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Deviances from planned purchase: consumer learning history and behaviour setting implications to consumer spending

ABSTRACT

Consumer spending is an important performance measure at the individual level and retail decision makers usually try to understand which factors influence this response variable. Deviances from planned purchase are specific classes of consumer behaviour that may explain consumer spending. Usually neglected in cognitive and behaviourist psychologists' literature, deviances can vary in different levels and may have its origins on the classification of consumer groups according to their observable behaviour, compared to a planned disposition. Our empirical approach seeks to address this gap as we try to explain two substantial behavioural issues: a) how consumers could be arranged into groups, which allude to their buying pattern; b) and the power of these groups to explain consumer spending. Research design involved a field experiment in a supermarket, where 372 purchases were observed, during 13 weeks. The methodology encompassed a stage that enabled the development of a classification of consumers into groups, in respect to matching buying-planned comparisons. A multinomial logistic regression model was developed to predict consumer groups, while an Analysis of Covariance (ANCOVA) explained consumer spending. Main results show the importance of consumer learning history to predict consumer groups and the significance of these groups to consumer spending. These findings corroborate Behavioural Perspective Model (BPM) primary features and highlight novel activities that effect behaviour in routine purchasing processes, such as supermarkets purchases.

Key Words

Consumer spending; Consumer learning history; Consumer behaviour setting.

I. INTRODUCTION

When a consumer enters in a supermarket, he presumably has a set of preferences, which refer to categories planned to buy. This individual can "fully match" the products purchased with the ones planned or exhibit deviances, which varies in different levels, ranging from minor deviations up to significant changes in behaviour. In extreme situations, he can buy more or fewer categories than planned and differ completely from his declared disposition. Consumer behaviour theory usually assembles all these levels and merely describes them as unplanned purchases, using a peripheral distinction between unplanned purchase and impulse buying (Amos, Holmes, & Keneson, 2014; Kacen, Hess, & Walker, 2012). This means that a very specific class of consumer behaviour is neglected in the literature, both from cognitive and behaviourist psychologists perspectives, which alludes to deviances from planned purchases.

These deviances refer to the relationship between purchase planning and consumer spending, which is a central variable to marketing phenomenon in retail settings, such as supermarkets. Managers adapt their strategies when observe that consumers expenditures are declining, performing adjustments in pricing fluctuations or assortment composition (Fornell, Rust, & Dekimpe, 2010). This practical concern finds explanation in marketing literature with economic tradition, worried about predicting consumer expenditure (Carroll, Fuhrer, & Wilcox, 1994; Carruth & Dickerson, 2003), but a central question persists for psychologists dedicated to analyse the planned-spending relationship: how to relate minor and major deviances to consumer spending in retail environments?

This article seeks to answer this research question by explaining two important behavioural issues: a) how consumers could be arranged into groups which allude to their buying pattern; b) and the power of these groups to explain consumer spending, a substantial performance measure at the individual level (Fornell et al., 2010). Our empirical approach was

grounded on a methodology that involved a field experiment to register consumer behaviour and classify individuals by deviances from planned purchases. The theoretical framework that provides the basis for our study is the behavioural psychology, a research stream dedicated to broaden behaviour analysis by incorporating field experimental designs (Foxall & Sigurdsson, 2013).

This article is organized as follows. Section II details the theoretical background to the research framework, where we address the importance of the Behavioural Perspective Model (BPM). Next, we detail the empirical study methodology, followed by the results. The analyses involved a multonomial logit model to explain the probability to individuals to belonging to deviances groups and an Analysis of Covariance to explain consumer spending. Finally, we present results discussion and indications of further research.

II. THEORETICAL BACKGROUND

II.1 Using behavioural psychology elements to explain consumer spending

Consumer spending is not amongst the central key words of consumer behaviour research, as shown by the historical analysis conducted by Wang, Bendle, Mai and Cotte (2015) on 40 years of articles published on *The Journal of Consumer Research*. Conversely, it is adequate to consider it a central variable to the consumption phenomenon, as consumers are "situated" in a behaviour setting comprised by social and physical stimuli, where the primary output is choice (Foxall, 2005) and, consequently, spending. When analysed at the individual level, it is a measure that may reflect external and internal effects to behaviour, specially if data is collected using a natural experiment design, a powerful approach to grasp causal relationships (Shadish, Cook, Campbell, 2002).

