circumstance demands a particular response. Such circumstances allow for the expression of greater individuality and the exercising of individual preference (Dimotakis et al. 2012).

As stated earlier, the dimension of agreeableness has been shown to have moderating impacts in negotiation strategy selection and outcome (Dimotakis et al. 2012; Sharma et al. 2013). Highly agreeable individuals tend to be very sympathetic to others, altruistic, meek, and generally relationship oriented (Digman 1990; Goldberg 1990; McCrae and Costa 1985).

Generic negotiation research has shown agreeable individuals to generate lower outcomes in more competitive, distributive negotiations. Conversely, the natural other-focus of agreeable individuals would tend to be an asset in more integrative negotiations (Dimotakis et al. 2012; Sharma et al. 2013).

The unique characteristics of budget negotiation may prompt agreeableness trait activation and affect how highly agreeable individuals approach a budget negotiation. Generic negotiation research suggests accountability for results can create the necessary salience within a negotiation to prompt trait activation (Pruitt 1983). Second, greater interdependence within an organization would likely activate an agreeable individual's other-focused tendencies (Pruitt 1983).

Thus, one would expect agreeable individuals to be more likely to pursue other-focused integrative negotiation strategies in highly interdependent organizations; although, a budget focused performance evaluation may be necessary to make the budget negotiation sufficiently salient to evoke such differences. However, agreeable individuals' other-focused tendencies may also work against prompting some integrative negotiation strategies. While a problem-solving negotiation strategy points toward cooperation and collaboration, an expand-the-agenda type strategy requires greater assertiveness and potentially requires challenging one's negotiation counterpart to consider options outside the initial negotiation set. Such assertiveness would likely prove uncomfortable for highly agreeable individuals, particularly when the counterpart is an authority figure. Therefore, the following hypotheses are postulated (stated in alternate form):

H1: Highly agreeable individuals will be significantly less likely than other individuals to pursue an expand-the-agenda negotiation strategy in a highly interdependent circumstance.

H2: Highly agreeable individuals will be significantly less likely than other individuals to pursue an expand-the-agenda negotiation strategy in a highly interdependent circumstance with high accountability.

H3: Highly agreeable individuals will be significantly more likely than other individuals to pursue a problem solving strategy in a highly interdependent circumstance.

H4: Highly agreeable individuals will be significantly more likely than other individuals to pursue a problem solving strategy in a highly interdependent circumstance with high accountability.

## **Methodology**

### **Setting**

This study examines a setting in which a business unit manager must prepare for an upcoming budget negotiation with senior management. Specifically, participants adopted the role of unit manager of a regional lawn care service company. The lawn care industry was chosen because it should be generally relatable to the majority of participants and added a layer of richness to make the case more realistic and engaging for participants.

### **Participants**

The case study and survey questionnaires were initially pilot tested with undergraduate business students. Pilot test results showed effective experimental manipulations and

questionnaire delivery. Students received extra credit in an accounting class for participating in the pilot test.

Participants for the experiment were recruited from Amazon's Mechanical Turk (MTurk) crowdsourcing marketplace. Recent research suggests participants recruited through a service like Amazon's MTurk marketplace are at least as good a proxy for the general working populace as students, and possibly better (Buchheit, Doxey, Pollard, and Stinson 2018). An MTurk task was submitted requesting 100 observations. Participants responding to the task were linked to an online survey. Participants read one of four scenario manipulations and then answered questions about their likelihood to use various negotiation strategies in the upcoming budget negotiation.

Of the 100 responses solicited, 94 usable responses were obtained. The 6 unused responses all failed to complete significant portions of the experimental questionnaires and/or significantly failed manipulation checks. Participants who successfully completed all components of the questionnaire received a code to input in the MTurk system to receive compensation for completing the task.

