

Costs of Time versus Money: A Mental Accounting View of Satisfaction

Robin L. Soster
Department of Marketing
The Moore School of Business
University of South Carolina
1705 College Street
Columbia, SC 29208
Email: robin.soster@grad.moore.sc.edu
Phone: (803) 777-7305

Dissertation Co-Chairs:

William O. Bearden
Department of Marketing
The Moore School of Business
University of South Carolina
1705 College Street
Columbia, SC 29208
Email: bbearden@moore.sc.edu
Phone: (803) 777-4914

Ashwani Monga
Department of Marketing
The Moore School of Business
University of South Carolina
1705 College Street
Columbia, SC 29208
Email: ashwani@moore.sc.edu
Phone: (803) 777-5918

Acknowledgements

Thanks are due to the other members of the dissertation committee—Satish Jayachandran and Kathy Whitcomb—for their feedback on this project. Additional thanks are due to the Darla Moore School of Business; University of South Carolina for a research grant in the amount of \$2,500, which supported data collection.

Costs of Time versus Money: A Mental Accounting View of Satisfaction

ABSTRACT

While satisfaction is a heavily researched construct in consumer behavior, the primary focus has been on expectations and product performance, with limited attention to how the timing and nature of costs might influence satisfaction assessments. The present research applies a mental accounting model to suggest that the timing of costs (i.e., with respect to accounting periods and budgeting periods) and the nature of costs (i.e., whether costs are temporal or monetary) influence satisfaction with product performance. Specifically, for costs of time, but not money, accounting periods influence satisfaction with positive product performance outcomes. For costs of money, but not time, budgeting periods influence satisfaction with positive product performance outcomes. Two completed studies provide evidence of asymmetric satisfaction processes for time versus money. Two additional planned experiments are discussed—one which provides process evidence for these effects, and a second which provides evidence of external validity.

INTRODUCTION

This research examines the relationship between costs and satisfaction. Consider the following scenario. A customer goes to dinner at a restaurant. While at dinner, the atmosphere, service, and food are all excellent. When evaluating her satisfaction with the product performance, what would she say? Would this evaluation be different if she paid for the dinner at the beginning of the month? Would it vary if she had received the dinner by spending time (e.g., working for the restaurant owner)? What if she had “prepaid” by spending her time or money a week before the dinner? That is, do the timing and nature of costs influence reactions to positive product performance? The focus of this remainder of this manuscript is on examining how consumer satisfaction varies with the timing of costs (i.e., with respect to accounting periods and budgeting periods) and the nature of costs (i.e., whether costs are temporal or monetary) (figure 1).

The construct of satisfaction is important for marketing practitioners. When satisfaction is low, firm performance suffers (Anderson, Fornell, and Mazvancheryl 2004; Luo and Homburg 2007). Poor customer experiences cost firms \$338.5 billion on an annual basis, with each lost relationship costing \$243 yearly (Genesys 2009), and firms recognize the importance of satisfaction. North American (NA) companies are increasingly hiring executives to monitor satisfaction. From 2006 to 2008, the percentage of NA firms employing a customer satisfaction executive (e.g., chief service officer; VP of customer care) increased from 27% to 57% (Sanserino and Tuna 2009). Satisfaction is also theoretically important, relating to loyalty and repurchase (Mittal and Kamakura 2001; Seiders et al. 2005), defection (Gustafsson, Johnson, and Roos 2005), word of mouth (Bearden and Teel 1983), and willingness to pay (Homburg,

Koschate, and Hoyer 2005).

Disconfirmation (Oliver 1980), the dominant paradigm used to examine consumer (dis)satisfaction, suggests that consumers enter the marketplace with expectations, experience product performance, and compare the actual experience with expectations to determine whether they are satisfied. While some research has examined how expectations and assessments of product performance may change as time passes (e.g., Monga and Houston 2006, Slotegraaf and Inman 2004), limited attention has been paid to how the timing and nature of costs incurred affect satisfaction. It seems, however, that these may be two important considerations for researchers. First, the time at which costs are incurred (vis-à-vis when benefits are received) may impact satisfaction assessments. For example, while a consumer may purchase an item at a bookstore and experience product performance (i.e., read the book) immediately, they may also order books from an online bookseller (i.e., incur purchase costs), but not receive the product (i.e., the book) until later. This research suggests that, based on a mental accounting model, satisfaction may be different for costs of time and money, depending on the time at which costs are incurred.

Further, the nature of costs (i.e., whether costs are incurred in time or money) may also influence satisfaction. While many marketplace transactions are paid for with money, individuals frequently do incur costs of time (e.g., waiting in line; choosing standard versus overnight shipping). With the exception of Okada and Hoch (2004), who demonstrate that individuals may be insensitive to benefits when they have expended costs of time (but not money), the time-money literature has not examined how the nature of costs may influence satisfaction assessments. The present research theorizes that insensitivity to benefits may not be based upon a generalized difference between time and money, but that insensitivity may arise

for both time and money, depending on when costs are incurred (i.e., accounting and budgeting periods).

Finally, this manuscript also contributes to the satisfaction literature by applying a mental accounting model to more closely examine the relationship between costs incurred and satisfaction with benefits received (Thaler 1980, 1985, 1999). Since mental accounting suggests that individuals are more keen to seek benefits when costs and benefits are strongly linked, or coupled, in an effort to close mental accounts in the black (Prelec and Loewenstein 1998; Soman 2001; Soman and Gourville 2001), this framework provides insight into how coupling, and thus, mental accounting may occur differently for money and time and how these differences influence satisfaction.

Because this focus of this research is on the timing and nature of costs, and not the valence of the benefit experience (i.e., whether outcomes are positive or negative), I only consider positively-valenced product performance outcomes. This also allows for the elimination of potential confounds that might arise from mood effects or positive-negative asymmetries (e.g., prospect theory; Kahneman and Tversky 1979).

HYPOTHESES DEVELOPMENT

The following section builds on prior findings from satisfaction, mental accounting, and time-money research to develop predictions regarding whether the timing and nature of costs influence an individual's satisfaction with positive product performances (figure 1).

Insert figure 1 about here

The Relationship between Costs Incurred and Satisfaction

Satisfaction, the consumer's judgment of whether a product or service provides a “pleasurable level of consumption-related fulfillment” (Oliver 1997, p. 13), is inextricably linked to the idea that consumers hold expectations about outcomes they will receive before they enter the marketplace. Once product performance is experienced, it is compared to expectations to make satisfaction assessments (Oliver 1980, 1997). The majority of the extant satisfaction research examines how consumers compare their expected outcomes to actual outcomes experienced. For example, consider a consumer purchasing dinner at a restaurant. When the consumer enters the restaurant, they have specific ideas about what to expect. That is, they may have particular notions about the type of service they will receive, the quality of the cuisine they will eat, and the ambiance the restaurant will offer. Once they experience the dinner, they will then be able to assess how the service, food, and ambiance were. In line with the disconfirmation paradigm, the consumer will then be able to determine whether their expectations were met (confirmed) or not (disconfirmed). As outlined above, if expectations are confirmed or positively disconfirmed (i.e., more than expected), the individual is satisfied; if the disconfirmation is negative (i.e., less than expected), they are dissatisfied.

Drawing from findings in the satisfaction literature, it seems that the magnitude of monetary costs may be negatively related to consumers' final satisfaction judgments. The equity perspective on customer satisfaction (based on Adams 1965) suggests that individuals assess whether benefits received, given costs incurred, are fair. That is, perceptions of equity are enhanced when benefits received are at least as large as the costs incurred (i.e., the result of the

calculation of benefits less costs is greater than zero), and satisfaction has been shown to be positively related to equity perceptions (Clemmer 1988, Oliver 1993, Oliver and Swan 1989a, 1989b, Swan and Oliver 1991). That is, as equity perceptions increase, so does customer satisfaction. Using the restaurant example to illustrate, a consumer's satisfaction rating of their restaurant dinner could be positively impacted by increases in perceived equity in one of two ways. If costs (e.g., price paid for meal) are held constant, but the level of the benefit received (e.g., the dinner) increases, consumer satisfaction should increase. Conversely, and more relevant to this research, if the level of benefits received is held constant, but, for some reason, costs are not considered (i.e., approach zero) when making equity assessments, satisfaction should increase. This prediction is also consistent with the notion of perceived value, that is, that consumers make assessments of "value" based on comparing costs incurred to benefits received (Johnson, Anderson, and Fornell 1995). In other words, both the equity perspective and the notion of perceived value suggest that, holding product performance constant, when monetary costs are lower, satisfaction should be higher.

Although these findings reflect the general notion that, as costs of money increase, satisfaction decreases, other findings suggest that this relationship between costs and satisfaction may reverse when people incur costs of time. First, consumers have been shown to provide more favorable evaluations of products after expending greater effort shopping (Cardozo 1965). In Cardozo's experiment, individuals were given catalogs designed to manipulate product expectations (i.e., expensive versus inexpensive pens) and were given either a low or high effort shopping task (i.e., the task lasted about 15 minutes or an hour, respectively). While all participants were given a low-quality pen, those that had expended greater effort in the high-expectations condition rated the pen more favorably than those who

had expended little effort. In other words, the expenditure of greater effort seemed to attenuate dissatisfaction with a product that fell below expectations. Further, results for products that met expectations (i.e., an inexpensive pen for those who had perused the inexpensive pen catalog) were directionally supportive of the notion that when more effort was expended, satisfaction was higher.

Secondly, recent findings suggest an “IKEA Effect,” whereby an increase in fruitful labor yields greater liking for and higher valuations of the final product (Norton 2009; Norton, Mochon, and Ariely 2010), while both tasks that require minimal effort and tasks that require substantial effort, but are not completed, do not increase product valuation. Further, the authors show that these effects arise beyond both endowment effects (i.e., they are not based solely on mere ownership) and customization (i.e., that individuals may customize products during the assembly process). Finally, empirical evidence from the extant management literature suggests that individuals who expend more effort in the workplace have higher job satisfaction, independent of actual job performance (Brown and Peterson 1994). Brown and Peterson examined the relationship between expended workplace effort, sales performance, and job satisfaction for 380 salespeople working in a door-to-door direct selling context. The authors found that, independent of effort's effect on job performance, effort expended had a significant, positive direct effect on job satisfaction. In other words, job performance did not mediate the relationship between expended effort and job satisfaction. This suggests that, while greater expenditures of workplace effort may yield higher sales performance, effort expended may increase satisfaction independent of these higher sales performance outcomes. Combining the above findings, it seems that the more effort individuals expend to achieve a positive outcome (e.g., expected product performance, a completed do-it-yourself project, expression of a

terminal value), satisfaction may actually be higher. That is, while greater expenditures of money may lead to lower satisfaction, *ceteris paribus*, greater expenditures of time and effort seem to have the opposite effect on eventual assessments of satisfaction.

While the above findings for both expenditures of money and time suggest that these costs may influence satisfaction, the mental accounting literature suggests that, at times, the connection between costs and benefits may be strong or weak. Conceptualized as “coupling,” evidence suggests that coupling moderates the extent to which costs incurred are salient to consumers (Prelec and Loewenstein 1998). For example, Prelec and Loewenstein (1998) suggest that incurring costs attenuates the pleasure derived from the benefit received, while receiving the benefit buffers the pain of the monetary outlay. Because of this, individuals show a preference for prepayment (e.g., prefer monthly flat rate prepayment plans versus per-use plans; prefer paying for vacations prior to experiencing the vacation).

Furthermore, when costs are salient, individuals are more keen to seek the benefits associated with those costs (i.e., close their mental accounts in the “black”), regardless of any obstacles faced. This phenomenon, known as the sunk cost effect (i.e., individuals make consumption choices based on past costs; Arkes and Blumer 1985), is more likely to arise if costs and benefits are strongly linked (cf., Gourville and Soman 1998; Soman and Gourville 2001). But what happens if costs are inconsequential or less salient? Not only should individuals be less driven to experience product performance (i.e., those given a free basketball ticket are less likely to brave a snowstorm to attend the game than those who had paid for the ticket; Thaler 1980), they should experience less attenuation of the satisfaction associated with consumption due to thinking about the costs that have been incurred (Prelec and Loewenstein 1998). That is, consistent with the above review of the relationship between both monetary and

temporal costs and benefits, it seems that, if the link between monetary costs incurred and benefits received is weak, the salience of monetary costs is attenuated, and satisfaction may be higher. Conversely, if the link between temporal costs and benefits received is weak, the salience of these temporal costs should be lower, and the resulting satisfaction with product performance may be lower.

Thinking about the restaurant example, it seems that consumers for whom monetary costs are less salient should be more satisfied with the restaurant dinner than those for whom monetary costs are more salient. However, if the customer has expended time to receive a dinner (e.g., completing an online survey to receive a meal), it seems that satisfaction will be attenuated if these temporal costs are less salient. But what influences whether costs of time or money are salient? The next section suggests two distinct timing variables (i.e., accounting periods and budgeting periods) that may influence salience for costs of time versus money in an asymmetric manner.