These internal and external effects are described as consumer learning history and consumer behaviour setting in the BPM, a theoretical framework developed to investigate and interpret consumer behaviour in complex marketing systems (Foxall, 1992). In this model, behaviour is an outcome provided by these two elements (Foxall, 2015) where their intersection defines the consumer situation. For example, in an open behaviour-setting scope, where functional and social benefits are low, individuals exhibit a specific class of behaviour, maintenance, guided by routine purchasing (Foxall & Yani-de-Soriano, 2005).

Hence, the BPM is a unifying framework dedicated to uncover human activity in natural settings, such as consumers' economic and social choices under social and physical stimuli (Foxall & Sigurdsson, 2013). It is an adequate theoretical structure to analyse consumer spending in open settings, such as supermarkets (Foxall, 1993), where the independent variables are the components of consumer situation, represented by consumer learning history and consumer behaviour setting (Fagerstrøm & Sigurdsson, 2016; Foxall, 2001).

II.2 Research framework: underscoring deviances from planned purchases as antecedents of consumer spending

The BPM produced important empirical results, mostly at the brand level, which stressed the importance of utilitarian and informational reinforcements to brand choice (Oliveira-Castro, Cavalcanti, & Foxall, in press). An opened avenue derived from this approach refers to the influence of the consumer situation elements to a different measure of behaviour, consumer spending.

Empirical research that centers on consumer spending is scarce and resorts to early advancements of the field, when one of the main concerns was to relate spending to economic variables, such as inflation (Katona, 1974). The framework devoted to scrutinize this variable had not evolved enough to provide meaningful and systematized answers, but established a starting point to study consumer spending: individuals could buy less or more than initially

planned. Considering that in the context of BPM behaviour is environmentally determined (Foxall, 2000), one could argue that in a specific consumer situation (e.g. routine purchasing) individuals can exhibit deviances that are also influenced by social and physical factors.

Consequently, a major gap is that literature solely ignores deviance and its predictors. Foxall's (1998, p. 322) definition of consumer behaviour includes "activities of buyers, former buyers, and potential buyers from prepurchase to postpurchase, consumption to discontinuance", but overlooks this primary component of complex behaviour. Our research model grounds on the BPM and encompasses the environment (Foxall, 1998), where the output is a result of the consumer situation. Considering an open setting, such as a supermarket, consumer behaviour results from behaviour setting (external factors) and learning history (internal factors), but also produces an important output, which predicts consumer spending: deviances from planned purchase. Figure 1 depicts our research framework.

Figure 1. Research framework to consumer spending behaviour in routine purchasing

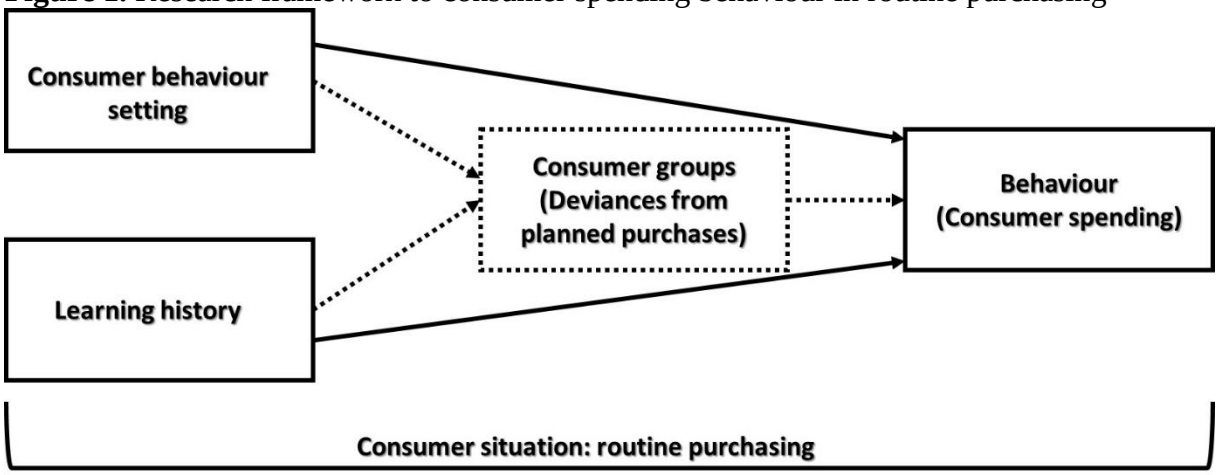


Figure 1. Solid arrows illustrates Behavioural Perspective Model (BPM) expected (and formalized by the extant literature) influences to consumer behaviour, while dashed arrows incorporates our new proposed component to this model: consumer groups, represented by deviances from planned purchases.

