

Mental Accounting in Grocery Settings: Evidence of In-Store Slack from the Expected Cost of the Basket

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Abstract: The evidence from field studies in retail environments suggests in-store slack is part of the consumer's purchasing budget. These funds are used as a self-control mechanism so as not to exceed the budget. We propose a conceptualization of in-store slack as the difference between the expected cost of the basket and the total budget allocated for the present visit to the store. Then, we explain this slack from the composition of the customer's basket in three branches of a supermarket chain. Using data taken from a field study, we found evidence that in-store slack is used fundamentally for unplanned purchases, which is consistent with the notion that these funds are used to finance products where the decision to purchase is made in-store. We also found evidence of unused budgetary resources being transferred to in-store slack to finance unplanned products. This supports the idea that consumers are flexible when managing their mental accounts.

Keywords: mental accounting; in-store slack; budget; market basket; retail

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Introduction

Certain factors have been studied that facilitate unplanned buying. For example, it is known that unplanned buying results from exposure to in-store stimuli. Approximately 60% to 70% of purchases made in retail correspond to unplanned purchases (Underhill, 2000; **PO-PAI, 2014**). Consequently, managers make efforts in-store marketing, as for example, convenient prices or promotions and checkout lines to encourage impulse buying to stimulate these types of purchases. Customer impulsivity also plays a role in unplanned purchases. It has been shown that increased impulsivity increases the difference between the spending and planned budget on a visit to the store (Stilley *et al.*, 2010) suggesting a greater number of unplanned purchases on the purchase basket. However, Bell *et al.* (2011) found that unplanned purchases are about 20% of total purchases and that most of the variation in the number of unplanned buying is across shoppers. This suggests that differences in the number of unplanned purchases could be explained by sociodemographic or inherent characteristics of the individuals (Roberts *et al.*, 2014), and not necessarily by in-store stimulus. Additionally, all these studies have been performed with American consumers, which may not reflect the same behavior for consumers around the world.

Past research has shown that people tend to create and maintain various separate accounts with funds in each allocated for specific purposes, although the money available in each of those accounts is the same as if it were all in one (Cheema and Soman, 2006; Heath and Soll, 1996; Thaler and Shefrin, 1981). This behavior supposes a means of self-control to adhere to a budget, even when this entails higher maintenance and follow-up costs for several separate accounts. These studies have been carried out under controlled conditions and fictional scenarios. Additionally, the findings relative to mental accountings in retail settings are done without considering the basket

composition. **Other studies, for example, focus on finding factors that determine product usage based on perceived value (Arruda, Lima, and Lennon, 2014) or attentional and physical aspects of the store (Streicher, Estes, and Büttner, 2021).** In this study, a step further is taken, proposing a model of the deviation between the mental budget and the expected cost of the basket, taking into account product categorization based on which of them were (or not) in the shopping list.

Emerging markets have seen a rapid growth of shopping malls and malls, offering a wide diversity of brands and an increase in the purchasing power of consumers in these markets (Cakanlar and Nguyen, 2018). Consequently, it is worthwhile to study these markets' shopping behaviors due to their steady growth potential. The analysis of purchasing behavior and mental accounts is to our knowledge, the first to be conducted in an emerging country.

As indicated by Stilley *et al.* (2010), the slack account is conceptualized as the difference between the expected cost of the basket and the mental budget for the shopping list (itemized budget). This slack should include the funds for unplanned purchases. The main supposition of this study is that the expected or perceived cost of the basket reported by customers is the result of the follow-up and control of mental accounts (Heilman *et al.*, 2002). In other words, the use of funds from the slack account and the itemized budget is ultimately reduced to a perceived value that represents the expected cost of the products found in the shopping basket, and that includes products from the shopping list as well as unplanned products.

This article is organized as follows: First, the model of deviation between expected cost and budget is described, and then the hypotheses regarding the connection between the aforementioned deviation and the basket composition are proposed. Next, the hypotheses are

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tested from a substantial sample of more than 1000 customers of an important grocery chain, and finally the results and conclusions of this study are presented.