Accounting Periods Determine Salience for Costs of Time (but not Money)

Differences between time and money may influence whether individuals pay attention to or dismiss costs incurred in these two currencies. Although economic theory suggests that individuals should consider costs of time in much the same way as they think about costs of money (Becker 1965), the extant time-money literature suggests that this is not the case. There are inherent differences in the characteristics of the two currencies. Time is not readily converted into monetary equivalents, is not storable, and is renewable; that is, each day brings a fresh supply of time (Linville and Fisher 1991; Okada and Hoch 2004; Soman 2001). In other

words, although money not spent today may be used tomorrow, time not spent today is lost forever. Further, although individuals use all of the time they have available to them today and they cannot save it to be used later, tomorrow promises a fresh replenishment (24 hours) that they may use as they see fit. While money can be saved and used later, it is not replenished automatically, but discontinuously (e.g., paychecks). Consistent with these inherent differences, prior research has shown that costs of time matter less to individuals than costs of money (Okada and Hoch 2004), and may even be ignored in decision making (Saini and Monga 2008).

However, other findings suggest that people may consider temporal costs, just in a different manner. First, individuals divide time into structures (e.g., one day, one week, one semester). Linville and Fisher (1991) show that individuals utilize these structures of time to allow them to cope more effectively with losses (i.e., individuals prefer to receive losses on separate days, rather than on the same day). Further, these structures influence moods (e.g., “Monday morning blues”; Areni 2009) and how income and costs are tracked (e.g., one day for cab drivers, Camerer et al. 1997; one year for physicians, Rizzo and Zeckhauser 2003).

Building on this notion of time structures, Soster, Monga, and Bearden (2010) find that “accounting periods” influence how individuals track costs of time (but not money). That is, when temporal costs are incurred in the same accounting period as the one in which benefits are received, individuals track costs of time. Conversely, when costs of time are incurred in a different accounting period from the one in which benefits are received, individuals no longer track costs of time. Further, Soster et al. (2010) show that these structures matter more for costs of time than for costs of money. That is, the authors demonstrate an asymmetry, such that accounting periods (e.g., a day, winter break), moderate whether individuals focus on costs of time, but not money. Using the sunk cost effect paradigm, the authors show that the sunk cost

effect does arise for temporal expenditures, if costs and benefits occur in the same accounting period. The authors suggest that, when one accounting period closes and a new one is opened, individuals no longer track expenditures of time. The authors found that accounting periods did not influence whether individuals tracked costs of money. In other words, individuals were equally likely to track costs of money whether a new accounting period had opened or not.

Insert figure 2 about here

Thus, Soster et al.'s (2010) findings suggest that when an accounting period is still open, the temporal costs that individuals have incurred are tracked in consumers' minds, but that they might no longer be salient in their minds after the accounting period (in which costs were incurred) closes (figure 2). Further, as discussed earlier, when costs of time are salient (versus not salient), satisfaction should be higher (cf. Cardozo 1965; Brown and Peterson 1994; Norton et al. 2010). Combing these two perspectives, the prediction is that individuals will be more satisfied with positive performance outcomes when costs of time are incurred and benefits are received in the same accounting period. However, if temporal costs are incurred and benefits are received in different accounting periods, satisfaction should be attenuated.

Further, since the tracking of monetary costs is not influenced by accounting periods (Soster et al. 2010), I suggest that, for individuals who have incurred monetary costs, these costs are salient whether costs and benefits occur in the same accounting period or not. In other words, I predict that accounting periods will have no effect on the salience of monetary costs (figure 1), and thus, no influence on assessments of satisfaction with positive product performance outcomes. Formally stated:

H1: Given prior costs, people will be differentially satisfied with positive product performance depending on whether costs are in time or money, and whether costs are incurred in the same or different accounting period in which product performance is experienced, such that:

- a) For costs of time, satisfaction with product performance will be higher when costs and benefits occur in the same accounting period (versus different periods).
- b) For costs of money, satisfaction with product performance will not vary based on accounting periods.

Budgeting periods determine salience for costs of money (but not time)

Since money can be saved or stored, monetary costs may still be salient, regardless of accounting periods. However, there could be situations in which the salience of monetary costs varies. Mental accounting suggests that individuals plan for expenditures of both time and money (Cheema and Soman 2006; Heath and Soll 1996; Lynch et al. 2010; Zauberma and Lynch 2005). This budgeting process involves creating categories of expenditures (e.g., food, entertainment, rent) and earmarking monies to the accounts (i.e., setting spending limits for each account). In addition, this planning is forward-looking over some preset time period (e.g., a monthly budget; Read, Loewenstein, and Rabin 1999). In other words, these categorization and assignment processes imply that individuals make *a priori* decisions related to how they will spend money and time across some period of time.

It is possible that this budgeting process is closely tied to the replenishment of resources. For example, while the resource of time replenishes relatively continuously (i.e., each morning offers another 24 hours to spend), the replenishment of monetary resources typically comes in the form of a paycheck, which is received discontinuously (e.g., once or twice per month).

Consequently, planning for monetary costs (which must sustain consumption between paychecks) may be more important to consumers than planning for temporal costs (since a fresh allocation of time comes available each day). That is, while spending money eliminates the opportunity to spend money on a subsequent day, spending time does not eliminate the opportunity to spend time on a subsequent day. Consistent with this perspective, Lynch and colleagues (2010) find that individuals are more likely to plan for expenditures of time in short-term increments (e.g., 1-2 days) rather than across longer-term time horizons (e.g., 1-2 months).

Furthermore, it seems as though *when* money is spent might influence how painful, or salient these expenditures are. For example, Spiller (2010) finds that consumers are more likely consider opportunity costs as they start to run low on resources available to spend. Further, Morewedge, Holtzman, and Epley (2007) find that the overall cost of a good (the numerator of the purchase decision equation) is considered relative to the denominator of this equation (i.e., the available resources for consumption). Morewedge and colleagues' "accessible account effect" suggests that individuals perceive expenditures to be smaller, and are more likely to consume when they perceive large amounts of resources to be available. I extend these findings to suggest that purchase timing might influence the perception of resource availability, and thus, the salience of costs. That is, at the end of the budgeting period, when less resources remain in a consumer's mental budget, the cost of a purchase is more salient (and resulting satisfaction is lower) than when the purchase is made at the beginning of the budgeting period and the resources available for use are relatively large (i.e., the denominator is greater).

Consider the restaurant example again. If an individual allocates \$100 to the mental budget "dining out" at the beginning of a month-long budgeting period, it seems that spending \$20 from a fully loaded account at the beginning of the budgeting period (i.e., when the "dining

out” account still has a \$100 balance) should be less painful than spending \$20 towards the end of the budgeting period, when the mental budget for the account has been diminished by month-long spending (i.e., when the “dining out” account only has \$30 left in it). That is, at the onset of a budgeting period, when monetary costs are expended from a “full” budget, it seems likely that these costs incurred may be less salient to consumers. However, if this same amount of money is spent towards the end of the budgeting period, when the account has less money available for expenditures, it seems that these costs will be more salient to the spender (figure 3).

The notion that monetary costs incurred at the beginning of the budgeting period are less painful is consistent with findings regarding how individuals spend windfall resources. Research suggests that individuals are more likely to spend windfall income versus regular income (Arkes et al. 1994), and individuals are more likely to make hedonic (i.e., non-utilitarian) purchases from monies received via windfall versus regular income (O'Curry and Strahilevitz 2001). While this stream of research focuses on windfall versus regular income, it seems possible that individuals may treat freshly-opened mental budgets in the same manner. Indeed, people have been found to change consumption patterns based upon when paychecks are received (i.e., consumption declines between paychecks, but increases to higher levels upon receipt of paychecks; Huffman and Barenstein 2005). Further, a recent Business Week study (Brady 2009) finds that over 40% of people stop spending money on non-bill related purchases 1-2 days after the receipt of their paycheck. I suggest that individuals may treat monies from freshly opened mental budgets similarly to money received via windfall gains. In other words, when mental budgets have just been replenished (i.e., at the beginning of the budgeting period), it seems that consumers may treat this influx of resources in a manner similar to windfall gains,

which may result in lower salience for costs incurred at the beginning of the budgeting period versus costs incurred at the end of the budgeting period.

Insert figure 3 about here

Consider individuals who budget on the 15th of each month. After making a purchase on the 16th (i.e., at the beginning of the budgeting period), they may treat the mental budget as a similar to a windfall income, and may feel as though the costs incurred are less painful, since their spending is out of a larger pool of resources. However, for individuals who have made a purchase from their remaining budget on the 14th (i.e., at the end of the budgeting period), the costs may be much more salient, since they are expending resources from a much smaller available balance.

The above theorizing suggests that monetary costs incurred at the beginning of a budgeting period should be less salient. As discussed earlier, and consistent with the findings for both consumer satisfaction and mental accounting, when monetary costs are less salient, satisfaction should be higher (cf. Oliver and Swan 1989a, 1989b; Johnson et al. 1995; Prelec and Loewenstein 1998). Combing these two perspectives, the prediction is that individuals will be more satisfied with positive performance outcomes when costs of money are incurred at the beginning of a budgeting period. That is, when monetary costs are incurred when a budgeting period is beginning (versus ending), these costs are less salient, and satisfaction with positive product performance is higher.

Consistent with findings which suggest individuals are more likely to plan for time in much shorter time horizons than they plan for monetary expenditures (Lynch et al. 2010), and

the notion that a fresh supply of time is available regular intervals (Soster et al. 2010), I predict that budgeting periods will not influence the salience of temporal costs. Individuals recognize that time is a renewable resource (Linville and Fischer 1991). As such, unlike money, which may run out before a budgeting period ends, time does not “run out,” but is continuously replenished. That is, whereas money spent today means that less money is available for discretionary spending tomorrow and every subsequent day until a new budgeting period begins, time spent today does not remove resources from the time one has available tomorrow or on subsequent days. Therefore, I predict that budgeting periods should not affect satisfaction when time is spent (figure 1). Formally stated:

H2: Given prior costs, people will be differentially satisfied with positive product performance depending on whether costs are in time or money, and whether the costs are incurred at the beginning or ending of a budgeting period, such that:

- a) For costs of money, satisfaction with product performance will be higher when costs are incurred at the beginning of a budgeting period (versus the ending of a budgeting period).
- b) For costs of time, satisfaction with product performance will not vary based on budgeting periods.

To summarize, I predict that accounting periods will influence satisfaction for individuals who have spent time, but not money. Further, I predict that budgeting periods will influence satisfaction for individuals who have spent money, but not time. The first two studies show evidence of these effects in a behavioral lab setting. In study one, I show empirical evidence for the asymmetric influence of accounting periods on satisfaction, while study two reveals the asymmetries that arise for budgeting periods. Then, I outline one process experiment (study three), planned for fall 2010, designed to provide evidence for the process proposed herein (i.e., that the timing and nature of costs influences salience and satisfaction). Finally, I

discuss a field experiment (study four) planned for fall 2010.

STUDY ONE

THE INFLUENCE OF ACCOUNTING PERIODS

Hypothesis 1 predicts that, for temporal costs, satisfaction with a positively-valenced product performance depends on whether costs and product performance occur in the same or different accounting period(s). Further, it is predicted that accounting periods will have no effect on satisfaction with positive product performance for monetary costs. To test this prediction, Okada and Hoch's (2004) scenario was modified to indicate that costs and benefits were occurring in either the same accounting period, or different periods (cf. Soster et al. 2010). As discussed above, only positive performance outcomes are examined.

Cost was manipulated to be either \$50 or 4 hours of data-entry work. These numbers were identical to those used by Okada and Hoch (2004). Time-money equivalence was also pretested with fifty-one participants. Given the scenario that I used in the main study, participants were asked to "Imagine that you are asked to spend 4 hours performing simple data-entry work. What is the minimum amount of money (in dollars) that you would want to be paid for this work?" The mean response of \$45.3 was not significantly different from \$50 ($t_{50} = -.93; p > .35$). Therefore, I employed the same values as those used by Okada and Hoch (2004): \$50 in the money condition and 4 hours in the time condition.

The accounting-period manipulation was also pre-tested with forty-one additional participants. This manipulation relied on the fact that people frequently use days as accounting periods (Camerer et al. 1997; Linville and Fischer 1991; Soster et al. 2010) (see Procedure for

details of stimuli). Pretest participants were randomly assigned to one of two conditions. In the different accounting period condition, they were told that they acquire a “dinner for two” a week in advance of the dinner. In the same accounting period condition, the acquiring of the dinner, and the eating of the dinner, occurred within the same day. Then, participants indicated the extent to which they perceived Time 1 (acquiring the dinner) and Time 2 (eating the dinner) to be in the same period or different periods (1 = Different Time Periods; 9 = Same Time Period). The mean response was significantly higher when participants were in the same accounting period rather than the different accounting period condition ($M_{\text{SAME}} = 5.40$ vs. $M_{\text{DIFFERENT}} = 3.04$, ($F(1, 39) = 10.2$; $p = .003$). Therefore, the manipulation worked as intended, and was used in the main study.

