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Appendix F from Fernbach, Kan, and Lynch, "Squeezed: Coping with Constraint through Efficiency and Prioritization"

(JCR, vol. 41, no. 5, p. 000)

DETAILS OF CORRELATIONAL PILOT TO STUDY 4

This appendix contains procedures and results for the correlational budgeting study we conducted as a pilot to study 4. This pilot and study 4 presented in the main article were intended to test hypothesis 4 in the main article that budgeting prior to resource consumption will increase the shift in the planning mix toward prioritization and decrease dysfunctional behaviors.

H4a—Budgeting prior to resource consumption increases the shift in the mix of planning strategies toward prioritization relative to efficiency.

H4b—Budgeting prior to resource consumption decreases dysfunctional behaviors.

Our theory posits that planning and dysfunctional behaviors are different ways of reacting to increasing constraint. Thus, a more specific hypothesis is that these effects should be concentrated among those who are highly constrained. It is when one is close to a binding constraint that budgeting is most useful in clarifying an emerging problem in time to cope by increasing prioritization.

H4c—The effects of budgeting on prioritization and dysfunction will be greater for those who are highly constrained.

Methods and Measures

In December 2012, we recruited 153 US residents via Amazon's Mechanical Turk to complete a holiday shopping survey for a $0.70 payment. Participants responded to a series of questions about their tendency to engage in efficiency planning, priority planning, and budgeting, as well as their tendency to exhibit dysfunctional behaviors related to overspending. They also completed the long run version (planning in the next 1–2 months) of the propensity to plan for money scale (Lynch et al. 2010), reported subjective financial constraint, and a battery of demographics. Items used to measure each of these concepts are summarized below.

Efficiency Planning was measured as the average of the same three 5-point scale items used in the pilot study in the introduction ($\alpha = .62$, $M = 3.65$, SD $= .76$), revised for the holiday shopping context.

Priority planning was measured as the average of the same five items used in the pilot study ($\alpha = .68$), revised for the holiday shopping context ($M = 3.52$, SD $= .65$).

Planning mix = priority planning – efficiency planning ($M = -.13$, SD $= .92$).

Budgeting was measured as the average of responses to two questions coded 1 = strongly disagree, 6 = strongly agree: "I set an overall budget for my holiday shopping before I begin shopping," and "For each person on my shopping list, I figure out what I'll spend beforehand" ($\alpha = .81$, $M = 4.46$, SD $= 1.17$).

Dysfunctional response was measured as the average of responses to two questions coded 1 = never, 5 = always: "When I see I'm spending much more than expected, I throw up my hands and figure I'll deal with it after the holidays," and "When I'm shopping and realize I'm already over budget, I find myself making more erratic shopping decisions and not shopping as carefully" ($\alpha = .66$, $M = 2.37$, SD $= .93$).

Propensity to plan was assessed using the six-item propensity to plan for money (long run version) from Lynch et al. (2010; $\alpha = .93$, $M = 4.38$, SD $= .98$).

Subjective financial constraint was measured by averaging the *Z*-score of a respondent's answers to two questions ($\alpha =$ .76): "How would you describe your financial situation?" 1 = very constrained, 5 = very comfortable ($M = 2.63$, SD $=$ 1.13); "Imagine that next month you had an unexpected expense of $1,500 such as a medical bill or a necessary car repair. How likely is it that you would be able to pay this bill in full and on time without having to dip into your retirement fund, borrow money or charge it to a credit card?" 1 = very unlikely, 11 = very likely ($M = 4.95$, SD $=$

3.70). We reverse coded these averaged *Z*-scores so that higher numbers reflected higher constraint and less resource slack. The composite had $M = 0$, SD $= .90$.

Demographics: Age, gender, yearly household income, education level.

Results

Discriminant Validity

We replicated our results from the pilot study for study 1, showing discriminant validity of the set of efficiency planning behaviors from priority planning behaviors. We also found that these were distinct from propensity to plan.

Construct Intercorrelations

Table F1 shows the correlations among the constructs measured in this study. Perceived constraint was positively related to dysfunctional response to overspending. This broadly agrees with hypothesis 3 and our study 3 finding of dysfunctional response by people who experience high levels of self-induced constraint as a result of delaying prioritization. Priority planning had a marginally significant positive relation to perceived constraint, consistent with hypothesis 2a and the findings in studies 2 and 3. Priority planning related positively to using a budget and propensity to plan (all $r > .46$). Efficiency planning had weak positive relations to priority planning, budgeting, and propensity to plan. Income was negatively related to perceived constraint. Budgeting was unrelated to constraint or to income, but was negatively related to dysfunctional responses to overspending and positively related to propensity to plan. Dysfunctional responses to overspending were also negatively related to income and age. Education, age, and gender were related to each other but unrelated to the other constructs.

Budgeting and the Planning Mix

We analyzed the planning mix (priority planning – efficiency planning) as a function of constraint, budgeting, and their interaction. At the mean level of constraint (0), there was a simple main effect of budgeting on the planning mix, such that more budgeting increased the proportion of priority to efficiency planning ($\beta = .189$, $t(149) = 3.104$, $p = .0023$).

This effect of budgeting interacted with constraint ($\beta = .1408$, $t(149) = 2.223$, $p = .0278$). Figure F1 shows that more budgeting increased the tendency to engage in more priority planning than efficiency planning, and more so for higher levels of constraint, consistent with hypotheses 4a and 4c. A "floodlight" test (Spiller et al. 2013) revealed a significant, positive effect of budgeting for all values of constraint higher than the Johnson-Neyman point of -0.43. Taking the simple effects the other direction, for budgeting values of 4.2 and greater, more constraint is associated with more dominance of priority planning over efficiency planning.