Mental accounting in retail settings

There is evidence that actual spending is closely approximated to spending intentions (POPAL, 2014). As Stillely *et al.* (2010) suggests, consumers have a mental budget (implicit or explicit) and it includes room for unplanned items. The mental budget, comprises an itemized budget, which represents money allocated to planned items, and a slack account, which represents money for unplanned purchases. According to the hypothesis of Stillely *et al.* (2010), the slack account is the mechanism by which consumers exert self-control so as not to deviate from the budget, and this influences the tendency to overspend. The tendency to overspend or the deviation between “what I think I am going to pay for my present basket and the budget that I have allocated for this grocery trip” might be due, for example, to: 1) the mental budget failing to estimate the real prices of products on the shopping list, and in order to abide by it in-store it becomes necessary to spend a higher amount than budgeted, 2) taking unplanned products because the customer forgot to incorporate necessities on their list and 3) making impulse purchases. In all these cases, slack account is added to the budget, so that the consumer is prepared for any of these three events: in the first case allowing them to abide by the planned product list, in the second and third case responding to needs triggered by stimuli found in-store (Inmann *et al.*, 2009, Rook and Fisher, 1995). This explanation agrees with the literature on self-regulation, where consumers impose restrictions on themselves to resist or at least control wants and temptations (e.g., see Loewenstein, 1996 and Wertenbroch, 1998). The existence of slack account allows consumer to self-regulate consumption in stores and avoids the negative utility derived from spending more than was budgeted (Kahneman and Tversky, 1979; Thaler, 1985).

When the consumer plans a grocery trip, even though he does not have an explicit budget, he has a mental list of requirements to replenish the household food stock. This shopping list calls for an estimation of the cost that could be based on past purchases and experiences (Bénabou and Tirole, 2004), and it makes up the budget for the list of planned product purchases, setting the itemized budget (Heath and Soll, 1996). As the consumer recognizes that he can be mistaken in the estimation of the funds needed, he has room to allocate additional resources in an additional slack account in the event of insufficient budgetary funds. At one extreme, an undisciplined consumer may need additional resources in this slack account. By undisciplined we mean those consumers who do not have sufficient self-control; they do not usually practice self-control to limit overspending, and if they do so, the effort to repeatedly inhibit the desire is so great that their ability to exercise self-control quickly vanishes and therefore the temptation to make impulse purchases is incurred (Maruven and Baumeister, 2000). Therefore, the slack account becomes a catalyst for expanding the necessary funds to maintain self-control.

The slack account is the key to ascertaining why there is a deviation between the total budget and the itemized budget, i.e., the difference between the “*how much I am going to pay*” factor and the planned. The former is the final result of the set of decisions made during the purchasing process where budgetary and slack funds have been used. This perception translates operationally into the expected cost of the basket, which is the result of the balance equation between different accounts and budgets for different product categories. Mathematically,

$$TB \approx EXPN = IB + SFE \quad (1)$$

where EXPN is the expected cost of the basket and SFE is the slack account derived from the expected cost of the basket. Thus, the slack account is conceptualized as the difference between the expected cost of the basket and the itemized budget, IB.

The perceived cost represents an important fact in understanding the limits of the added consumption, because this reveals the management of the mental accounts. The perceived cost of the basket represents a proxy of the consumer’s total and true budget, which includes the funds utilized from the budget allocated for planned purchases, and to additional funds held in in-store slack for unplanned purchases. Thus, the slack account is based on the final result of the purchasing process, i.e., the shopping cart with all products contained in it, and not on the intentions of additional spending that the consumer may have on entering the store.

Hypotheses

The slack account becomes a catalyst for expanding the necessary funds to maintain self-control. A certain amount of slack account funds may possibly be allocated to adhere to a pre-commitment to choose an indulgence over a necessity (Kivetz and Simonson, 2002), or to take advantage of discounted products (Blattberg *et al.*, 1995; Gupta, 1988) or simply to compensate for the lack of funds for the shopping list.

To study the use of resources of slack account spending, the products in a shopping basket were categorized as follows: First, Products in the basket from the shopping list which could be items on sale or discounted, or could be items not on sale or discounted. Second, Products in the basket not on the shopping list, which could be items on sale or discounted, or could be items not on sale or discounted. And third, Products from the shopping list not in the basket.

The products on the shopping list that are in the shopping basket, are part of the purchases planned in advance, and the funds come from the formal budget for planned purchases (the itemized budget). The products in the shopping basket but not part of the shopping list are part of the unplanned purchases and the origin of the funds to finance these purchases comes, according to Stillely’s hypothesis, from slack account. The products on the shopping list that are not in the basket are equivalent to unused resources from the mental budget.