Design and Procedure

The design was a 2 (type of cost: time vs. money) \times 2 (accounting period: same vs. different) between-subjects design. In line with Okada and Hoch’s (2004) measure, the dependent variable was satisfaction with the restaurant experience.

One hundred and forty undergraduate business students participated in exchange for partial course credit. They were randomly assigned to one of the four conditions. Those in the money [time] conditions read the following when the benefit was received in the same accounting period in which costs were incurred.

Imagine a grand opening dinner of a new restaurant in town.

You acquired a “dinner for two” in the morning, a few hours in advance of the dinner. To receive this “dinner for two,” you spent \$50 [4 hours on simple data-entry work].

Those in the different accounting period condition read the same as above, except that the dinner was acquired a “week” in advance. Participants were then exposed to a positive outcome, as was done by Okada and Hoch (2004). Those in the same accounting period condition read the following:

That evening, when you arrived at the restaurant for dinner, you right away liked the ambiance. The table where you were seated was cozy and out of the way of foot traffic. The service was very prompt and courteous, and the food was delicious, the best you've had in a long time. Your friend and you had a great time. You would definitely go back there again and would recommend the restaurant to family and friends.

Those in the different accounting period condition read the same as above, except that the first few words were “A week later...” Finally, participants reported their overall satisfaction with the experience on a 9-point scale (-4 = “extremely dissatisfied”; 4 = “extremely satisfied”). Although the manipulation only offers a positive outcome, the scale provided participants was chosen because it offered participants the opportunity to indicate dissatisfaction with the experience (e.g., if the price was too high). In addition, the inclusion of negatively-scaled dissatisfaction choices prevented any demand artifacts that might have arisen from offering participants only a positively-valenced scale (i.e., they would have to mark a positive number even if they were dissatisfied).

Results and Discussion

Participants’ satisfaction with the dinner experience was analyzed in a 2 (type of cost:

time vs. money) \times 2 (accounting period: same vs. different) ANOVA. Only one effect was significant, the 2-way interaction effect ($F(1,136) = 6.96; p < .01$), which supported hypothesis 1. The pattern of results is presented in figure 4.

Insert figure 4 about here

As predicted, planned contrasts revealed that, for time, individuals were more satisfied with the restaurant dinner when costs and product performance occurred in the same accounting period, rather than when they occurred in different accounting periods ($F(1, 136) = 4.96 p < .05$). Specifically, when costs were in time, people were more satisfied with the benefit experience when the costs and product performance were in the same accounting period ($M_{\text{TIME_SAME}} = 3.88$ vs. $M_{\text{TIME_DIFFERENT}} = 3.03$). But, for money, the accounting period manipulation had no effect ($M_{\text{MONEY_SAME}} = 3.06$ vs. $M_{\text{MONEY_DIFFERENT}} = 3.61; F(1, 136) = 2.23; p = .14$). Satisfaction with the restaurant dinner was similar for costs of time and money, when costs and product performance occurred in different accounting periods ($M_{\text{TIME_DIFFERENT}} = 3.03$ vs. $M_{\text{MONEY_DIFFERENT}} = 3.61; F(1, 136) = 2.37; p = .13$). Furthermore, the findings suggest that individuals were more satisfied with the positive product performance when spending time (versus money) when costs and product performance occurred in the same accounting period ($M_{\text{TIME_SAME}} = 3.88$ vs. $M_{\text{MONEY_SAME}} = 3.06; F(1, 136) = 4.80; p < .05$).

In sum, the findings show that, for time, when costs and benefits occur in the same accounting period, individuals are more satisfied with positive product performance. As predicted, accounting periods had no effect on satisfaction when expenditures were monetary in nature.

STUDY TWO

THE INFLUENCE OF BUDGETING PERIODS

While study one found that accounting periods influence satisfaction with positive product performance for temporal costs, but not monetary costs, study two tests whether budgeting periods influence satisfaction with positive outcomes for transactions involving monetary costs, but not for those involving temporal costs (hypothesis 2). The manipulation in this experiment relies on the notion of budgeting periods, that is, that monetary costs may be more or less salient, depending on whether those costs are incurred at the beginning or ending of a budgeting period.

Design and Procedure

The design was a 2 (type of cost: time vs. money) \times 2 (budgeting period: beginning vs. ending) between-subjects design. Participants were told that they had spent time or money to receive a wristband to ride a new ride at a local amusement park. Although amusement parks use different pricing policies (e.g., one-price for admission, admission plus per-ride pricing, per-ride pricing only), this study was designed to assess consumer satisfaction with the new ride (i.e., not the amusement park itself). As such, participants were only told about the costs they incurred to ride the new ride, and were not given any additional information about admission pricing. In line with study 1, the dependent variable was satisfaction with the amusement park

ride. In addition, for this study, an additional dependent variable was added, a measure of likelihood to participate in the amusement park promotion gain if it were offered (i.e., repurchase likelihood). To eliminate potential confounds resulting from accounting periods (i.e., whether costs and benefits were perceived to occur in the same or different accounting periods), individuals were told that they received the wristband “today,” and were riding the ride “tonight”. That is, across all conditions, costs were incurred and benefits were received in the same accounting period, “today.”

The manipulation used suggests that individuals plan their monthly expenditures of time and money on the 15th of every month. They make a purchase either the day before (budgeting period ending), or the day after (budgeting period beginning) the planning takes place. The 15th of the month was also selected to prevent any accounting period effects. In other words, since research indicates that accounting periods may be construed in a variety of denominations (e.g., one day, winter vacation, summer), participants were told that they planned on the 15th of the month instead of the 1st or 30th to prevent a potential confound between accounting period (e.g., one month) and the focus of this study, budgeting periods.

Eighty-two undergraduate business students participated in exchange for partial course credit. They were randomly assigned to one of the four conditions. Those in the money [time] conditions read the following in the budgeting period beginning conditions.

Imagine that yesterday was the 15th of the month. Just like every month, the 15th is the day on which you receive your monthly income. In other words, you receive your full month's income at the middle of the month. You usually take this opportunity to think about how you will spend your money as well as your time.

Today is the 16th.

While at school, you notice that one of the business fraternities has set up a booth encouraging students to go to the local amusement park to enjoy the rides, including a

brand new ride.

The fraternity is selling wristbands that can be used to ride the new ride for \$10. You pay \$10 at the fraternity's booth today, and plan to go to the amusement park to ride the new ride tonight.

[The fraternity is selling wristbands that can be used to ride the new ride. One of your professors, the advisor for the fraternity, offers you the chance to work the fraternity's booth for one hour today. In exchange, you will receive a "new ride" wristband. You work at the booth for an hour today, and plan to go to the amusement park to ride the new ride tonight.]

Those in the budgeting period ending conditions read the same as above, except that individuals were told that tomorrow is the 15th, and today is the 14th (i.e., the beginning of a new budgeting period is tomorrow, and today is the ending of the previous budgeting period). All participants were then exposed to the following positive outcome:

As you walk up to the line, the ride attendant says, "Welcome to the new ride. Please let me remove your wristband now." After removing your wristband, you enter the line.

The line for the new ride was short, and the ride seemed to be operating pretty smoothly, especially for a new ride. When you were about to get into the ride itself, you thought that it looked fairly exciting, and the seats were pretty comfortable. The ride itself was good, but maybe not the best you've ever ridden.

Finally, in line with study one, participants reported their overall satisfaction with the experience on a 9-point scale (-4 = "extremely dissatisfied"; 4 = "extremely satisfied"). Further, since prior research suggests that consumer satisfaction impacts loyalty and repurchasing behavior (Mittal and Kamakura 2001; Seiders et al. 2005), participants were asked to respond to the following question: "If the business fraternity offers a similar opportunity to receive a "new ride" for the amusement park in the future, what is the likelihood that you will participate?" This item was measured on a 9-point scale (1 = "extremely unlikely to participate"; 9 =

“extremely likely to participate”).

Results and Discussion

Although separate analyses were performed for both of the dependent variables (i.e., satisfaction and likelihood to repurchase), these two variables were correlated, as expected ($r = .73; p < .001$). Since satisfaction should influence an individual's likelihood to repurchase, a mediation analysis was performed to determine if this was indeed the case. Results from the mediation analysis are reported after the separate analysis for the dependent variables (i.e., satisfaction and repurchase likelihood).

Satisfaction. Participants' satisfaction with the amusement park ride was analyzed in a 2 (type of cost: time vs. money) \times 2 (budgeting period: beginning vs. ending) ANOVA. Only one effect was significant, the 2-way interaction effect ($F(1, 78) = 4.51; p < .05$), which supported hypothesis 2. The pattern of results is presented in figure 5.

Insert figure 5 about here

As predicted, planned contrasts revealed that, consistent with hypothesis 2a, for money, individuals were more satisfied with the amusement park ride when costs were incurred at the beginning of the budgeting period, rather than when it was ending ($M_{\text{MONEY_BEGINNING}} = 1.68$ vs. $M_{\text{MONEY_ENDING}} = .57; F(1, 78) = 5.21 p < .05$). But, consistent with 2b, for temporal costs, the budgeting period did not have a significant effect ($M_{\text{TIME_BEGINNING}} = 1.52$ vs. $M_{\text{TIME_ENDING}} =$

1.86; $F(1, 78) = .49$; $p = .49$). Additional contrasts revealed that satisfaction with the amusement park ride was similar for costs of time and money incurred at the beginning of the budgeting period ($M_{\text{MONEY_BEGINNING}} = 1.68$ vs. $M_{\text{TIME_BEGINNING}} = 1.52$; $F(1, 78) = .11$; $p = .74$). Further, individuals were less satisfied with positive product performance if monetary costs were incurred when the budgeting period was ending ($M_{\text{MONEY_ENDING}} = .57$ vs. $M_{\text{TIME_ENDING}} = 1.86$; $F(1, 78) = 7.32$; $p < .01$).

Likelihood to Repurchase. Participants' repurchase likelihood was also analyzed in a 2 (type of cost: time vs. money) \times 2 (budgeting period: beginning vs. ending) ANOVA. Only one effect was significant, the 2-way interaction effect ($F(1, 78) = 4.05$; $p < .05$), which was consistent with the results for satisfaction. The pattern of results is presented in figure 6.

Insert figure 6 about here

As predicted, planned contrasts revealed that, for money, individuals were more likely to repurchase the wristband from the fraternity if a similar opportunity arose in the future, when costs were incurred at the beginning of the budgeting period, rather than at the end of the budgeting period ($M_{\text{MONEY_BEGINNING}} = 6.26$ vs. $M_{\text{MONEY_ENDING}} = 4.67$; $F(1, 78) = 4.91$ $p < .05$). But, for temporal costs, budgeting period did not have a significant effect on likelihood to repurchase ($M_{\text{TIME_BEGINNING}} = 5.62$ vs. $M_{\text{TIME_ENDING}} = 6.05$; $F(1, 78) = .37$; $p = .54$). Likelihood to repurchase was similar for costs of time and money when these costs were incurred at the beginning of the budgeting period ($M_{\text{MONEY_BEGINNING}} = 6.26$ vs. $M_{\text{TIME_BEGINNING}} = 5.62$; $F(1, 78) = .80$; $p = .37$). Further, the findings suggest that individuals were less likely to repurchase when

costs of money (versus time) were incurred at the ending of the budgeting period

($M_{\text{MONEY_ENDING}} = 4.67$ vs. $M_{\text{TIME_ENDING}} = 6.05$; $F(1, 78) = 3.86$; $p = .05$).

Mediation Analysis. The proposed process for the costs \times budgeting period interaction is that, for costs of money, budgeting period affects satisfaction, which, in turn, affects likelihood to repurchase. However, for costs of time, budgeting period does not have such an influence. That is, the moderating effect of costs (time vs. money) on likelihood to repurchase is mediated by satisfaction. For this mediation analyses, a mediated-moderation procedure was used (Muller, Judd, and Yzerbyt 2005).

To confirm mediated moderation (Muller et al. 2005), I used the three key terms—budgeting period, type of cost, and their interaction—in two regressions. In line with findings from the two separate ANOVAs, the interaction was significant for likelihood to repurchase ($\beta = .51$; $t(78) = 2.01$; $p < .05$). It was also significant for satisfaction ($\beta = .36$; $t(78) = 2.12$; $p < .05$). I then examined the effect of five terms on likelihood: the three key terms, satisfaction, and satisfaction \times type of cost. Confirming satisfaction as a mediator, significance persisted for the effect of satisfaction ($\beta = 1.04$; $t(76) = 8.67$; $p < .001$), but not for the budgeting period \times type of cost interaction ($\beta = .13$; $t(76) = .69$; $p = .49$). Moreover, none of the other effects were significant ($p > .60$).