III. METHOD

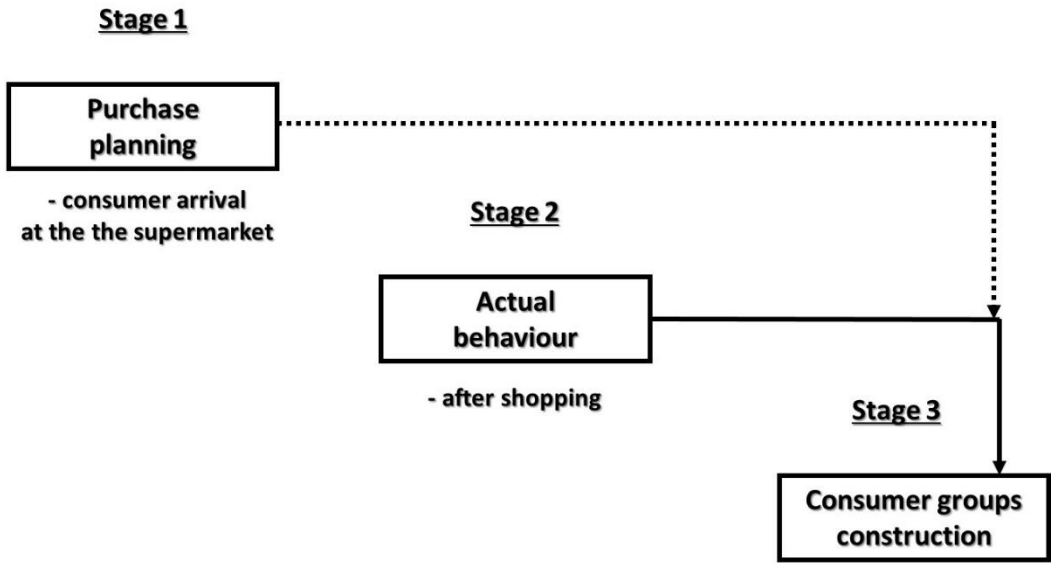
We organized a field experiment in a supermarket located in a Brazilian capital with an estimated population of approximately 1.5 million inhabitants, according to the latest survey conducted by the Brazilian Institute of Geography and Statistics. The distribution of age in the urban area of this city is mostly frequent between 30 and 39 years individuals (223.816.000). Males of this age correspond to 107.713.000, while women correspond to 116.797.000 (IBGE, 2010; 2015). The supermarket is located in a central area, near a university and an expressway, which ensures sample variability.

During 13 weeks, consumers of this supermarket were invited during weekdays and weekends to participate in the research. The criterion used to select consumer was their intention to purchase when they arrived at the store. Three trained researchers asked permission for a brief interview (Stage 1) where basic demographic and purchase planning information were collected. In the case of demographic variables, collected information regarded to census characteristics, such as family income, gender, and age. The second group of variables refer to marketing and consumption characteristics. For example, researchers evaluated whether the supermarket had any sort of promotions to a specific product category (meat, fruit or vegetables) at that day. The collection of behavioral variables identified whether the respondent had a shopping list or organized a price survey.

Therefore, seven questions assessed: 1) which product categories individuals were planning to buy (38 category options); if the consumer organized 2) a shopping list or 3) a previous price consult; 4) reported familiar income (a range of 10 possible values); consumer 5) sex and 6) age; finally, if he/she was accompanied during that shopping trip. At the end of this brief interview, researchers asked permission to individuals provide them the receipt after their shopping and payment at the counter (Stage 2). Given information of Stage 1 and Stage 2 researchers could compile and compare purchase planning and actual behaviour information, such as form of payment and the total value of the purchase. Additional variables were measured for the observations (consumer shopping trip), such as day of the month, day of the week, form of payment and promotion day at the supermarket.