The reasons for the absence of these types of products in the basket, even though they were planned for, are diverse; for example, stockouts (Helm *et al.*, 2013; Sloot *et al.*, 2005), disutility caused by a price increase (Lichtenstein *et al.*, 1993; Rajendran and Gerard, 1994) or budgetary restrictions.

Impulse buying brings about emotions of pleasure and guilt in the individual: on the one hand the pleasure of immediate gratification but on the other the sensation of guilt for exceeding the budget (Frentz and Frentz, 2020; Rook, 1987). Slack account helps attenuate the feeling of guilt and preserve the sensation of pleasure. Thus, unplanned products in the shopping basket due to impulse purchases should be financed from slack account to maintain the pleasure and reduce the disutility of guilt.

The constant self-regulation the individual must exert to contain desires for impulse or desired purchases depletes psychological resources and ultimately leads to fatigue (as indicated by Maruven *et al.*, 1998). When psychological resources are depleted, individuals feel a greater propensity to buy and spend more in unanticipated shopping conditions than those individuals whose resources have not yet run out (Vohs and Faber, 2007).

Inasmuch as these resources are depleted, the subject can alleviate the exhaustion by using the additional resources of his slack account, thus staying within the planned budget. The slack account therefore serves to alleviate the depletion patterns of self-control in the face of unplanned desires for impulse purchases. Impulse buying encouraged by a positive normative evaluation (e.g., a product forgotten but necessary and lacking at home) (Rock and Fisher, 1995) could be solved by a consumption or extraction of in-store slack.

The conceptualization of slack proposed in this study is able to capture this effect through the number of products of this type in the consumer's basket. Thus:

H1: There will be a positive association between the number of unplanned products in the basket (with and without discounts) and slack account.

In conformity with the experience of past purchases, the consumers are able to establish a budget using a shopping list. When consumers receive unexpected in-store coupons on planned products, they perceive that the spending on planned products will be less than expected and this promotes an increase in the purchase of unplanned items, increasing the size of the basket (Heilman *et al.*, 2002). **On the other hand, it has also been observed that unplanned purchases are positively related to confidence and that this relationship is mediated by mental accounting (Wu, Chen, and Chien, 2013). Thus, mental accounting also plays a mediating role in impulse purchases.** It is suggested that the savings produced by an in-store discount on a planned product increases slack account. This is the idea of a psychological income effect, in which windfall gains have high marginal propensity to consume (MPC) close to one (Shefrin and Thaler, 1988; Thaler, 1990). This means that these released funds

or extra money is available for unplanned purchases or for increases of items of planned products (Arkes *et al.*, 1994). Apparently, the mental accounts are sufficiently flexible to move money between accounts, as occurs when consumers obtain windfall gains when making a decision, weakening the sunk costs or making them disappear (Soman and Cheema, 2001).

As slack accounts are funds with a high MPC, it would be expected that these additional resources helps to increase the funds for unplanned purchases. This is similar to what happens with small gains when consumers encounter unexpected in-store coupons (Milkman *et al.*, 2009): they violate the principle of the fungibility of the money, increasing the in-store cost in comparison with those consumers who do not receive a discount coupon. Thus,

H2: There will be a negative association between the number of discounted planned products and the slack account.

Hypotheses H2 and H3 (below) can be understood from the principle of graded category or graded membership (Barsalou and Sewell, 1985; Rosch *et al.*, 1976), in which the elements vary in relation to their inclusion in a category. In the context of mental accounts, is the notion that monetary resources can belong to a certain category (Wang, Yan, and Chen, 2019; Shefrin and Thaler, 1988). Henderson and Peterson (1992) reported that the use of money appears to be conditional upon the category to which it belongs or to its source. For example, if the source of the money is a lottery or a gift, these funds are usually spent on needs for personal benefit, but if the source of the money is an inheritance or a work bonus, these funds are usually spent on a certificate of deposit or put in a savings account. In a grocery store, unexpected discounts on planned products and the non-use of planned resources (due for example to a stockout) are equivalent to resources from the mental budget for planned purchases. Thus, it could be expected that these resources will be transferred to the in-store slack for use on complementary products (in the first case) or substitutes (in the second case).