In sum, individuals who paid in money were less satisfied with positive product performance when costs were incurred at the budgeting period's ending (i.e., just before the beginning of the next budgeting period). Furthermore, budgeting period affected intent to repurchase. In other words, budgeting periods influenced whether individuals were satisfied

with positive product performance in the case of monetary costs, but not in the case of temporal ones, such that, individuals who had paid in money were more satisfied with positive outcomes when costs were incurred at the beginning of the budgeting period versus the ending of the budgeting period. Budgeting periods had no effect on satisfaction when costs were temporal.

STUDY THREE

PROCESS EVIDENCE (PLANNED FOR FALL 2010)

Building off the proposed process (i.e., that cost salience has asymmetric effects for time versus money), as well as findings from studies one and two, experiments are proposed that, for time (study 3a) and money (study 3b), assess satisfaction with positive product performances, depending on accounting periods and budgeting periods, respectively. Consistent with studies one and two, studies 3a and 3b will examine the influence of accounting and budgeting periods separately, while adding another factor: spender (participant vs. other) to examine the underlying process for these effects. Both studies will employ the amusement park ride stimuli.

In study 3a, participants will be told that either they or a classmate spent one hour today to receive a ride on a new amusement park ride today (same accounting period) or next week (different accounting period). In study 3b, participants will be told that either they or a classmate spent \$10 at the beginning or end of their budgeting period to receive a ride on a new amusement park ride. That is, both experiments employ a 2×2 between-subjects design. The dependent variable will be overall satisfaction with the amusement park ride on a 9-point scale (-4 = “extremely dissatisfied”; 4 = “extremely satisfied”).

Design and Procedure

Study 3a. For this study, all participants will be told that either they or a classmate spent time to receive a ride on a new amusement park ride. In conditions where the classmate spent time to receive the ride, participants will be told that their classmate realized they could not go to the amusement park, and gave their ride away to the participant. This study will employ a 2 (accounting period: same vs. different) \times 2 (spender: participant vs. other) between-subjects design. Participants will be randomly assigned to one of four conditions. Those in the accounting period same [different], spender-participant {spender-other} conditions will read the following:

While at school today, you notice that one of the business fraternities has set up a booth encouraging students to go to the local amusement park today [next week] to enjoy the rides, including a brand new ride.

The fraternity is selling wristbands that can be used to ride the new ride. One of your professors, the advisor for the fraternity, offers you {your classmate} the chance to work the fraternity's booth for one hour today. In exchange, you {they} will receive a "new ride" wristband that can be used tonight [next week]. You {They} work at the booth for an hour today, and plan to go to the amusement park to ride the new ride tonight [next week].

{After spending one hour, and receiving the wristband, your classmate realizes that they have other plans tonight [next week] and will not be able to go to the amusement park to ride the new ride. Your classmate gives you the wristband to use tonight [next week]. Your classmate does not expect anything in return for the wristband.}

All participants will then be exposed to the following positive outcome:

Tonight [A week later], as you walk up to the line, the ride attendant says, "Welcome to the new ride. Please let me remove your wristband now." After removing your wristband, you enter the line.

The line was very short. All of the ride operators were incredibly friendly. The ride seemed to be operating very smoothly, especially for a new ride. When you reached the ride itself, it looked exciting. The seats were very comfortable. The ride itself was fantastic, the best you've ridden in a long time. You had a great time. You would definitely ride the ride again and would recommend it to family and friends.

Participants will then indicate their overall satisfaction with the amusement park ride on a 9-point scale (-4 = “extremely dissatisfied”; 4 = “extremely satisfied”). In addition, participants will indicate how salient the costs they (their classmate) incurred were when the participant was consuming the benefit. Three items will be used to assess salience: “When I was riding the ride, I thought carefully about the costs I (my classmate) incurred to receive the ride,” “When I was riding the ride, the costs of getting the ride weighed heavily on my mind,” and “When I was riding the ride, I kept thinking about how I (my classmate) paid for the ride.” Participants will respond to these items on a 9-point Likert scale (1 = “strongly disagree”; 9 = “strongly agree”). The three salience measures will be tested for unidimensionality and reliability. If they provide an internally reliable scale, the average of these items will be used to assess the proposed relationships between salience and satisfaction (i.e., that greater salience for temporal costs increases satisfaction, while greater salience for monetary costs attenuates satisfaction) via mediation.

Study 3b. For this study, participants will be told either that they or a classmate spent money to receive a ride on a new amusement park ride. In conditions where the classmate spent money to receive the ride, participants will be told that their classmate realized they could not go to the amusement park, and gave their ride away to the participant. This study will employ a 2 (budgeting period: beginning vs. ending) × 2 (spender: participant vs. other) between-subjects

design. Participants will be randomly assigned to one of four conditions. Those in the budgeting period beginning [ending], spender-participant {spender-other} conditions will read the following:

Imagine that yesterday was [tomorrow is] the 15th of the month. Just like every month, the 15th is the day on which you receive your monthly income. In other words, you receive your full month's income at the middle of the month. You usually take this opportunity to think about how you will spend your money as well as your time. Many of your classmates have told you that they do the same.

Today is the 16th [14th].

While at school, you notice that one of the business fraternities has set up a booth encouraging students to go to the local amusement park to enjoy the rides, including a brand new ride.

The fraternity is selling wristbands that can be used to ride the new ride for \$10. You {Your classmate} pay{s} \$10 at the fraternity's booth today, and {they} plan to go to the amusement park to ride the new ride tonight.

{After spending \$10, and receiving the wristband, your classmate realizes that they have other plans tonight and will not be able to go to the amusement park to ride the new ride. Your classmate gives you the wristband to use tonight. Your classmate does not expect anything in return for the wristband.}

All participants will then be exposed to the following positive outcome:

Tonight, as you walk up to the line, the ride attendant says, "Welcome to the new ride. Please let me remove your wristband now." After removing your wristband, you enter the line.

The line was very short. All of the ride operators were incredibly friendly. The ride seemed to be operating very smoothly, especially for a new ride. When you reached the ride itself, it looked exciting. The seats were very comfortable. The ride itself was fantastic, the best you've ridden in a long time. You had a great time. You would definitely ride the ride again and would recommend it to family and friends.

All participants will then indicate their overall satisfaction with the amusement park ride on a 9-point scale (-4 = "extremely dissatisfied"; 4 = "extremely satisfied"). In addition, as

outlined above, participants will indicate how salient the costs they (their classmate) incurred were when the participant was consuming the benefit.

Expected Results

For study 3a, when the participant spends one hour to receive the amusement park ride, results should replicate the findings from study one. That is, participants who spent time in the same accounting period as the one in which benefits are received should be more satisfied with the ride itself. In addition, temporal costs should be more salient when they are incurred in the same accounting period as the one in which benefits are received (versus in a different accounting period). However, if the process underlying the effects from study one is that, when costs are salient, satisfaction when time is spent is higher, effects from study one should attenuate in conditions in which someone else spends time to receive the benefit. That is, if someone else has incurred the costs, temporal costs should not be salient, regardless of accounting period, and satisfaction should be lower. Further, the three-item scale to assess costs salience should be lower in three conditions: both conditions where the classmate spends the time to receive the ride, and the condition where the participant spends time and received the benefit in different accounting periods. Expected results are presented in figures 7 and 8.

Insert figures 7 and 8 about here

For study 3b, when the participant pays \$10 to receive the amusement park ride, results should replicate study two. That is, costs incurred at the beginning of the budgeting period

(versus the end) should yield higher satisfaction with the amusement park ride. Further, monetary costs should be more salient when they are incurred at the end (versus beginning) of the budgeting period. However, if the process underlying the effects from study two is that, when costs are salient, satisfaction when money is spent is lower, effects from study two should attenuate in conditions in which someone else spends money to receive the benefit. That is, if someone else has incurred the costs, monetary costs should not be salient, regardless of budgeting period, and satisfaction should be higher. Expected results are presented in figures 9 and 10.

Insert figures 9 and 10 about here.

STUDY FOUR
FIELD EXPERIMENT (EXTERNAL VALIDITY)

Study four will test hypotheses 1 and 2 simultaneously in a real world setting with adult consumers to provide evidence of external validity (robustness of the effects). For this study, I have partnered with an ice cream store (Sayago’s Café and Ice Creamery; Appendix A) in Fort Mill, South Carolina. Sayago’s is located in the commercial district of a suburban development (Baxter Village) in the Charlotte, North Carolina metro area. The neighborhood has approximately 1,225 residential single family (attached and detached) homes, and the neighborhood’s “town center” boasts a lively atmosphere at night. Centrally-located amid the eight other eateries in Baxter (all within a one-block walk from Sayago’s), the location is ideal

for conducting the field experiment. Institutional Review Board approval has been secured, funding has been provided by a grant from the Darla Moore School of Business (\$2,500), and the study is scheduled to take place in fall 2010.

The sequence of events will be as follows: (1) Data collection will take place at the end of the budgeting period (i.e., the last week of the month) or at the beginning of the budgeting period (i.e., the first week of the month). (2) Participants will spend actual time (completing a 2-minute survey) or money (\$1) to receive a voucher redeemable for one scoop of ice cream. (3) Participants will receive a voucher to be used in the same (this week) or different (next week) accounting period as the one in which costs are incurred. (4) Participants will redeem vouchers for ice cream, and the Sayago's employee will give the participant a short survey to complete which contains the focal satisfaction measure. (5) After the study is completed, I will collect the satisfaction surveys from Sayago's, count the number of vouchers redeemed, and pay the restaurateur the negotiated price for the ice cream (\$2.50 each).

Design and Procedure

This study will employ a 2 (type of cost: time vs. money) \times 2 (budgeting period: beginning vs. ending) \times 2 (accounting period: same vs. different) between-subjects design. The dependent variable will be satisfaction with the ice cream on a 9-point scale (-4 = "extremely dissatisfied"; 4 = "extremely satisfied"). Adults will be solicited to spend time (2 minutes completing a survey) or money (\$1) in front of Sayago's at the beginning of a budgeting period or at the end of a budgeting period to receive a voucher for one scoop of ice cream, redeemable in the same accounting period ("this week") or in a different accounting period ("next week").

When participants redeem their vouchers, the ice cream cafe employees will hand them a short survey containing the focal dependent variable: satisfaction with the ice cream. Individuals will receive only one offer (i.e., they will not be able to choose whether they spend time or money, or whether the voucher is redeemable this week or next week).

After spending \$1/2 minutes, participants will receive a voucher for one scoop of ice cream, which will also serve to reinforce the budgeting period manipulation. In the ending-budgeting period, same-accounting period condition, the sheet will be titled “Treat Yourself This Week!! It’s the End of the Month!!,” but, in the beginning-budgeting period, same-accounting period condition, the sheet will be titled “Treat Yourself This Week!! It’s the Beginning of the Month!!”

The title will be followed by this text in the time (money) conditions:

Here at Sayago’s, our customers tell us that on the 1st of every month, they plan their time (money). They decide how they will spend their time (money) through the month.

Participants in the ending-budgeting period {beginning-budgeting period} conditions will then read the following:

Given that this month is about to end {just began}, we are glad you included us in your plans. Keep us in mind when you make your plans at the beginning of the next month (which is just a short time away {which is still a long time away}).

Use this voucher to enjoy an ice cream this week.

Finally, participants in the time (money) conditions will read the following:

Thanks for spending 2 minutes on our survey (\$1.00) today. Please note the following:

- You will receive one scoop of ice cream.
- This voucher is valid ONLY this week, _____, 2010.
- This voucher is non-transferable—only YOU can use this.

Those in the different accounting period conditions will read the same as above, except that the words “this week” will be replaced with “next week.”

Participants will be able to redeem the voucher for one scoop of the ice cream of their choice during their designated redemption period. They will then be given a short survey to complete (Appendix B), which will contain the focal dependent variable: overall satisfaction with the ice cream on a 9-point scale (-4 = “extremely dissatisfied”; 4 = “extremely satisfied”).

Expected Results

Participants’ satisfaction with the ice cream will be analyzed in a 2 (type of cost: time vs. money) × 2 (budgeting period: beginning vs. ending) × 2 (accounting period: same vs. different) ANOVA. The prediction is that the accounting period manipulation will influence satisfaction with the ice cream for individuals who spent time, but not money. Further, the budgeting period manipulation is expected to influence satisfaction with the ice cream for individuals who spent money, but not time. Expected results are presented in figure 11.