### **Procedure**

Participants were randomly assigned to one of four case manipulations. Interdependence and budgetary performance evaluation focus (accountability) were each manipulated at two levels (high and low) creating a 2 X 2 fully crossed experimental design. In the high interdependence manipulation individual units were supported by shared services for a variety of specialty work requiring specific skills, often requiring licenses, and/or specialty equipment. The case highlighted that the quantity of such resources was limited and if a unit planned for greater quantities than necessary access to these resources would be limited to other units. In the low interdependence manipulation such specialty services were acquired by each unit contracting with specialty providers and the unit was responsible for correctly forecasting and managing its use of such services. In the high budget performance evaluation focus the firm measures several factors for performance evaluation of unit managers, but considers meeting budget targets the primary responsibility of unit managers. In the low budget performance evaluation manipulation meeting budget targets is one of several measures used to assess unit managers, but is not considered more significant than other measures.

After reading the case scenario participants indicated how likely they would be to use a series of negotiation strategies. Each strategy statement was accompanied with a 5-point Likert scale anchored with "Very Unlikely" and "Very Likely." Participants indicated their likelihood of using a particular strategy by selecting the point which best fit their intentions. The strategy options were adapted from Gibbins, McCracken, and Salterio (2010). This instrument is drawn from a long established and validated inventory of negotiation strategies (Goodwin 2002; Lewicki, Barry, and Saunders 2010; Rahim 1983; Rahim and Magner 1995). Minimal editing was performed to fit the particulars of this case. Editing did not change essential wording, but did alter specific names to fit the scenario presented.

The instrument consists of 25 statements reflecting five negotiation strategies. Two strategies reflect integrative approaches: expand the agenda and problem solving. The other three strategies reflect distributive approaches: contend, concede, and compromise. Although the distributive strategies are not considered in the hypotheses postulated, data was collected regarding them. The ten statements from the instrument reflecting the two integrative strategies of interest in this study follow.

**Statements used to assess Expand the Agenda negotiation strategy intention were:**

- I would attempt to bring additional issues to the discussion, such that I could trade off on these issues to resolve this issue in my favor
- I would attempt to find other issues with management, so I could accede to their wishes at the same time as achieving my position on this issue
- I would provide all relevant information to management so we could solve this issue together in the context of other issues
- I would attempt to find other issues with management, which would add to the discussion
- I would try to work with management to develop a proper understanding of this issue in the context of other issues

**Statements used to assess Problem Solving negotiation strategy intention were:**

- I would collaborate with management to come up with a new solution acceptable to both of us
- I would try to work with corporate management to find new solutions to this issue that satisfy both our expectations
- I would try to investigate the issue further with corporate management to find a new solution acceptable to both of us
- I would try to bring all my concerns about this issue out into the open with management so that the issue could be resolved in the best possible way
- I would try to integrate my ideas about how to resolve this issue with corporate management to come up with a new solution jointly

After completing the negotiation strategy assessment participants completed a short manipulation check of the experimental manipulations and then asked to respond to a 100-item personality assessment adapted from DeYoung et al (2007). The 100 items consisted of individual statements describing specific characteristics. Participants were asked to rate how well each statement described themselves. No changes in wording were made. Participants responded on a five-point Likert scale, as with prior experimental questions. The scale was anchored with “Very Inaccurate” and “Very Accurate.” The twenty statements relating to the agreeableness personality dimension adapted from DeYoung et al. (2007) are:

- Am not interested in other people’s problems (reverse coded)
- Feel others’ emotions
- Inquire about others’ well-being
- Can’t be bothered with other’s needs (reverse coded)
- Sympathize with others’ feelings
- Am indifferent to the feelings of others (reverse coded)
- Take no time for others (reverse coded)
- Take an interest in other people’s lives
- Don’t have a soft side (reverse coded)
- Like to do things for others
- Respect authority
- Insult people (reverse coded)
- Hate to seem pushy

- Believe that I am better than others (reverse coded)
- Avoid imposing my will on others
- Rarely put people under pressure
- Take advantage of others
- Seek conflict (reverse coded)
- Love a good fight (reverse coded)
- Am out for my own personal gain (reverse coded)

Finally, demographic and work experience data was collected. Participants then received a code which they provided in the Amazon MTurk system to receive compensation.