Budgeting and the Dysfunctional Behaviors

We analyzed dysfunctional behaviors as a function of constraint, budgeting, and their interaction. Figure F2 shows that for *t*, the mean level of constraint (0), there was a simple main effect of budgeting on dysfunctional behaviors, such that more budgeting decreased dysfunction ($\beta = -.183$, $t(149) = -2.959$, $p = .0036$).

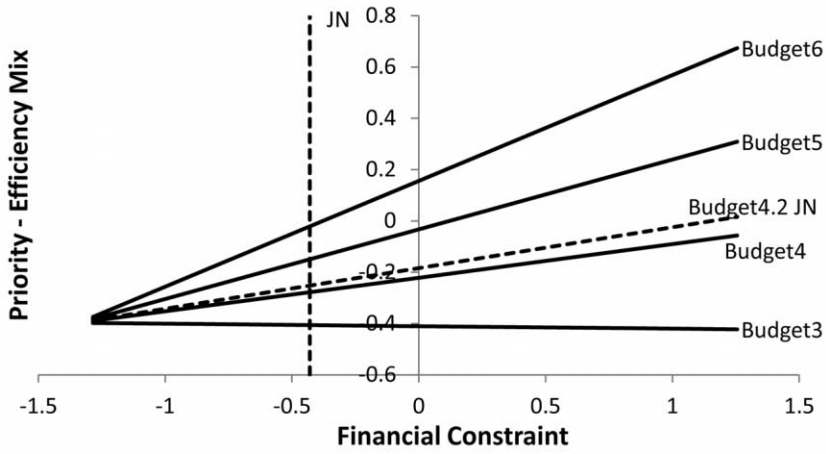
This effect of budgeting interacted with constraint. The simple effect of budgeting on decreasing dysfunctional behaviors was stronger at higher levels of constraint ($\beta = -.152$, $t(149) = -2.352$, $p = .0200$; see fig. F2). For constraint values of -0.37 or greater, more budgeting is associated with less dysfunctional behaviors. Taking the simple effects the other direction, one can say that lower budgeting predicted a stronger relationship between constraint and dysfunction. For budgeting values of 4.6 and less, there was a significant and positive simple slope of increasing constraint on dysfunction.

Discussion

The results of this study suggest that budgeting can help people cope with constraint by increasing the mix of priority planning to efficiency planning and decreasing dysfunctional responses. These apparent benefits of budgeting are strongest for those highest in self-reported constraint. This study is correlational and susceptible to alternative interpretations ruled on by study 4 in the main article.

FIGURE F1

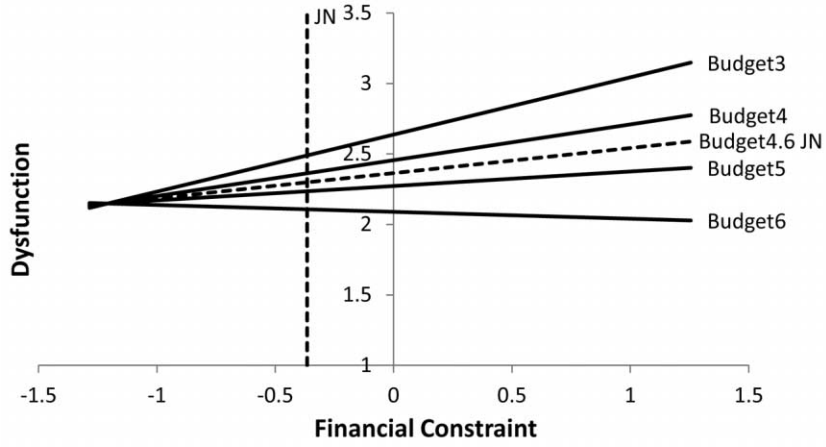
STUDY 4 PILOT STUDY



NOTE.—Interaction of extent of budgeting with perceived financial constraint on planning mix. Budget index ranges from 1 to 6. Financial constraint averages two Z scores ($M = 0$, SD $= .90$). The dashed lines represent the Johnson-Neyman (JN) points (Spiller et al. 2013). For financial constraint >-0.43, more budgeting is associated with a higher dominance of priority planning over efficiency planning. For budgeting values ≥ 4.2, more constraint is associated with a higher dominance of priority planning over efficiency planning.

FIGURE F2

STUDY 4 PILOT STUDY



NOTE.—Interaction of extent of budgeting with perceived financial constraint on dysfunctional behaviors. For financial constraint >-0.37, more budgeting is associated with less dysfunctional behaviors. For budgeting values ≤ 4.6, more constraint is associated with more dysfunctional behaviors.

Table F1. STUDY 4 PILOT STUDY: CORRELATIONS OF CONSTRAINT WITH EFFICIENCY PLANNING, PRIORITY PLANNING, BUDGETING, DYSFUNCTIONAL RESPONSE TO OVERSPENDING, PROPENSITY TO PLAN FOR MONEY, AND INCOME

	Constraint	Efficiency planning	Priority planning	Budget index	Dysfunction index	Propensity to plan	Household income
Constraint	1						
Efficiency planning	−.116	1					
Priority planning	.134	.161*	1				
Budget index	008	.132	.480**	1			
Dysfunction index	.178*	.086	.108	−.215**	1		
Propensity to plan	−.074	.154	.463**	.574**	−.100	1	
Household income	−.436**	.011	−.105	−.003	−.218**	−.049	1

*Significant at $p < .05$.

**Significant at $p < .01$.