Insert figure 11 about here.

GENERAL DISCUSSION

Satisfaction is an important construct in consumer research. While prior models have focused on concepts such as product performance and consumer expectations, this research applies a mental accounting model to examine how satisfaction with positive product performance is impacted by the timing and nature of costs incurred. This research proposes a satisfaction asymmetry for time and money based on two variables: accounting periods and budgeting periods. That is, it first suggests when costs of time are salient, satisfaction is higher, whereas, when costs of money are salient, satisfaction is lower. Further, it predicts that when individuals perceive temporal costs incurred and benefits received to be in the same (versus different) accounting period(s), costs of time are more salient, and satisfaction with positive product performance is higher. In addition, accounting periods should not influence salience of costs of money. Next this research suggests that when individuals incur costs of money at the beginning of a budgeting period (versus the ending of a budgeting period), the salience of costs is lower, and satisfaction with positive product performance is higher, while, when costs of time are incurred, satisfaction is unaffected by budgeting periods. The first two studies test whether satisfaction with positive product performance varies based on both the timing and nature of costs. The underlying process requires further examination, which will be provided by study three. Study four (currently in the design phase) will examine these effects in a real world context with consumers.

Theoretical Contribution

While prior research has focused more on expectations and product performance (Oliver 1980), rather than the influence costs may have on consumer satisfaction, these findings suggest that the timing and nature of costs influence satisfaction with positive product performance outcomes, presenting a new perspective on satisfaction using mental accounting. In applying the framework of mental accounting to satisfaction, findings suggest that, when individuals are spending time, costs are more salient, and satisfaction with positive product outcomes is higher when costs and benefits occur within the same accounting period (versus occurring in different accounting periods). Accounting periods have no effect on satisfaction for individuals who have spent money. For consumers spending money (but not time), satisfaction with positive product performance is higher when costs are incurred at the beginning of the budgeting period and costs are less salient (versus the ending of the budgeting period when costs are more salient). Budgeting periods have no effect on satisfaction for individuals spending time, since inflows of time occur on a continuous basis, while monetary resources do not.

Furthermore, the present research extends the mental accounting literature. Past findings suggest that individuals are more keen to seek benefits when costs and benefits are strongly linked, or coupled, because they want mental accounts to close in the black (Prelec and Loewenstein 1998; Soman 2001; Soman and Gourville 2001). The present findings suggest that accounting periods and budgeting periods influence the salience of costs, which, in turn, influences consumers' satisfaction with product performance for temporal costs and monetary costs, respectively. Although coupling and its impact on the sunk cost effect and satisfaction has been examined in the mental accounting literature (Gourville and Soman 1998; Soman and Gourville 2001), the variables proposed herein—accounting periods and budgeting periods—may influence the extent to which costs of time and money are salient, and thus, how satisfied

consumers are with product performance.

Finally, this research contributes to the time-money literature. Although prior findings suggest that outcomes are relatively inconsequential when costs incurred are temporal (versus monetary) in nature (Okada and Hoch 2004; Monga and Saini 2009), I show that outcomes may (or may not) matter for both types of costs, based on different conditions. For example, if costs of time and the receipt of benefits are perceived to occur in the same accounting period (versus occurring in different accounting periods), these costs of time may be more salient, and thus, individuals spending time may be more satisfied with positive performance outcomes. While accounting periods do not matter for monetary expenditures, budgeting periods do. That is, costs of money incurred at the beginning of a budgeting period (versus the end of a budgeting period) may be less salient, yielding higher levels of satisfaction with positive product performance. Additionally, budgeting periods have no impact on satisfaction with positive product performance for individuals incurring costs of time. In other words, the time-money literature is extended by offering two variables (accounting periods and budgeting periods) that have asymmetric effects on how salient costs of time and money are, thus influencing satisfaction when costs of time (money) are incurred.

Future Research

While the present research focuses only on positive product performance outcomes, consumers may experience both positive and negative outcomes when they transact in the marketplace. It remains to be seen if the timing of costs (i.e., accounting periods and budgeting

periods) and/or the nature of costs incurred (i.e., whether costs are monetary or temporal) may influence satisfaction with product performances when the outcome is negative. That is, when costs are less salient (e.g., when temporal costs are incurred in a different accounting period than the accounting period in which benefits are experienced), is dissatisfaction attenuated? Manipulating negative product performance (cf. Bitner 1990) may allow researchers to examine whether the effects shown herein extend to negative performance episodes. If these findings show that the timing and nature of costs influence satisfaction with negative product performance similarly, there may be situations in which consumers are indifferent to product performance (i.e., lower satisfaction with positive outcomes and lower dissatisfaction with negative outcomes). In other words, it is possible that the timing and nature of costs widen a consumer's zone of tolerance, that is, that a broader range of product performances fall between “desired” and “adequate” performance levels (cf. Zeithaml, Berry, and Parasuraman 1993). Findings with regards to consumer reactions to negative product performance may be of particular interest to firms.

Further, it is possible that the manipulation of accounting periods (i.e., same versus different) and budgeting periods (i.e., beginning versus end) evoke different levels of construal (e.g., construal level theory (CLT), Trope and Liberman 2003). According to CLT, the manner in which events are framed affects the construal with which individuals consider the events. For example, events that occur in the near (far) future instigate concrete (abstract) construals. That is, while consumers exposed to situations in the near future focus more on concrete aspects of the situation, those exposed to far future considerations should be more cognizant of abstract considerations. Furthermore, Fujita et al. (2006) found that the activation of high-level construals (versus low level construals) leads to increased self-control for individuals. It is

possible then that accounting periods and budgeting periods affect the manner in which costs are construed (e.g., whether costs are perceived to be near or far). Further, given that both individuals who incur temporal costs in a different accounting period than the one in which benefits are received, and those who incur monetary costs at the end of a budgeting period may care less about costs incurred, it could be that these conditions invoke low-level construals for individuals, which lead to attenuated self-control. This is an area that warrants further investigation.

Additionally, while Prelec and Loewenstein (1998) suggest that individuals desire to close accounts in the black once costs have been incurred, most of their research investigates more complex situations, such as when products require multiple payments (e.g., for a car loan) and when benefits are extended over a period of time (e.g., benefits from a car). Based on their findings, it remains to be seen how long term debt (e.g., car loans; mortgages) associated with durable products (e.g., a car; a house) may be affected by budgeting periods. While the current studies examine the relationship between the timing and nature of costs and satisfaction for brief benefit episodes (e.g., a restaurant dinner, an amusement park ride), further research should examine how the nature of the benefit (i.e., whether products are durable or non-durable) moderates the findings herein.

Finally, the accounting periods and budgeting periods described in this research may influence whether individuals forecast or backcast (Ebert, Gilbert, and Wilson 2009). That is, when individuals predict their feelings after a consumption event and how these feelings may change over time, they are forecasting reactions to the consumption event. Conversely, when individuals consider their future feelings, then consider how these feelings may change based on an intervening consumption event, they are backcasting. Ebert et al. (2009) show that,

depending on whether individuals forecast or backcast, their expectations about the hedonic impact of consumption are different. Backcasters tend to make more extreme predictions about the hedonic impact of consumption events than forecasters do, primarily because they think more about the event itself. In this manner, backcasters may be less satisfied with positive product outcomes. That is, if in making predictions with regards to the hedonic impact of product experiences, backcasters have higher expectations about product performance (e.g., it will make them very pleased), backcasters should be less likely to be satisfied when the actual product performance is realized. While Ebert et al. (2009) suggest that temporal periods may affect whether individuals forecast or backcast, accounting periods and budgeting periods may influence this tendency to forecast (versus backcast) as well. That is, when considering consumption outcomes, individuals may be more likely to forecast or backcast depending on their perception of accounting periods and budgeting periods.

CONCLUSION

To make predictions about the influence of the timing and nature of costs on satisfaction with positive product performance, a mental accounting model is applied to the construct of consumer satisfaction. Two studies demonstrate that asymmetries in satisfaction with positive product performance arise between time and money based on two key variables: accounting periods and budgeting periods. First, when individuals perceive temporal costs incurred and benefits received to be in the same (versus different) accounting periods, satisfaction with positive product performance is higher. In contrast, when costs of money are incurred,

satisfaction is unaffected by accounting periods. Second, when individuals incur costs of money at the beginning of a budgeting period (versus the ending of a budgeting period), satisfaction with positive product performance is higher, while, when costs of time are incurred, satisfaction is unaffected by budgeting periods. While these findings provide evidence that satisfaction with positive product performance may vary based on both the timing and nature of costs, an additional study (study three) is planned to examine the underlying process (i.e., the relationship between costs of time versus money, cost salience, and satisfaction). A fourth study is planned to examine these effects in a real world consumption context.

APPENDIX A:

STUDY 4 LOCATION: SAYAGO'S CAFÉ AND ICE CREAMERY; FORT MILL, SC



APPENDIX B:

STUDY 4: SATISFACTION SURVEY

ICE CREAM STUDY

We have a few final questions. When you are done, please fold the survey and place in the box marked "SURVEYS."

1. How satisfied are you with the ice cream you received today? (Please circle one number.)

-4 -3 -2 -1 0 1 2 3 4

Extremely
Dissatisfied

Extremely
Satisfied

2. How likely are you to return to Sayago's to purchase ice cream?

1 2 3 4 5 6 7 8 9

Extremely
Unlikely

Extremely
Likely

3. When I was eating the ice cream, I thought carefully about the costs I incurred to receive the ice cream.

1 2 3 4 5 6 7 8 9

Strongly
Disagree

Strongly
Agree

4. When I was eating the ice cream, the costs of getting the ice cream weighed heavily on my mind.

1 2 3 4 5 6 7 8 9

Strongly
Disagree

Strongly
Agree

5. When I was eating the ice cream, I kept thinking about how I paid for the ice cream.

1 2 3 4 5 6 7 8 9

Strongly
Disagree

Strongly
Agree

REFERENCES

- Adams, J. Stacy (1965), "Inequity in Social Exchange," in *Advances in Experimental Social Psychology*, Vol. 2, ed. Leonard Berkowitz, New York, New York: Academic Press, Inc., 267-299.
- Anderson, Eugene W., Claes Fornell, and Sanal K. Mazvancheryl (2004), "Customer Satisfaction and Shareholder Value," *Journal of Marketing*, 68 (October), 172-85.
- Areni, Charles (2009), "Salvation of the Second Shift: Are Wives Immune to Monday Blues?" in *Advances in Consumer Research*, Vol. 36, eds. Ann L. McGill and Sharon Shavitt, Duluth, MN: Association for Consumer Research.
- Arkes, Hal R. and Catherine Blumer (1985), "The Psychology of Sunk Cost," *Organizational Behavior and Human Decision Processes*, 35 (February), 124-40.
- Arkes, Hal R., Cynthia A. Joyner, Mark V. Pezzo, Jane G. Nash, Karen Siegel-Jacobs, and Eric Stone (1994), "The Psychology of Windfall Gains," *Organizational Behavior and Human Decision Processes*, 59 (September), 331-347.
- Bearden, William O. and Jesse E. Teel (1983), "Selected Determinants of Consumer Satisfaction and Complaint Reports," *Journal of Marketing Research*, 20 (February), 21-28.
- Becker, Gary S. (1965), "A Theory of the Allocation of Time," *Economic Journal*, 75 (September), 493-517.
- Bitner, Mary Jo (1990), "Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses," *Journal of Marketing*, 54 (April), 69-82.

- Brady, Diane (2009), "Want to Sell Something? Catch Consumers at Work, Near Payday," *BusinessWeek*, May 6, http://www.businessweek.com/careers/managementiq/managementiq/archives/2009/05/want_to_sell_so.html.
- Brown, Steven P. and Robert A. Peterson (1994), "The Effect of Effort on Sales Performance and Job Satisfaction," *Journal of Marketing*, 58 (April), 70-80.
- Camerer, Colin, Linda Babcock, George Loewenstein, and Richard Thaler (1997), "Labor Supply of New York City Cabdrivers: One Day at a Time," *Quarterly Journal of Economics*, 112 (May), 407-41.
- Cardozo, Richard N. (1965), "An Experimental Study of Customer Effort, Expectation and Satisfaction," *Journal of Marketing Research*, 2 (August), 244-49.
- Cheema, Amar and Dilip Soman (2006), "Malleable Mental Accounting: The Effect of Flexibility on the Justification of Attractive Spending and Consumption Decisions," *Journal of Consumer Psychology*, 16 (January), 33-44.
- Clemmer, Elizabeth C. (1988), "The Role of Fairness in Customer Satisfaction with Services?" Ph.D. dissertation, University of Maryland--College Park.
- Ebert, Jane E. J., Daniel T. Gilbert, and Timothy D. Wilson (2009) "Forecasting and Backcasting: Predicting the Impact of Events in the Future," *Journal of Consumer Research*, 36 (October), 353-66.
- Fujita, Kentaro, Yaacov Trope, Nira Liberman, and Maya Levin-Sagi (2006), "Construal Levels and Self-Control," *Journal of Personality and Social Psychology*, 90 (3), 351-67.
- Genesys Telecommunications Laboratories, Inc. (2009), "The Cost of Poor Customer Service: The Economic Impact of the Customer Experience and Engagement in 16 Key Economies," November, www.genesyslab.com.

