The Influence of Categorical Framing on Budgeting
Leonard Lee, National University of Singapore, Singapore
Miaolei Jia, National University of Singapore, Singapore
Xiuping Li, National University of Singapore, Singapore

Consumers tend to set higher budgets for their next-month expenditure when they explicitly budget for component categories of consumption than when they simply set an overall budget. Contrary to the prediction of prior research, under categorical (vs. overall) framing, consumers’ self-reported actual spending deviated most from their budgets.

[to cite]:

[url]:
http://www.acrwebsite.org/volumes/1018848/volumes/ap11/AP-11

[copyright notice]:
This work is copyrighted by The Association for Consumer Research. For permission to copy or use this work in whole or in part, please contact the Copyright Clearance Center at http://www.copyright.com/.
The Effects of Workload, Numeracy, and Framing on Consumer Financial and Health Decision Making

Maura Scott, Florida State University, USA
Martin Mende, Florida State University, USA

Paper #1: The Influence of Categorical Framing on Budgeting
Miaolei Jia, National University of Singapore, Singapore
Xiuping Li, National University of Singapore, Singapore
Leonard Lee, National University of Singapore, Singapore

Paper #2: The Effects of Workload Level and Literacy on Consumer Compliance
Maura Scott, Florida State University, USA
Martin Mende, Florida State University, USA
Mary Jo Bitner, Arizona State University, USA
Amy Ostrom, Arizona State University, USA

Paper #3: Impact of Rounded Numbers on Preventive Decision Making
Monica Wadhwa, INSEAD, Singapore
Kuangjie Zhang, Nanyang Technological University, Singapore

SESSION OVERVIEW
This session features three papers in the area of consumer financial and health decision making, which focus on understanding how to encourage consumers to make decisions that foster well-being (i.e., developing and sticking with a financial budget, following financial advisor recommendations, complying with medical doctors’ recommendations, and reducing risky health behaviors). Paper 1 examines how categorical (versus overall) framing influences consumers’ financial budgeting decisions. Paper 2 studies how consumer workload level and literacy interact to influence compliance in medical and financial decision making. Paper 3 examines how the presentation of numerical cues influences risky health behaviors.

These papers converge with the potential to bring new insights and a lively discussion on the important topic of consumer health and financial well-being. Specifically, Papers 1 & 3 examine how numerical information is presented, and its effects on consumer financial and health decisions. Papers 1 & 2 study how to help consumers optimize financial planning, in terms of complying with a budget or with a financial advisor. Papers 2 & 3 uncover factors that influence consumer’s responsiveness to health messages and their willingness to engage in preventive health behaviors. In sum, this session extends the analytical realm of prior consumer research on financial and health decision making; it urges consumer behavior scholars to adopt a fresh perspective on how and why consumers make financial, health, and risk decisions.

The primary audience for this session is likely to consist of researchers interested in financial decision making, consumer health, numerosity, and consumer well-being. To facilitate a lively discussion, in the remaining time after the 3 presentations, presenters will jointly discuss the findings emerging from the presentations, guided by the discussants. The audience will be asked to provide ideas and to ask questions that address the linkages between the papers—as opposed to focusing on a specific paper. We propose to have two large pads of paper in the room in the front and back (to facilitate maximum involvement) and will encourage presenters and audience members to draw conceptual models of their connections between papers or to offer competing views. We seek to create a “workshop” atmosphere with interaction and discussion.

The Influence of Categorical Framing on Budgeting

EXTENDED ABSTRACT
Consumers frequently budget for various types of consumption (e.g., how much to spend next month, how much to spend on clothes or vacations each year). The amount they budget can have significant impact on their subsequent spending behavior (Cheema and Soman 2008). In this work, we investigate how different ways to arrive at one’s budget can affect the amount of budget that consumers set and, in turn, their actual level of expenditure.

Specifically, we test two ways that consumers typically use to arrive at a budget. First, consumers can set budgets for different constituent categories in order to derive an overall budget (“categorical framing”). The second approach is to set the overall budget with or without considering its constituent categories or components (“overall framing”). We propose that when consumers explicitly budget for individual constituent categories before setting an overall budget (“categorical framing”), they tend to set a higher overall budget than if they budget for their expenditure in aggregate regardless of whether they think about all the components of their consumption or not (i.e., “overall-with-reminders framing” and “overall-without-reminders framing”). Our theorization draws upon support theory – support theory suggests that the estimated probability of a multifaceted category increases when the category is unpacked into its components (Rottenstreich and Tversky 1997; Tversky and Koehler 1994). Although the core support theory has focused exclusively on probability judgments, recent related studies have shown that unpacking can increase numeric judgments in other domains as well (e.g., Tsai and Zhao 2011).