Based on the idea that consumers are engaged in mental accounting, they are able to recognize the savings generated from purchases with discounts, and are able to allocate those resources for unplanned purchases. The studies by Arkes *et al.* (1994), Heilman *et al.* (2002) and Milkman *et al.* (2009) show that windfall gains are highly likely to be spent on products that would not be bought under normal conditions. Moreover, windfalls tend to promote unplanned purchases. In this vein, it has been hypothesized that discounts on planned products act as windfalls which are added to the slack account, the funds which are allocated to unplanned purchases. Similar to the effect of unexpected coupons and discounts, this study hypothesize that when the consumer does not incorporate planned products into his basket, an effect of psychological gain is produced that leads to underspending of the itemized budget and therefore, there are resources freed up with a high MPC that are transferred to the slack account:

H3: There will be a negative association between the number of planned products outside the basket and the slack account.

Method

Sampling and Data Collection

A field study was conducted in which 1429 customers of a national supermarket chain were intercepted. Customers were approached as they were heading to the checkout with their shopping basket. Three branches located in different geographical areas of Santiago, Chile were chosen in an attempt to capture customers with different income levels. Intercepting customers as they were lining up to pay allowed the questions to be asked as they were waiting their turn, which improved their willingness to participate. At the end of their participation, respondents received an ecological grocery bag as an incentive, which was given once all the questions had been answered satisfactorily. Respondents were asked to estimate the expenditure for the products they planned to buy when they entered the supermarket (itemized portion of the budget or mental budget, MB). They were then asked to estimate cost of the basket in front of them (Expected cost, EC). They were also asked to indicate from their shopping list those products in the basket that were discounted and those that were not (Unplanned items with discounts, UNPLD, and unplanned items without discounts, UNPLWD). Finally, they were asked to indicate which products they had planned to buy but which were not in the basket (OUTBK). The time the client estimated spending in the store from entering to arriving at the checkout (TRIP), and the supermarket's membership card number were also included. Later, this identifier allowed to find the receipt and compare the expected cost of the basket with the real cost (RC). Customers were approached in three different branches in Santiago. Branch A is located in a sector characterized by inhabitants with a high income. Branch B is in a sector with upper-middle income inhabitants, whereas branch C is located in a sector with middle-income inhabitants.

Variables

Mental budget (MB)

The respondents were asked to estimate what they will spend on planned product purchases during the present trip to the store. This variable corresponds to the itemized budget of the total budget (Used also in Stilley, Inman and Wakefield, 2010).

Expected Cost (EC)

Before going through the checkout, the respondents were asked to estimate the cost of the present basket. We interpreted this measurement as a proxy of the total budget.

Real cost of the basket (RC)

This is the real cost of the shopping basket. This measurement is obtained from the customer's receipt after paying.

Slack from the expected cost of the basket (SFE)

This measurement is calculated as the difference between the expected cost of the basket (EC) and the mental budget (MB) (Used also in Stilley, Inman and Wakefield, 2010).

Out-of-basket items (OUTBK)

This indicates the number of products that outside the basket but which are part of the list of planned purchases.

Unplanned items (UNPLD)

This indicates the number of unplanned products in the basket and recognized by the buyer as being discounted or on sale.

Unplanned items without discounts (UNPLWD)

This indicates the number of unplanned products in the basket not discounted or on sale.

Planned items with discounts (PLD)

This indicates the number of planned products in the basket that are discounted or on sale.

Trip length (TRIP)

This is the duration perceived by the customer of the time that elapses from entering the store to reaching the checkout, measured in minutes.

Local (LOCAL)

This indicates the branch (A, B or C) where the transaction was recorded. Branch A is used as the benchmark.

Gender (GENDER)

This indicates if the purchases were made by a man, a woman or a couple. The couple is used as the benchmark.

Number of items (NITEMS)

This represents the total number of items in the customer's basket.

Average ticket (TICKET)

This is the real cost of the basket divided by the number of items. This variable represents the average cost per item in the customer's basket (Used also in Stilley, Inman and Wakefield, 2010).

Funds used for unplanned and planned items (R)

For each basket purchased, we have identified the monetary funds used by the supermarket clients, on planned and unplanned items (with and without discounts). This information is collected from the scanner data.