### **Analysis and Measures**

Hypotheses for this study are assessed performing a 2X2X2 ANOVA. Organizational interdependence (Interdep) was manipulated at HIGH (1) and LOW (0) levels. Similarly, budget performance evaluation (PerfEval) focus was also manipulated at HIGH (1) and LOW (0) levels. Agreeableness was measured with 20 statements assessed on a 5-point Likert scale. Initial assessment of the Agreeableness variable indicated some deviation from normality. Rather than perform a transformation, since the hypotheses lent themselves to analysis with an ANOVA, a median split was performed transforming the responses into a categorical variable (AGRSPL) with HIGH (1) and LOW (0) classifications. To code the median split all observations were sorted by the value of the Agreeableness variable (high to low), the half of observations with the highest scores were assigned to the HIGH (1) coding and the remaining observations, the half with the lowest values on the Agreeableness variable were coded to the LOW (0) classification. Thus, the strength of the Agreeableness dimension of all 94 usable responses was assessed. The half showing the strongest intensity were coded as HIGH, and the half of responses showing lower strength were coded LOW. ANOVA analysis also requires homogeneity of variance, normality, and independence of observations. No violations of these requirements were observed.

Separate ANOVAs were run for each of the two integrative strategies tested: expand the agenda and problem solving. Tables 1 and 2 report the descriptive statistics and ANOVA results with the expand the agenda strategy as a dependent variable. Tables 3 and 4 report the descriptive statistics and ANOVA results with the problem solving strategy as the dependent variable.

### **Test of Hypotheses H1 and H2**

Hypothesis H1 predicted a 2-way interaction between the personality variable agreeableness and the degree of interdependence within organizational units with the likelihood of utilizing an “Expand the Agenda” integrative negotiation strategy. Table 2 presents the “Test of Between Subjects Effects” results of a 2X2X2 ANOVA run in SPSS. Support for H1 would indicate the mean likelihood for participants in the HIGH interdependence condition who also exhibited HIGH levels of agreeableness were significantly less likely to pursue an expand the agenda negotiation strategy than other participants.

## Results

Table 1

Descriptive Statistics						
Dependent Variable: Expand						
PerfEval	Interdep	AGRSPL	Mean	Std. Dev	N	
0	0	0	3.614286	.568205	14	
		1	4.036364	.527774	11	
		Total	3.800000	.580230	25	
	1	1	0	3.925000	.692305	8
			1	3.214286	.480156	14
			Total	3.472727	.651870	22
	Total	Total	0	3.727273	.618894	22
			1	3.576000	.643739	25
			Total	3.646809	.629993	47
1	0	0	3.815385	.395487	13	
		1	3.672727	.781141	11	
		Total	3.750000	.593442	24	
	1	1	0	3.766667	.416333	12
			1	3.563636	.697528	11
			Total	3.669565	.564426	23
	Total	Total	0	3.792000	.397827	25
			1	3.618182	.724823	22
			Total	3.710638	.574545	47
Total	0	0	3.711111	.494067	27	
		1	3.854545	.676635	22	
		Total	3.775510	.581138	49	
	1	1	0	3.830000	.532225	20
			1	3.368000	.599110	25
			Total	3.573333	.609918	45
	Total	Total	0	3.761702	.508430	47
			1	3.595745	.675650	47
			Total	3.678723	.600515	94