Study 1 was conducted to test our main hypothesis. Participants (N = 51) were randomly assigned to one of three budget-framing conditions: In the categorical condition, participants were asked to set individual budgets for their next-month spending in six major consumption domains (e.g., accommodation or rent, food and drinks, transportation, entertainment, clothing, and other expenses). The budgets set for the six categories were then summed up to derive their overall budget for the month. In the overall-with-reminders condition, they were asked instead to budget how much they would spend in the following month with the six aforementioned consumption domains provided as examples. Finally, in the overall-without-reminders condition, they were asked to budget how much they would spend in the following month without being reminded of the major consumption domains.

An ANOVA analysis revealed a significant effect of budget framing on participants’ set budget (F(2, 49) = 8.77, p = .001). Contrast analysis further indicated that participants set larger budgets under categorical framing (M = $949.44, SD = $470.52) than either overall-with-reminders framing (M = $555.88, SD = $307.15; t = -3.09, p = .003) or overall-without-reminders framing (M = $442.94, SD = $324.96; t = 3.97, p = .001). There was no significant difference in budgets between the overall-with-reminders condition and the overall-without-reminders condition (t = .87, p = .39).

Study 1 demonstrated that individuals set larger budgets under categorical framing than under the two types of overall framing (with and without reminders). A natural follow-up question is under which...
type of budget framing people would set more precise budgets when compared with their actual spending. If categorical framing indeed induces people to pay more attention to the component categories of consumption that they might overlook under overall budget framing (Tversky and Koehler 1994), then categorical framing (vs. overall framing) should lead to more precise budget setting.

We designed and conducted Study 2 to address this question. Study 2 involved two stages. In stage 1, as in Study 1, participants were asked to set budgets for their spending in the coming month under one of the three types of budget framing. In stage 2, participants were contacted one month later to report their actual spending through an online survey.

We conducted a 3 (budget framing: categorical vs. overall-with-reminders vs. overall-without-reminders) X 2 (repeated measure: set budget vs. actual spending) repeated-measures analysis (N = 113). The results revealed a significant interaction effect between repeated measure and budget framing (F(2, 110) = 17.52, p < .001). Replicating the results of study 1, further contrast analysis revealed that in stage 1 participants again set larger budgets under categorical framing (M = $790.93, SD = $421.82) than either overall-with-reminders framing (M = $420.63, SD = $266.97; t = 4.53, p < .001) or overall-without-reminders framing (M = $411.71, SD = $309.09; t = 4.61, p < .001). When we compared participants’ budgets with their actual spending, results revealed that under overall-with-reminders framing, there was no significant difference between set budget (M = $420.63, SD = $266.97) and actual spending (M = $373.56, SD = $235.72; F(1, 110) = .75, p = .39); similarly, under overall-without-reminders framing, the difference between set budget (M = $411.71, SD = $309.09) and actual spending (M = $346.41, SD = $339.02; F(1, 110) = 27, p = .61) was also not significant. By contrast, under categorical framing, participants set larger budgets (M = $790.93, SD = $421.82) than their actual spending (M = $431.93, SD = $295.49; F(1, 110) = 54.74, p < .001).

In stark contrast with what support theory and prior research might predict, participants set more precise budgets under overall framing than under categorical framing. We conjecture that while categorical framing brings to mind the component categories of expenditure that might be overlooked under overall framing, categorical framing also makes these subcategories more salient and perceived to be more important (Tversky and Koehler 1994). Thus consumers might set higher budgets for these individual categories than their actual spending in these categories. Moreover, in the overall-framing condition, consumers might have used their monthly income as a reference point to set their budget, and how much people actually spend may be constrained by their income. Thus, it is possible that categorical framing induces people to think about how much they want to spend, whereas overall framing makes them focus on how much they can actually spend. Further research would be needed to pin down the underlying mechanism of these counterintuitive results.