Model estimation

In order to test the hypotheses, this study considered a fixed cluster effect model estimated via Ordinary Least Square, in which the dependent variable is the slack account, SFE.

$$SFE_g = a_1 UNPLWD_g + a_2 OUTBK_g + a_3 PLD_g + a_4 UNPLD_g + g_1 TICKET_g + g_2 TRIP_g + g_3 LOCAL_g + g_4 GENDER_g + e_g \quad (1)$$

where i denotes the i^{th} sample observation and g denotes the branch to which the sample observation pertains. e_g is the error term under the assumption $e_g \sim N[0, \sigma_g^2]$. This permits heteroskedasticity and correlation within a cluster. Each branch is located in a different sector of the city and serves customers from each of those sectors. Given this condition, common effects could be included for a "branch" effect that have not been taken into account in this study and therefore induce a correlation through the observations that are similar or

belong to the sector where the branch is located. Alpha coefficients are related with testing the hypothesis, while gamma coefficients are related with control variables.

It must be borne in mind that the customer himself recognizes an item as discounted or not, so that the models are constructed on the basis of the buyer's knowledge about the products in his basket because he is the one who manages his accounts during the in-store purchasing process.

Findings

Descriptive statistics

Table 1, presents descriptive statistics of the sample. The mean of itemized budget is CLP\$30.579 (SD=30.484) and the mean of expected cost of the basket is CLP\$34.234 (SD=30.712). The first noteworthy observation of the sample is that the slack average is positive and small. The average difference between the expected cost of the basket and the Itemized budget is CLP\$3,640 (SD=13.873) with a median of CLP\$2,000. This value represents a percentage well below the average of the expected cost of the basket, which leads one to suppose that consumers tend to spend their funds according to what has been planned for their trip to the store. However, it is possible to observe

skewed data and a high degree of heterogeneity of the sample due high values of standard deviation in relation to the means values. The mean of the real cost of the basket is CLP\$33.861 (SD=31.874). This value is very similar to the expected cost, which conduce to think that supermarket customers adjust to their total budget (itemized budget plus slack account).

The mean quantity of products of a basket is 17.6 (SD=16.7). The average number of products that consumers planned to buy, but not present in the basket is 0.42 (SD=0.7). The average number of planned products present in the basket that the consumer recognize with discount is only 0.99 (SD=1.09). However, the average number of unplanned product in the basket recognized without discount is 1.51 (SD=1.18), while the number of unplanned with discount is only 0.17 (SD=0.54). These statistics indicate that buyers tend to include unplanned products in their baskets, but do not represent a significant proportion of them.

The average trip length to the supermarket is 28.8 minutes (SD=18.6). This time is an indicative that purchases done by buyer of this sample are mainly for everyday purchases and not for the monthly stock replenish.

Table 1 – Descriptive statistics of the sample (n=1429)

Variable	Percent	Mean	Median	SD
Branch (LOCAL)				
A	28.2			
B	36.8			
C	35.0			
Gender (GENDER)				
Female	40.9			
Male	32.2			
Couple	26.9			
Itemized budget (MB)		30.579	20.000	30.484
Expected cost (EC)		34.234	25.000	30.712
Real Cost (RC)		33.861	24.502	31.874
Slack (SFE)		3.640	2.000	13.873
Out-of-the basket items (OUTBK)		.42	0	.7
Unplanned items (UNPLD)		.17	0	.54
Unplanned items without discounts (UNPLWD)		1.51	1	1.18
Planned items with discounts (PLD)		.99	1	1.09
Number of items (NITEMS)		17.6	13	16.7
Trip length (TRIPL)		28.8	30	18.6
Average Ticket (TICKET)		1.554	1.412	675

Note: The values for MB, EC, RC and SFE are in local currency, CLP. To get an idea, US\$1=CLP\$553.

Models of slack account

Three alternative models were considered in order to detect the effects of unplanned purchases and the discounts on the slack account-dependent variable¹.