Table 2

<b>Tests of Between-Subjects Effects</b>								
Dependent Variable: Expand								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>b</sup>
<b>Corrected Model</b>	5.452 <sup>a</sup>	7	.779	2.385	.028	.163	16.694	.832
<b>Intercept</b>	1250.861	1	1250.861	3830.220	.000	.978	3830.220	1.000
<b>PerfEval</b>	.001	1	.001	.004	.953	.000	.004	.050
<b>Interdep</b>	.639	1	.639	1.956	.165	.022	1.956	.282
<b>AGRSPL</b>	.574	1	.574	1.758	.188	.020	1.758	.259
<b>PerfEval * Interdep</b>	.178	1	.178	.546	.462	.006	.546	.113
<b>PerfEval * AGRSPL</b>	.005	1	.005	.014	.905	.000	.014	.052
<b>Interdep * AGRSPL</b>	2.031	1	2.031	6.220	.015	.067	6.220	.694
<b>PerfEval * Interdep * AGRSPL</b>	1.641	1	1.641	5.025	.028	.055	5.025	.601
<b>Error</b>	28.086	86	.327					
<b>Total</b>	1305.640	94						
<b>Corrected Total</b>	33.537	93						

a. R Squared = .163 (Adjusted R Squared = .094)

b. Computed using alpha = .05

### Variable Definitions

Expand: Dependent variable representing intent to use an Expand the Agenda negotiation strategy

PerfEval: Categorical variable representing level of budget focus in manager performance evaluation (0 = low; 1 = high)

Interdep: Categorical variable representing level of interdependence between organizational units (0 = low; 1 = high)

AGRSPL: Categorical variable representing a median split of the Agreeableness personality dimension responses (0 = low; 1 = high)

PerfEval \* Interdep: Interaction term representing interaction of Performance Evaluation and Interdependence variables

PerfEval \* AGRSPL: Interaction term representing interaction of the Performance Evaluation and Agreeableness variables

Interdep \* AGRSPL: Interaction term representing interaction of the Interdependence and Agreeableness variables

PerfEval \* Interdep \* AGRSPL: Interaction term representing three-way interaction between Performance Evaluation, Interdependence, and Agreeableness

The ANOVA results indicate a significant interaction between the interdependence variable (Interdep) and the median-split Agreeableness variable (AGRSPL) with a p-value < .05 (Sig reported at .015) and the overall effect size, the impact of the independent variables on the dependent variable, is moderate with a Partial Eta Squared, the proportion of the Sum of Squares-Effect and Sum of Squares-Error attributable to the effect (Cohen 1973) of .067. General rules of thumb for interpreting effect sizes, including eta-squared and partial eta-squared, group effect sizes into three classifications: around .01 is considered small, around .06 is considered medium, and .14 is considered large (Cohen 2013). The noncentrality parameter and observed power both attest to the power of the specific test to correctly reject a false null hypothesis (Koele 1982).

H1 stipulated a negative impact from the interaction. A review of the means for each cell support the directionality predicted. Thus H1 is supported.

Hypothesis H2 predicted a 3-way interaction between interdependence, budget focus in performance evaluation (PerfEval), and agreeableness with a negative impact on intention to utilize expand the agenda negotiation strategy. The three-way interaction term reported in Table 2 indicates a statistically significant three-way interaction between the variables (p-value < .05; reported significance of .028). The partial eta squared of .055 is a moderate effect size (Cohen, Cohen, West, and Aiken 2013). Thus H2 is supported.

However, a review of the 8 cell means in the 2X2X2 ANOVA shows a complex interaction between the three independent variables on the dependent variable which may warrant additional exploration. Of the 8 cell means, the two lowest, indicating lowest intention to pursue an expand the agenda negotiation strategy, are the high performance evaluation/high interdependence/high agreeableness cell and the low performance evaluation/high interdependence/high agreeableness cell. Intriguingly as noted in Table 1, the high performance evaluation/high interdependence/high agreeableness cell mean is greater than the low performance evaluation/high interdependence/high agreeableness cell mean (3.563636 compared to 3.214286).

### **Test of Hypotheses H3 and H4**

Hypothesis H3 predicted a two-way interaction between interdependence and agreeableness. However Table 4 indicates no statistically significant interaction between these two variables. Reported p-value is .444. Therefore, hypothesis H3 is not supported. Hypothesis H4 predicted a three-way interaction between interdependence, budget focus in performance evaluation, and agreeableness with a positive impact on likelihood of using a problem solving negotiation strategy. Table 4 indicates a statistically significant (p-value < .05, reported significance of .029) interaction. The reported effect size is moderate (Partial Eta Squared of .054) (Cohen 1973). The fields noncentrality parameter and observed power again report the power of the individual test, the probability of correctly rejecting a null hypothesis which is in fact false (Koele 1982).