After the experiment conclusion, Stage 3 started, where we developed a measure indicating consumer groups. This procedure involved a simple individual comparison procedure between which categories were planned and which were actually purchased. This approach was inspired in a cross-buying measure developed by Kumar, George and Pancras (2008). By comparing how many and which categories an individual bought to how many and which categories he informed when he arrived at the supermarket, we were able to identify a set of eight consumer groups. The first group refer to the Effective Planned Purchase Group, individuals that fully match their purchases, buying only categories planned. Conversely, other groups encompass some form of deviance, in respect to matching categories planned and the amount (more or less) of categories planned. Figure 2 unveils our research methodology, divided into three stages.

Figure 2. Research stages



IV. RESULTS

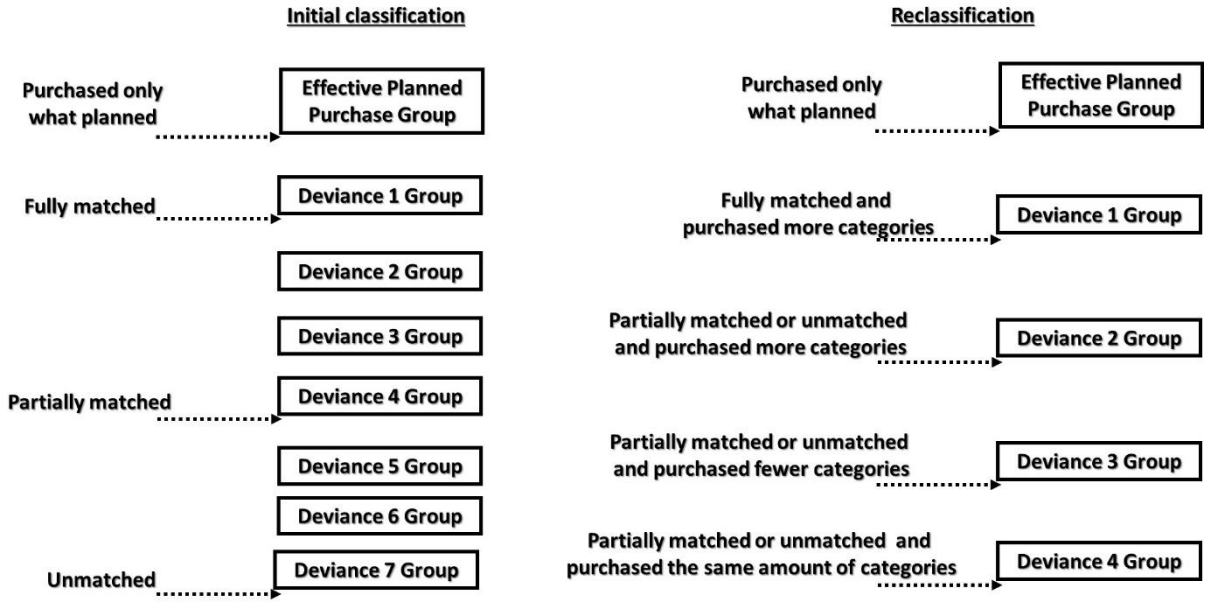
IV.1 Descriptive analysis

Since one of the objectives of our study is to arrange consumer into groups which allude to their buying pattern, the methodological approach employed ensured the organization of individuals into five classes. The Effective Planned Purchase Group (the ones that fully matched and purchased only the categories planned to buy) achieved 13.2% of the incidence rate, a low rate. The 86.8% of the remaining incidence rate belongs to four deviance groups from planned

purchase, which varies according to two dimensions: a) if the individual matched his intention; and b) if the individual bought more or less categories than planned. Altogether, there were seven groups of deviances from the planned purchased.

Deviance 1 Group (fully matched and purchased more categories than planned) achieved 50.3% of the incidence rate and the Deviance 2 Group (partially matched and purchased more categories than planned) encompassed 19.5%. Deviance 3 Group (partially matched and purchased fewer categories than planned) achieved 6.9% while the Deviance 4 Group (partially matched and purchased the same amount of categories than planned) achieved 5.8%. The unmatched deviance groups 5 (unmatched and purchased more categories than planned), 6 (unmatched and purchased fewer categories than planned) and 7 (unmatched and purchased the same amount of categories than planned) were the least frequent: they achieved 3%, 0.8% and 0.3%, respectively. Figure 3 depicts initial classification and methodological procedure to organize individuals into consumer groups.