Model 1:

The analysis begin with model 1 in Table 2, which confirms the presumption that the conceptualization of slack account is related positively to the number of planned products on the mental shopping list ($b=115.24, p<.001$). This is to say, the higher the number of products on the planned shopping list, the greater the slack account because it is possible that with a longer shopping list, there is an increased possibility of including complementary products (Manchanda et al., 1999; Mulhern and Leone, 1991; Walters, 1991) and/or products forgotten on the mental shopping list (Rock and Fisher, 1995). Thus, the buyer anticipates this possibility and comes with a greater willingness for unplanned purchases². As expected, the number of unplanned purchases consumes in-store slack funds significantly, and does so in more than double the number of planned purchases ($b=2,551.52, p<.001$). This provides evidence to support the idea that these funds are used primarily to finance products that were not included on the shopping list. Thus, H1 at this moment is supported.

Model 2:

Model 2, Table 2 considers the effect of the number of unplanned items without discounts (UNPLWD), the number of planned items outside the basket (OUTBK) and the products recognized to be discounted present in the basket (DISC)³. This model provides robustness to the previous result, breaking the basket on products with and without discounts. The covariate DISC does not discriminate between unplanned or planned products, it only identifies products that the customer recognizes as being discounted.

The effect of number of discounted products present in the basket (DISC) is positive ($b=191.0, p>.1$), but it is not significant, which suggests that in aggregate terms the items included in the basket recognized as being on sale or discounted have no bearing on the availability of slack account funds.

Under this model, H1 is again confirmed ($b=2,295.44, p<.05$), indicating a significant positive effect, which suggests that a greater number of unplanned items without discounts included in the basket makes a more intensive use of slack account.

Model 2, is also useful for testing H3 which indicates a negative relationship between the number of planned items outside the basket and in-store slack. This hypothesis is confirmed, at least in the sign ($<$), but it does not reach a significance of 10%.

Model 3:

It must be recognized that the discounted items can be planned (PLD) or unplanned products (UNPLD). Model 3 incorporates this differentiation for discounted items. Under this specification, the results indicate that the unplanned products without discounts promote the use of in-store slack funds ($b=2,447.59, p<.01$). The same occurs for unplanned products with discounts ($b=2,340.35, p<.001$) and their effect is slightly less than for the unplanned items without discounts. This is evidence in favor of H1.

Hypothesis H2 is now examined. The variable PLD represents the number of planned products with a discount. It is interesting to observe that the effect is negative according to the prediction, but is not significant ($b=-355.56, p>.1$). This result does not support the hypothesis. The studies by Arkes *et al.* (1994) and Milkman *et al.* (2009) showed that the discounts and windfall gains (e.g., discount coupons) produced a tendency to spend more. Nevertheless, it seems that these discounts or gains were not necessarily on planned products.

Hypothesis H3 is again supported by the results of model 3 ($b=-2,194.82, p<.05$). All else being constant, this result shows that leaving a planned product on the shopping list outside the basket makes no use of mental budget (itemized budget) resources. These resources are transferred to the slack account, and therefore, they are available for unplanned purchases.

¹As Peter *et al.* (1993) suggest, using the variables separately is better than the difference between the two, especially when there is a high correlation between the difference in scores and their components, and also when these three components are included in the model. In our case, the correlations between the difference in scores and their components is low (less than 0.2 in absolute value and not significant in one of them) and the components separately are not included, such that we discount problems of spurious correlation. Additionally, alternative models were estimated, taking the mental budget (itemized budget) as an independent variable and the expected cost as a dependent variable. The results are very similar to those in Table 2.

²The reader must interpret this result in terms of "number of products" and not in terms of "monetary resources".

³Note that: # planned items = # total items of the basket - OUTBK - DISC, so as we want to study the effects of OUTBK and DISC separately, we do not include the number of planned items in this model or in the following models.

Table 2 – Results for slack account model

	Model 1 ^a	Model 2 ^a	Model 3 ^a
Intercept	-7,775.94 [*]	-4,722.40	-4,732.09
Planned products	115.24 ^{***}	-	-
Unplanned products	2551.52 ^{***}	-	-
UNPLWD	-	2,295.44 [*]	2,447.59 ^{**}
OUTBK	-	-2,071.01	-2,194.82 ^{**}
DISC = PLD+UNPLD	-	191.00	-
PLD	-	-	-355.56
UNPLD	-	-	2,340.35 ^{***}
TRIPL	12.80	72.68 ^{***}	78.86 ^{***}
Branch: C	-869.04 [*]	-1,972.24 ^{**}	-2,203.78 ^{***}
Branch: B	352.22 ^{**}	-676.43	-963.82
GENDER: Female	1239.35	855.72	946.98
GENDER: Male	3088.51 [*]	2,607.95 [*]	2,684.65 [*]
TICKET	1.96 [*]	2.01 [*]	1.97 ^{**}
Model R ²	.0834	.0738	.0831
Model p-value	<.0001	<.0001	<.0001
F_statistics	F(8,1161)=13.2	F(9,1160)=16.8	F(10,1159)=16.5