A review of the means for each condition suggests the effect is in the correct direction. Therefore, H4 is supported. Additionally, while not a hypothesis of this study, a significant interaction between performance evaluation focus and organizational interdependence is reported.

Table 3

<b>Descriptive Statistics</b>						
Dependent Variable: ProbSolv						
PerfEval	Interdep	AGRSPL	Mean	Std. Deviation	N	
0	0	0	3.842857	.628447	14	
		1	4.163636	.488411	11	
		Total	3.984000	.582866	25	
	1	1	0	3.950000	.520988	8
			1	3.542857	.510978	14
			Total	3.690909	.540643	22
	Total	Total	0	3.881818	.581162	22
			1	3.816000	.582866	25
			Total	3.846809	.576666	47
1	0	0	3.753846	.643707	13	
		1	3.909091	.836008	11	
		Total	3.825000	.725468	24	
	1	1	0	4.000000	.511682	12
			1	4.509091	.372705	11
			Total	4.243478	.511527	23
	Total	Total	0	3.872000	.585605	25
			1	4.209091	.702315	22
			Total	4.029787	.658032	47
Total	0	0	3.800000	.625115	27	
		1	4.036364	.680718	22	
		Total	3.906122	.654602	49	
	1	1	0	3.980000	.502206	20
			1	3.968000	.662520	25
			Total	3.973333	.590223	45
	Total	Total	0	3.876596	.577179	47
			1	4.000000	.664635	47
			Total	3.938298	.622189	94

Table 4

## Tests of Between-Subjects Effects

Dependent Variable: ProbSolv

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>b</sup>
Corrected Model	6.958 <sup>a</sup>	7	.994	2.943	.008	.193	20.601	.913
Intercept	1431.247	1	1431.247	4237.882	.000	.980	4237.882	1.000
PerfEval	.646	1	.646	1.912	.170	.022	1.912	.277
Interdep	.158	1	.158	.467	.496	.005	.467	.104
AGRSPL	.477	1	.477	1.411	.238	.016	1.411	.217
PerfEval * Interdep	2.638	1	2.638	7.812	.006	.083	7.812	.789
PerfEval * AGRSPL	.804	1	.804	2.381	.126	.027	2.381	.332
Interdep * AGRSPL	.200	1	.200	.591	.444	.007	.591	.118
PerfEval * Interdep * AGRSPL	1.670	1	1.670	4.944	.029	.054	4.944	.594
Error	29.045	86	.338					
Total	1493.960	94						
Corrected Total	36.002	93						

a. R Squared = .193 (Adjusted R Squared = .128)

b. Computed using alpha = .05

## Variable Definitions

ProbSolv: Dependent variable representing intent to use a Problem Solving negotiation strategy

PerfEval: Categorical variable representing level of budget focus in manager performance evaluation (0 = low; 1 = high)

Interdep: Categorical variable representing level of interdependence between organizational units (0 = low; 1 = high)

AGRSPL: Categorical variable representing a median split of the Agreeableness personality dimension responses (0 = low; 1 = high)

PerfEval \* Interdep: Interaction term representing interaction of Performance Evaluation and Interdependence variables

PerfEval \* AGRSPL: Interaction term representing interaction of the Performance Evaluation and Agreeableness variables

Interdep \* AGRSPL: Interaction term representing interaction of the Interdependence and Agreeableness variables

PerfEval \* Interdep \* AGRSPL: Interaction term representing three-way interaction between Performance Evaluation, Interdependence, and Agreeableness

A review of the cell means reported in the descriptive statistics (Table 3) shows the cell mean for the high performance evaluation, high interdependence, and high agreeableness condition is the highest of all the cell means (4.509091). This suggests the combination of these factors correlates with a greater intention to pursue a problem solving negotiation strategy