The Effects of Workload Level and Literacy on Consumer Compliance

EXTENDED ABSTRACT

Consumer coproduction of services - the direct involvement of consumers in service design and delivery – is an omnipresent marketplace phenomenon (Vargo and Lusch 2004). Honebein and Cammarano (2005, p. IX) observe: “In the past, customers expected companies to do a lot of the work for them. Now, companies are expecting customers to do more of the work themselves.” How do consumers respond to greater workload demands? This research accounts for individual and contextual factors underlying consumer coproduction, which has important (moderating and mediating) effects on consumer compliance with requests. Consumers’ compliance can vary as a function of context-literacy (e.g., medical, financial). We study: How does a consumer’s context-literacy influence compliance at varying levels of coproduction workload? And what is the underlying role of “positive stress”? Three studies demonstrate that context-literacy moderates the relationship between coproduction level and consumer outcomes.

We propose that higher (vs. lower) levels of coproduction workload lead to more positive service outcomes (e.g., increased compliance, reduction of maladaptive behaviors). There is a positive relationship between goal level and performance (Locke and Latham 1990); goals have an energizing and activating function on the focal task, such as coproducing a service experience. Goals affect persistence. Difficult goals prolong effort, provided consumers can control the time they spend on a task (ibid.).

Literacy is a socially embedded, and context dependent construct (Adkins and Ozanne 2005); various types of literacy have emerged (e.g., financial literacy, media literacy) (Kopp 2012; Lu-sardi and Mitchell 2007). For instance, business literacy refers to the ability to actively engage in economic life (Corus and Ozanne 2011). More challenging goals can lead to better performance, provided the individual accepts the goal (Locke and Latham 1990). We expect that lower literacy consumers will be more challenged by the higher (vs. lower) coproduction workload levels. Feeling challenged, higher (vs. lower) coproducing consumers should display more effort, resulting in greater compliance behaviors. We hypothesize:

Higher (vs. lower) coproduction levels will have a more positive effect on service outcomes; especially for consumers with lower levels of context-specific literacy.

Field Experiment. The experiment was in a hospital with patients as the study participants. It examines the effect of coproduction workload levels (high versus low) on patients’ compliance with the doctors’ treatment plan (e.g., smoking cessation, taking medications, exercising). Patient compliance is an important form of coproduction (Berry and Bendapudi 2007; Stremersch 2009). This study examines the moderating role of context-specific literacy in influencing compliance.

The design was 2(x)coproduction level: high, low) between subjects, (medical) literacy was measured, N=121. All patients completed forms in the waiting area prior to their appointment. In the high coproduction condition, patients prepared additional documentation at home prior to their appointment. After meeting with their doctor, all patients were asked to complete a post-visit questionnaire. Patients indicated their medical literacy, relationship duration and quality, and compliance intentions.

Results. The regression included patient compliance as the DV; the coproduction workload factor (dummy-coded), service literacy and their interaction as predictors; and relationship duration, relational quality, age, gender, and education as covariates. The model was significant F(8, 112) = 4.16, p < .001, adjusted R² = .17. Analysis revealed the proposed main effect of coproduction workload level. It also showed a main effect of service literacy, and the significant two way interaction between coproduction level and service literacy. Spotlight analysis revealed that at lower service literacy, higher coproduction led to significantly higher compliance. At higher service literacy, coproduction levels did not influence compliance.
Discussion. This study demonstrates that higher levels of co-
production can positively influence service outcomes (e.g., patient
compliance intentions, willingness to change maladaptive behav-
iors), among lower literacy patients. As patients’ service literacy in-
creases, this difference diminishes. This suggests that finding ways
to activate lower literacy consumers as coproducers helps heighten
compliance with (well-being focused) treatment plans. Higher co-
production workload eliminated the gap in compliance intentions be-
tween lower and higher service literacy consumers. Study 2 supports
similar findings in a lab setting; lower medical-specific literacy con-
sumers experienced higher levels of relationship quality with higher
coproduction demands; higher medical literacy consumers were not
different. Study 3, in a financial advising/financial decision-making
context, provides further insights into the underlying process by
examining the mediating role of positive consumer stress. Positive
consumer stress is a significant mediator in the model.

Numbers and Preventive Decision Making

EXTENDED ABSTRACT

A massive amount of money is spent each year on preventive
care (Begley 2013). Given the high preventive care costs incurred
both by governments and consumers, one important question that
arises is how can one encourage people to engage in simple, inex-
pensive preventive actions, such as getting vaccinated against flu,
eating healthy etc.? To persuade people to adopt preventive actions,
consumers are often exposed to preventive messages making the
risks of not engaging in preventive behaviors salient. Such preven-
tive messages commonly use numerical cues, such as probabilities
expressing how beneficial a preventive action could be. The question
we ask is could presenting the numerical cue in a round versus a pre-
cise number format make the preventive health message more effec-
tive? We propose that when the numerical cues incorporated in the
message appear round (e.g., 60.00%) versus precise (e.g., 60.41%),
it can positively impact one’s intention to adopt preventive health
behaviors.