Notes: Levels of significance: “***” 0.001; “**” 0.01; “*” 0.05; ‘.’ 0.1. ^aStandard errors were corrected for heteroskedasticity and intra-cluster correlations using cluster-robust standard errors (see Wooldridge (2003) and Cameron et al. (2006)).

All variance inflation factors are less than 4, for all coefficients of each model. This suggests that multicollinearity is not a major concern (Hair et al, 2006). The estimations for each model take couple and branch A as the benchmarks for gender and branch, respectively.

Discussion and conclusions

The findings of this research provide new evidence in favor of the use of slack account, in the same line of investigation as Stillely and colleagues, from real field data. The slack account was expressed in terms of the difference between the expected cost of the basket and the itemized budget for planned items. The slack account bears relation to the composition of the basket of products based on the consumers’ recognition of unplanned items, with and without discounts, and of planned items that remained outside the basket. This study contributes to this literature by showing how this positive and systematic difference between the expected cost and the itemized budget can be explained from the characterization of the basket belonging to consumers who shop on a regular basis. The slack account is supported by the mental accounting theory (Thaler and Shefrin, 1981; Thaler, 1985; Shefrin and Thaler, 1988), where the consumers, rather than optimizing their consumption choices over a long period of time, tend to make their purchase decisions on shorter time horizons using mental accounts as a means of self-control.

It has been found a positive relationship between the number of unplanned products of the basket, and slack account, which suggests that this type of unplanned items included in the basket through impulse purchases or forgotten needs, are financed through these additional resources not included in the mental budget for the shopping list. This phenomenon also occurs independently of whether the unplanned product is recognized with or without a discount. With this result in

mind, it leads one to wonder about the role of complementary products in stimulating unplanned spending. If the total budget remains constant, it is possible to postulate the substitution effects between products, including substitution effects by amount. For example, the possible effect of psychological gain on the discount of a planned product over the amount of the product the consumer decided to include is not clear. This suggests there is an underestimation of the effect of the discount on the use of the slack account. Additionally, no distinction is made between unplanned purchases due forgetfulness from those on impulse. These observations prompt possibilities of future research in this same line.

These results support the hypothesis that consumers come with extra resources for “spur-of-the-moment” purchases, maybe as an avoidance mechanism to loss aversion (Tversky and Kahneman, 1981) and as a self-control mechanism to keep costs at bay. A future investigation should investigate why the unplanned products with discounts promote greater use of slack funds than unplanned products without discounts. A possible conjecture is that the unplanned products without discounts do not correspond to products needed for the home requiring replacement, but that were not considered as part of the planned shopping list due to forgetfulness, while the unplanned products with discounts are a reflection of an impulse purchase triggered by the discount. If this were the case, the in-store stimuli, encourage the use of the slack account. Thus, the mission of the in-store stimulus is triggering the use of these funds with a high propensity to consume.

The resources of the mental budget for planned purchases that are not used, are at the consumer's disposal. It can represent a credit to the slack account. This gives support to the idea that windfall gains from fund not used and from discounts, are transferred to the slack account. Nevertheless, in this work it is not clear if a planned product that stays outside the basket is due to a stockout, cost or quantity (there is less than what was planned). It is possible to speculate substitution effects of brands in the event of stockouts and substitution effects due to quantity in the event of high product prices.

Another interesting result is that the planned products with discounts do not have a significant effect on slack account. Further research should to investigate why there is no windfall effect on this category of product.

Finally, future studies should propose buying behavior models that consider the nature of the distribution of shopping baskets quantities and correlations in quantity decisions between different products (Dippold, 2013). This technical element in estimating behavioral models could yield exciting new results concerning how consumers transfer resources between mental accounts. Another issue that could be improved in a future research, is to study the use of slack account under different planning levels of the shopping trip. This is because the better planned shopping trip is, the share of unplanned purchases is smaller (Nordfalt, 2009).

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