### **Discussion and Limitations**

This study hypothesized the personality dimension agreeableness would interact with organizational factors, specifically the degree of focus on meeting budget targets in a manager's performance evaluation and the level of interdependence to affect the likelihood of pursuing an integrative negotiation strategy during budget negotiations. Results of hypotheses tests generally support the predicted interactions. Such interactions provide important insight for managers regarding how different individuals may approach sharing information in a budget negotiation. Specifically, the results suggest more agreeable individuals will be more likely to pursue negotiation strategies which work through the existing set of negotiation issues, seeking optimal tradeoffs (a problem solving strategy) when the organization's units are interdependent and their own performance evaluation includes greater accountability for meeting budget targets. However, the results also suggest more agreeable individuals will be significantly less likely to bring new ideas into the budget negotiation (pursue an expand the agenda negotiation strategy) when their organization's units possess a greater level of interdependence.

Such insights provide significant value to both practice and the academy. Prior budget research suggests obtaining information to coordinate firm interdependencies is a primary reason firms involve subordinates in the budgeting process (Shields and Shields 1998). The results of this study suggest both structural and behavioral factors affect the likelihood of achieving that desired result. Thus, to achieve the intended outcomes for which unit managers were brought into the budgeting process, managers will need to tailor their approach to the negotiations to reflect both the specific circumstances of their firm and the individuality of the manager on the other side of the negotiation.

Specifically, the results of this study suggest the generally other-focused personality dimension agreeableness will interact with structural factors around the budgeting process in important ways which affect the amount of information provided by unit managers. The results suggest these individuals do respond to increased accountability with greater information sharing. However, greater awareness of the connectivity between organizational units seems to reduce their willingness to offer new ideas, but increases their willingness to work through issues already present. So, while such managers in an organization with strong interdependencies might not readily offer new ideas (expand the agenda) to address issues like resource shortages, new revenue opportunities, and process bottlenecks, these results suggest they may offer greater information and insights to work through them (problem solving) when already on the negotiation table. Therefore, being aware of how particular managers respond to institutional factors can help budget managers maximize the value of budget negotiations and ultimately help improve firm performance and profitability.

Additionally, the results of this study offer potentially potent counterpoints to major criticisms of the traditional budgeting process. A core criticism of the "Beyond Budgeting" critique is that the use of budget targets for performance evaluation can create dysfunctional performance incentives (Libby and Lindsay 2010). However, the results of this study suggest the greater salience created by higher accountability for meeting budget targets may be an important

component in eliciting greater information sharing. Specifically, highly agreeable individuals express a greater intent to pursue a problem solving negotiation strategy in conditions of greater organizational interdependence when meeting budget targets is a core component of their performance evaluation. Thus, rather than reducing the amount of information provided by participants, the greater salience and focus generated by making achieving budget targets part of the performance evaluation process appears to increase the amount of information offered.

This work also provides several promising avenues for possible future research. While this work focused on the personality dimension agreeableness, other personality dimensions may impact responses to budget negotiation as well. Also, little focus in the extant literature around budget negotiation has been paid to the negotiation strategies employed by participants. This work contributes to the broader budgeting literature by introducing a budgeting application of the theory developed in the generic negotiation literature and opens avenues for further development of this theory within the unique budgeting context. Also, the three-way interaction between performance evaluation, interdependence, and agreeableness' relationship with intention to pursue an expand the agenda negotiation strategy warrants further investigation.

Like all experimental studies, this study must be qualified with several limitations. First, this study relied on participant responses to a role-play type case. The responses are only generalizable to the extent that case elicited responses similar to those exhibited in an actual work environment. No case can fully capture the richness and weight of an actual employment situation. Secondly, the experiment drew participants from an online crowdsourcing marketplace (Amazon's MTurk). Again, the results of the study can only generalize to the extent this marketplace of participants can approximate actual subordinate managers' responses.

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