Recent research suggests that round versus precise numbers are
more fluently processed (Kettle and Häubl 2009). Emerging research
on processing fluency further argues that fluently processed stimuli
are likely to lead one to respond more affectively (Alter et al. 2007).
Drawing upon this research, we propose that when exposed to round
versus precise numerical cues, people should respond more affec-
tively. Since affective reactions to the risks have been shown to be
more effective in motivating preventive behaviors (Loewenstein et
al. 2001), we further propose that when numerical cues in preventive
health messages are presented in round (vs. precise) number format,
people should have a greater intention to adopt preventive actions
against the health risks.

In Studies 1-3, employing different preventive health contexts,
we provide consistent support for our primary hypothesis. In Study
1, we show that participants chose to consume a smaller portion of an
indulgent but unhealthy food item (glazed donuts) when the per-
centage of people who indicated the food item to be high on trans fat
and cholesterol in the description was expressed as a round (80.00%)
versus a precise number (81.37%). Findings from Study 2 show that
participants reported higher intention engage in the preventive ac-
tion (take a cab) instead of driving under the influence of alcohol,
when the probability of getting into a drunken driving accident was
presented as a round (50.00%) versus a precise (50.37%) number.
In Study 3, we measured participants’ intention to take a vaccina-
tion against a deadly Bird flu when the probability of getting this flu
was presented as a round (60.00%) versus a precise (60.41%) num-
ber. We also measured participants anticipated worry on not taking
the vaccination. Exposure to round numbers increased participants’
anticipated worry, as well as their intention to take the vaccination
against the flu, compared to exposure to precise numbers. Further,
this effect of format of numbers on intention to take the vaccination
was mediated by anticipated worry.

This study provides stronger support for our conceptualization
related to affective reactions by examining the impact of mere ex-
posure to round versus precise numbers in an unrelated context on
people’s intention to adopt preventive health behaviors. Specifically,
in Study 4, participants were first asked to sort different images of
numbers according to the font size of the images. Participants sorted
either round number images or precise number images. Subsequent-
ly, participants received the same vaccination scenario used in Study
3, except that the numerical information related to the effectiveness
of the vaccination was not provided in this study. At the end of the
study, participants completed the 18-item need for cognition (NFC)
scale (Cacioppo, Petty, and Kao 1984). We found that those low on
NFC and thus have a greater tendency to rely on feelings reported
greater intention to take the vaccination against a painful disease
when they were primed with round (vs. precise) numbers. However,
this effect was attenuated for those high on NFC.

Thus far, our conceptualization suggests that round numbers
should lead people to respond affectively, thus increasing their pre-
ventive behavioral intention. However, engaging in an action in
itself could be associated with negative feelings. If our conceptu-
alization is valid, then the round number effect found in previous
studies should be eliminated if the negative feelings associated with
the process of engaging in the preventive action (e.g., pain associat-
ed with taking the vaccination) are made salient. Again, participants
were first primed with either round or precise numbers. Participants
then evaluated the Bird Flu scenario used in Study 4 with the fol-
lowing change. Half of the participants saw the possible symptoms
of being affected by the Bird Flu disease and included a picture of
people with flu symptoms. The other half saw the possible side ef-
ects of getting the vaccination and included a picture of a flu shot
needle. Replicating the results of previous studies, when the negative
consequences of not engaging in the preventive action (getting the
disease) was made salient, those primed with round number showed
a higher intention to take the vaccination, compared to those primed
with precise number. However, when the negative affect associated
with the process of taking a painful vaccination was made salient, the
demonstrated round number effect was directionally reversed.

In a final study, we extend our findings to real life behaviors.
Participants saw a message. Which presented the risks of unhealthy
eating as round or precise numbers, and encouraged them to avoid
unhealthy eating. We measured participants’ consumption behaviors
in the 24 hours, following exposure to the message. When the risks
of unhealthy eating were presented as round versus precise numbers,
participants consumed less unhealthy food.

Some simple preventive actions can prevent people from suf-
ferring from massive health problems. It is, therefore, important to
understand how the effectiveness of marketing campaigns aimed at
persuading people to engage in preventive behaviors could be en-
hanced. Findings from this research show that merely presenting
the numerical cues, incorporated in the preventive health message
campaigns, in a round versus precise number format can increase the
effectiveness of preventive message campaigns.