- Gourville, John T. and Dilip Soman (1998), "Payment Depreciation: The Behavioral Effects of Temporally Separating Payments from Consumption," *Journal of Consumer Research*, 25 (September), 160-74.
- Gustafsson, Anders, Michael D. Johnson, and Inger Roos (2005), "The Effects of Customer Satisfaction, Relationship Commitment Dimensions, and Triggers on Customer Retention," *Journal of Marketing*, 69 (October), 210-18.
- Heath, Chip and Jack B. Soll (1996), "Mental Budgeting and Consumer Decisions," *Journal Of Consumer Research*, 23 (June), 40-52.
- Homburg, Christian, Nicole Koschate, and Wayne D. Hoyer (2005), "Do Satisfied Customers Really Pay More? A Study of the Relationship between Customer Satisfaction and Willingness to Pay," *Journal of Marketing*, 69 (April), 84-96.
- Huffman, David and Matias Barenstein (2005), "A Monthly Struggle for Self-Control? Hyperbolic Discounting, Mental Accounting, and the Fall in Consumption between Paydays," working paper.
- Johnson, Michael D., Eugene W. Anderson, and Claes Fornell (1995), "Rational and Adaptive Performance Expectations in a Customer Satisfaction Framework," *The Journal of Consumer Research*, 21 (March), 695-707.
- Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47 (March), 263-91.
- Linville, Patricia W. and Gregory W. Fischer (1991), "Preferences for Separating or Combining Events," *Journal of Personality and Social Psychology*, 60 (January), 5-23.
- Luo, Xueming and Christian Homburg (2007), "Neglected Outcomes of Customer Satisfaction," *Journal of Marketing*, 71 (2), 133-49.

- Lynch, John G., Jr., Richard G. Netemeyer, Stephen A. Spiller, and Alessandra Zammit (2010), "A Generalizable Scale of Propensity to Plan: The Long and the Short of Planning for Time and for Money," *Journal of Consumer Research*, 37 (1), 108-28.
- Mittal, Vikas and Wagner A. Kamakura (2001), "Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Customer Characteristics," *Journal of Marketing Research*, 38 (February), 131-42.
- Monga, Ashwani and Michael J. Houston (2006), "Fading Optimism in Products: Temporal Changes in Expectations about Performance," *Journal of Marketing Research*, 43 (November), 654-63.
- Monga, Ashwani and Ritesh Saini (2009), "Currency of Search: How Spending Time on Search is Not the Same as Spending Money," *Journal of Retailing*, 85 (September), 245-57.
- Morewedge, Carey K., Leif Holtzman, and Nicholas Epley (2007), "Unfixed Resources: Perceived Costs, Consumption, and the Accessible Account Effect," *Journal of Consumer Research*, 34 (December), 459-67.
- Muller, Dominique, Charles M. Judd, and Vincent Y. Yzerbyt (2005), "When Moderation is Mediated and Mediation is Moderated," *Journal of Personality and Social Psychology*, 89 (6), 852-63.
- Norton, Michael I. (2009), "The IKEA Effect: When Labor Leads to Love," *Harvard Business Review*, 87 (February), 30.
- Norton, Michael I., Daniel Mochon and Dan Ariely (2010), "The 'IKEA Effect:' When Labor Leads to Love," working paper.

- O'Curry, Suzanne and Michal Strahilevitz (2001), "Probability and Mode of Acquisition Effects on Choices between Hedonic and Utilitarian Options," *Marketing Letters*, 12 (February), 37-49.
- Okada, Erica Mina and Stephen J. Hoch (2004), "Spending Time versus Spending Money," *Journal of Consumer Research*, 31 (September), 313-23.
- Oliver, Richard L. (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 17 (November), 460-469.
- _____ (1993), "Cognitive, Affective, and Attribute Bases of the Satisfaction Response," *Journal of Consumer Research*, 20 (December), 418-30.
- _____ (1997), *Satisfaction: A Behavioral Perspective on the Consumer*, New York, NY: The McGraw-Hill Companies, Inc.
- Oliver, Richard L. and J.E. Swan (1989a), "Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach," *Journal of Marketing*, 53 (April), 21-35.
- _____ (1989b), "Equity and Disconfirmation Perceptions as Influences on Merchant and Product Satisfaction," *Journal of Consumer Research*, 16 (December), 372-83.
- Prelec, Drazen and George Loewenstein (1998), "The Red and the Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17 (March), 4-28.
- Read, Daniel, George Loewenstein, and Matthew Rabin (1999), "Choice Bracketing," *Journal of Risk and Uncertainty*, 19 (December), 171-97.
- Rizzo, John A. and Richard J. Zeckhauser (2003), "Reference Incomes, Loss Aversion, and Physician Behavior," *Review of Economics and Statistics*, 85 (November), 909-22.

- Saini, Ritesh and Ashwani Monga (2008), "How I Decide Depends on What I Spend: Use of Heuristics is Greater for Time than for Money," *Journal of Consumer Research*, 34 (April), 914-22.
- Sanserino, Michael and Cari Tuna (2009), "Companies Strive Harder to Please Customers," *Wall Street Journal*, July 27, B4.
- Seiders, Kathleen, Glenn B. Voss, Dhruv Grewal, and Andrea L. Godfrey (2005), "Do Satisfied Customers Really Buy More? Examining Moderating Influences in a Retailing Context," *Journal of Marketing*, 69 (October), 26-43.
- Slotegraaf, Rebecca J. and J. Jeffrey Inman (2004), "Longitudinal Shifts in the Drivers of Satisfaction with Product Quality: The Role of Attribute Resolvability," *Journal of Marketing Research*, 41 (August), 269-80.
- Soman, Dilip (2001), "The Mental Accounting of Sunk Time Costs: Why Time is not Like Money," *Journal of Behavior Decision Making*, 14 (July), 169-85.
- Soman, Dilip and John T. Gourville (2001), "Transaction Decoupling: How Price Bundling Affects the Decision to Consume," *Journal of Marketing Research*, 38 (February), 30-44.
- Soster, Robin L., Ashwani Monga, and William O. Bearden (2010), "Tracking Costs of Time and Money: How Accounting Periods Affect Mental Accounting," *Journal of Consumer Research*, forthcoming.
- Spiller, Stephen A. (2010), "Constraints Drive Opportunity Cost Consideration," working paper.

- Swan, J. E. and Richard L. Oliver (1991), "An Applied Analysis of Buyer Equity Perceptions and Satisfaction with Automobile Salespeople," *Journal of Personal Selling and Sales Management*, 11, 15-26.
- Thaler, Richard H. (1980), "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization*, 1 (March), 39-60.
- _____ (1985), "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (Summer), 199-214.
- _____ (1999), "Mental Accounting Matters," *Journal of Behavioral Decision Making*, 12 (September), 183-206.
- Trope, Yaacov and Nira Liberman (2003), "Temporal Construal," *Psychological Review*, 110 (3), 403-21.
- Zauberman, Gal and John G. Lynch, Jr. (2005), "Resource Slack and Propensity to Discount Delayed Investments of Time versus Money," *Journal of Experimental Psychology*, 134 (February), 23-37.
- Zeithaml, Valarie A., Leonard L. Berry, and A. Parasuraman (1993), "The Nature and Determinants of Customer Expectations of Service," *Journal of the Academy of Marketing Science*, 21 (December), 1-12.

FIGURE 1

A MENTAL ACCOUNTING MODEL OF CUSTOMER SATISFACTION

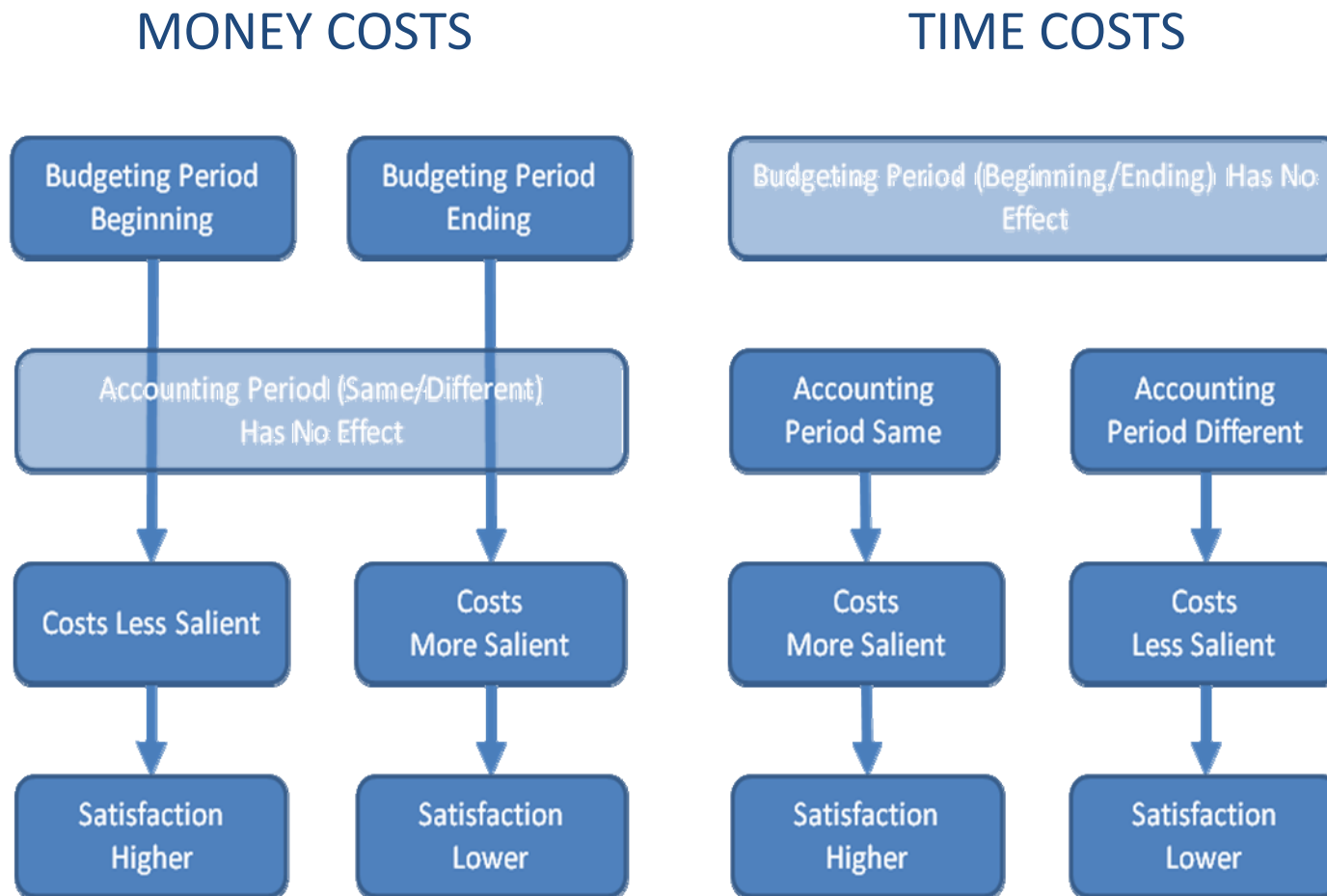


FIGURE 2:

THE INFLUENCE OF ACCOUNTING PERIODS ON COSTS OF TIME

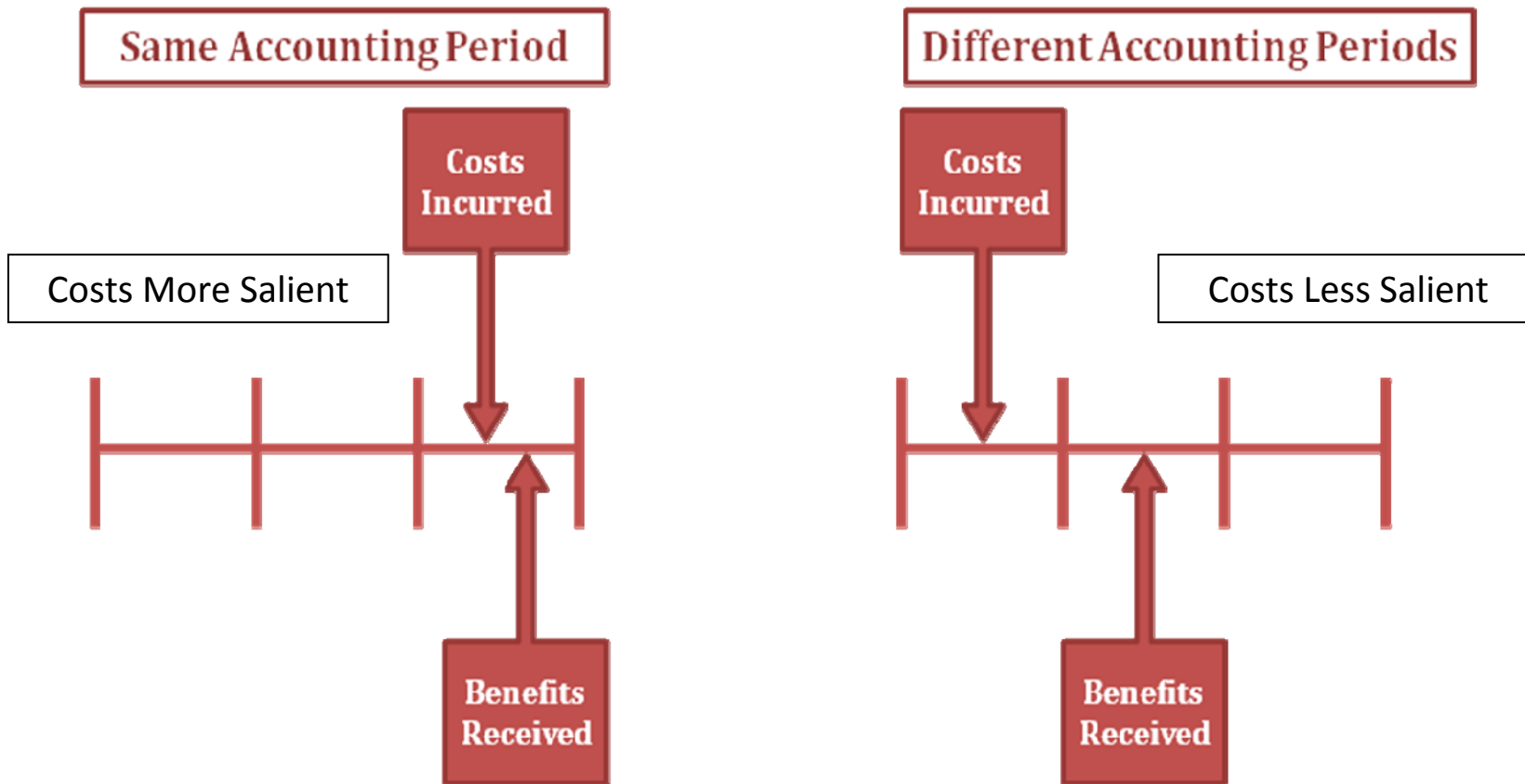


FIGURE 3:

THE INFLUENCE OF BUDGETING PERIODS ON COSTS OF MONEY



FIGURE 4

STUDY 1: SATISFACTION WITH RESTAURANT EXPERIENCE

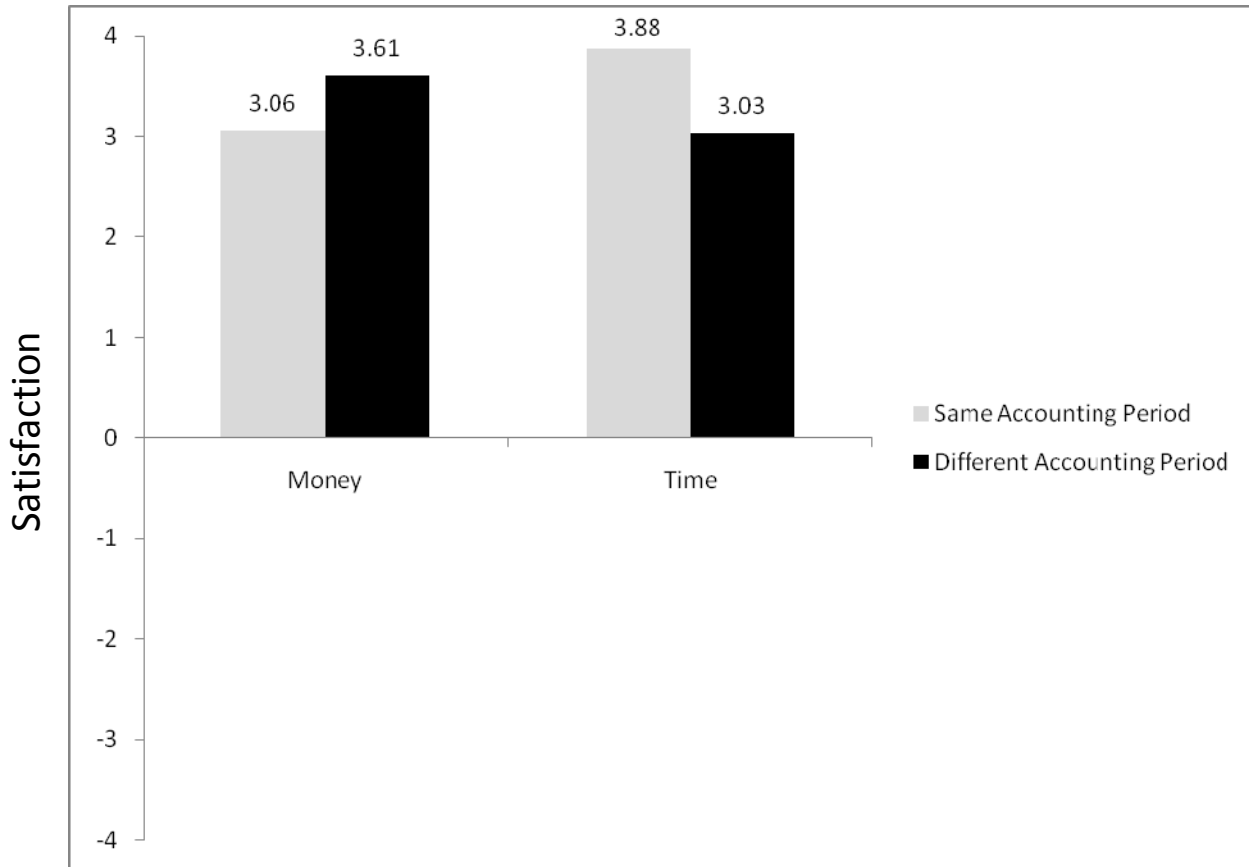


FIGURE 5

STUDY 2: SATISFACTION WITH AMUSEMENT PARK RIDE

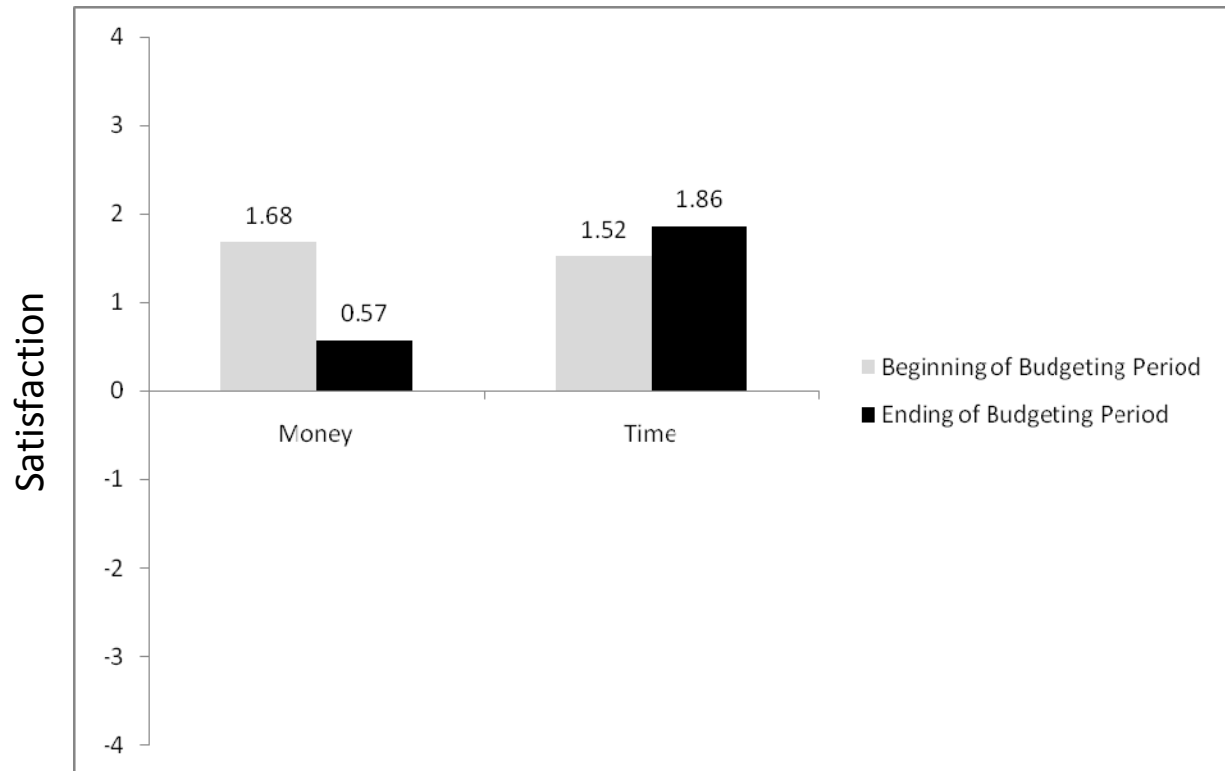


FIGURE 6

STUDY 2: LIKELIHOOD TO REPURCHASE THE AMUSEMENT PARK RIDE

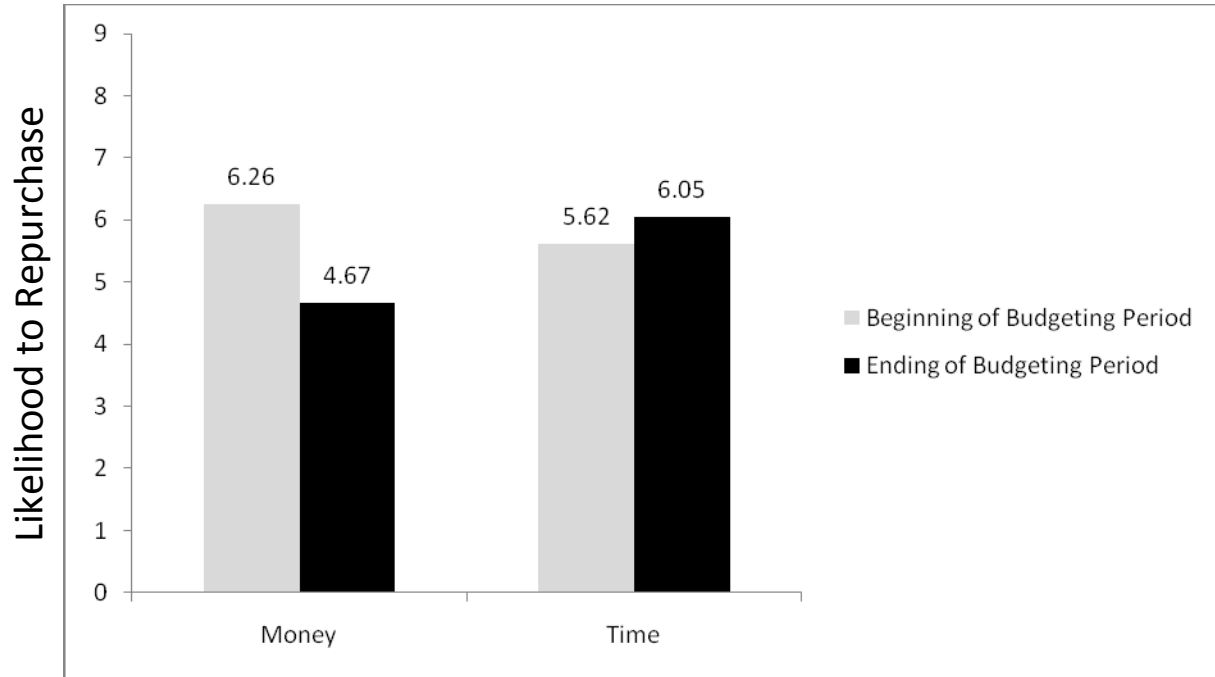


FIGURE 7

EXPECTED PATTERN FOR STUDY 3a: SATISFACTION WITH
AMUSEMENT PARK RIDE WHEN TIME IS SPENT

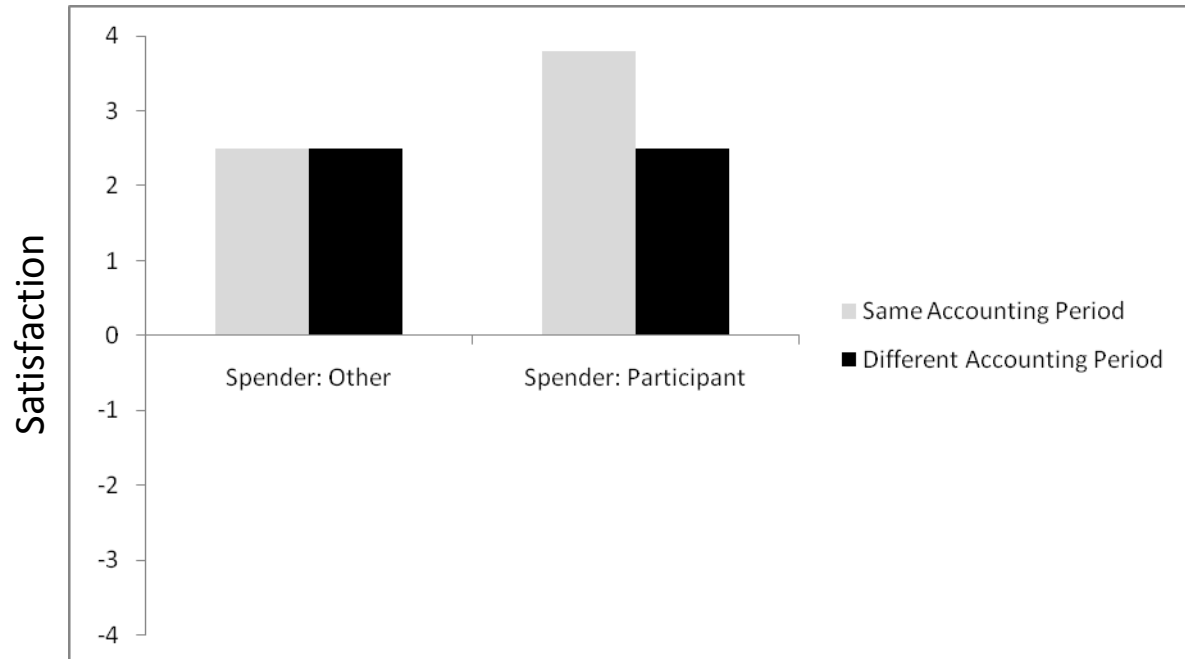


FIGURE 8

EXPECTED PATTERN FOR STUDY 3a: SALIENCE OF COSTS WHEN TIME IS SPENT

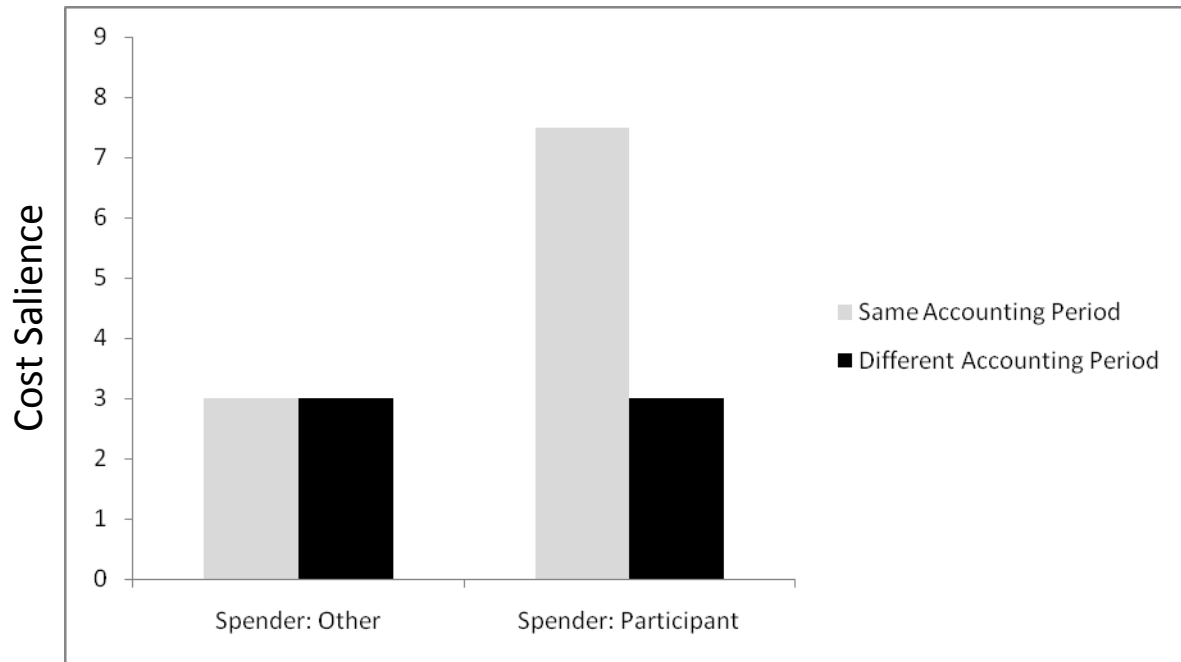


FIGURE 9

EXPECTED PATTERN FOR STUDY 3b: SATISFACTION WITH
AMUSEMENT PARK RIDE WHEN MONEY IS SPENT

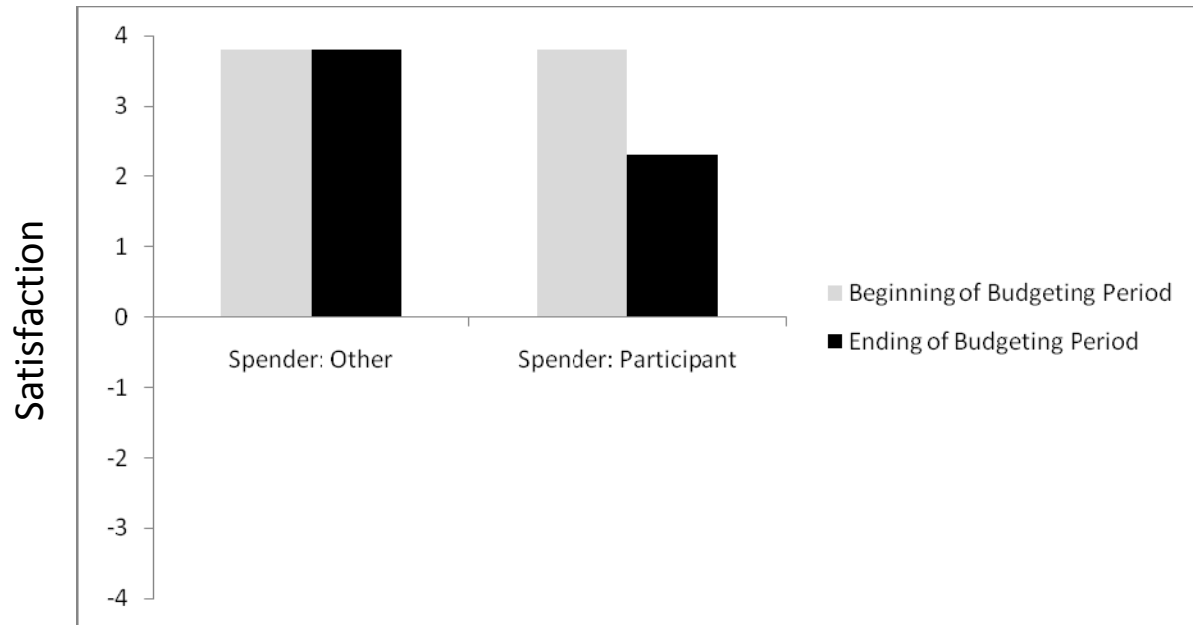


FIGURE 10

EXPECTED PATTERN FOR STUDY 3b: SALIENCE OF COSTS WHEN MONEY IS SPENT

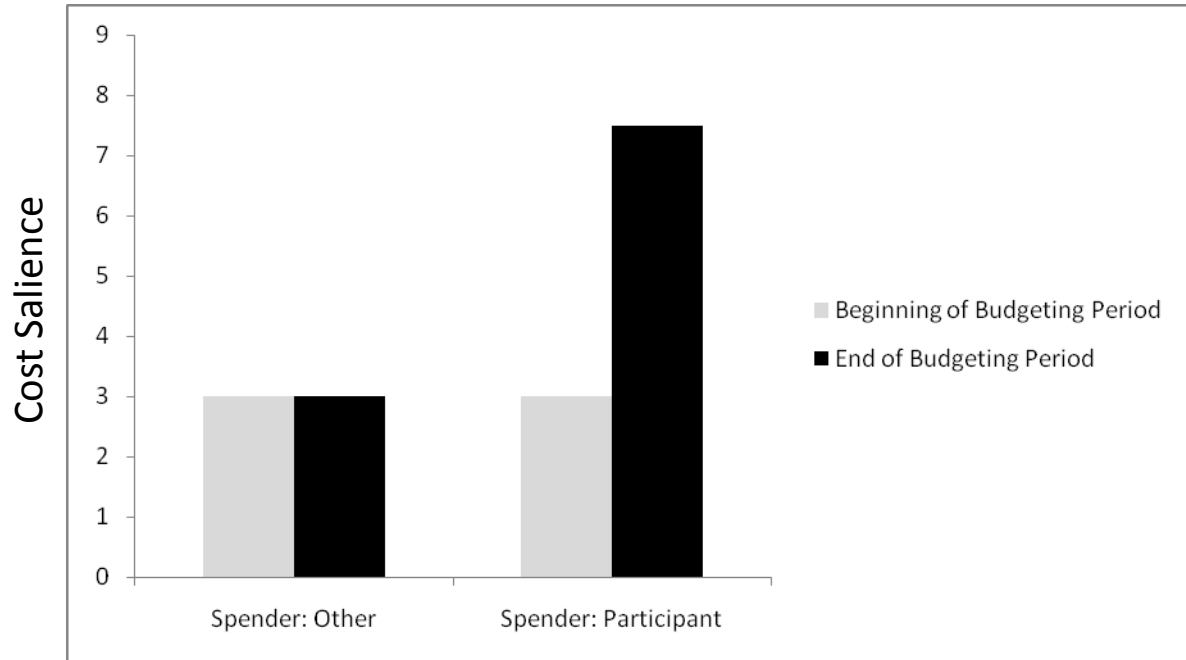
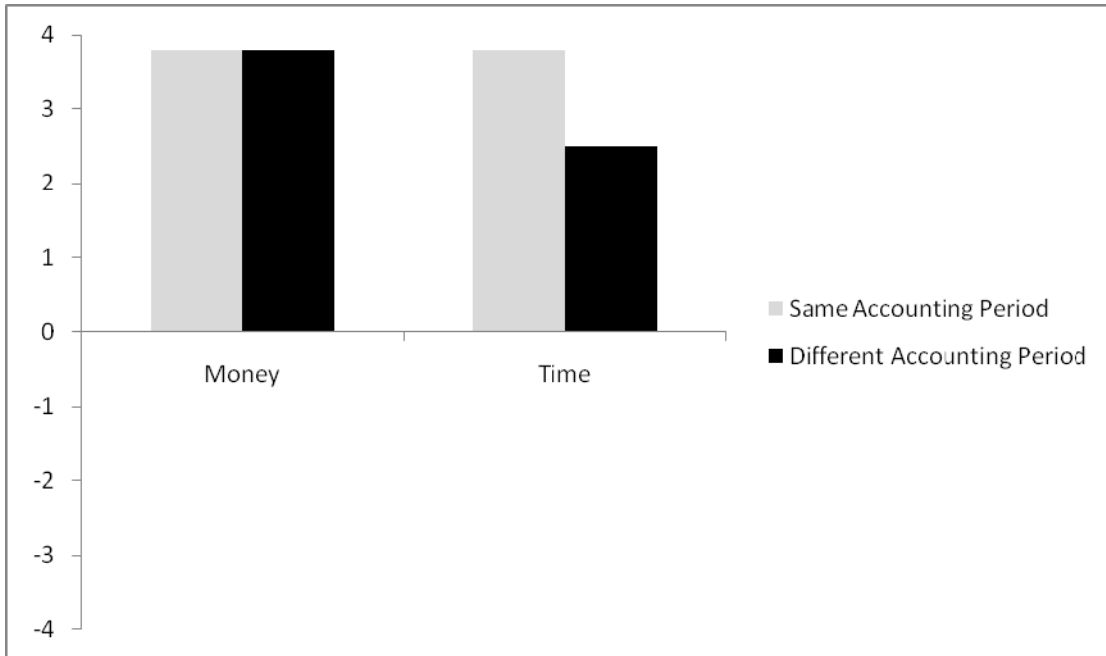


FIGURE 11

EXPECTED PATTERNS FOR STUDY 4: SATISFACTION WITH ICE CREAM

Budgeting Period: Beginning



Budgeting Period: Ending