Figure 3. Methodological procedures to organize individuals into consumer groups



As the unmatched groups (Deviances 5, 6 and 7) exhibited low incidence, they were rearranged into the partially matched groups (Deviances 2, 3 and 4, respectively). For this reason, we modified groups features and descriptions in order to arrive to our final categorization: Deviance 2 Group (partially matched or unmatched and purchased more categories than planned), Deviance 3 Group (partially matched or unmatched and purchased fewer categories than planned) and Deviance 4 Group (partially matched or unmatched and purchased the same amount of categories than planned). Deviance 1 and Effective Planned Purchase groups remained with the original features. Table 1 provides groups definitions along with basic descriptive statistics.

Table 1
Descriptive analysis of consumer groups

Group names	Features	n	Incidence rate (after reclassification)	Average of amount planned (Std. Dev.)	Average of amount bought (Std. Dev.)
Effective Planned Purchase Group	Fully matched and purchased only the categories planned to buy	48	13.2%	1.85 (1.2)	1.85 (1.2)
Deviance 1	Fully matched and purchased more categories than planned	193	50.3%	2.49 (1.9)	6.11 (4.6)
Deviance 2	Partially matched or unmatched and purchased more categories than planned	82	22.5%	5.26 (3.9)	9.64 (6.3)
Deviance 3	Partially matched or unmatched and purchase fewer categories than planned	28	7.7%	5.85 (5.2)	3.5 (3.7)
Deviance 4	Partially matched or unmatched and purchased the same amount of categories than planned	21	6.3%	4.26 (2.3)	4.43 (2.4)
Total		372	100%	3.40 (3.1)	6.04 (5.2)

Table 2 presents measurement approach for variables, along with means and standard deviations of the dataset. Consumers from this supermarket usually bought their products using cash (51.7%), usually on non-promotion days (66.1%) and on weekdays (79.3%). These individuals are usually females (64.1%), mostly with reported income ranging from R$ 1001 to R$ 2000, whose shopping trips are not accompanied (69%) and unplanned, since only 17.1% brought a shopping list and 26.1% conducted a previous price consult. Descriptive statistics for quantitative variables show an average age of 40.7 and a mean value of the purchase of R$ 46.4, a low average ticket.

Table 2
Descriptive analysis of the variables

Variables	Measurement approach	Percentage	Mean (Std. Dev)
Form of payment	Qualitative (3 levels)		
• In cash	51.7		
• Debit card	30.5		
• Credit card	17.8		
Reported income	Qualitative (10 levels)		
- to R$ 412	3		
- from R$ 413 to R$ 1000	9.6		
- from R$ 1001 to R$ 2000	28.7		
- from R$ 2001 to R$ 3000	19.6		
- from R$ 3001 to R$ 4000	9.8		
- from R$ 4001 to R$ 5000	12.1		
- from R$ 5001 to R$ 6000	7.2		
- from R% 6001 to R$ 7000	3.6		
- from R$ 7001 to R$ 8000	1		
- more than R$ 8000	8		
Promotion day at the supermarket	Dummy	33.9	
Purchase during weekend	Dummy	20.7	
Sex (Male)	Dummy	35.9	
Consumer accompanied during shopping trip	Dummy	31	
Shopping list	Dummy	17.1	
Previous price consult	Dummy	26.1	
Age	Quantitative[a]		40.7 (15.8)
Amount planned	Quantitative		3.4 (3.1)
Consumer spending (Total value of the purchase)	Quantitative		46.4 (46.6)

[a] Quantitative variables (age, amount planned and consumer spending) suffered a logarithm transformation before inclusion in the inferential analyses in order to produce a scale free interpretation.

IV.2 Inferential analyses

The results are reported in two subsections. Initially we show the effect of the independent variables on the probability of belonging to the deviances from the Effective Planned Purchase Group with a multinomial logistic regression. In the second subsection we show by means of Analysis of Covariance (ANCOVA), the effect of the deviance groups on the Consumer Spending, controlling some of the variables examined in the research. As a whole, we show the set of variables that influences deviances from the effective purchase

planning and what are the risks of spending more or less money of what it should be spent in accordance to the planned purchase.

IV.2.1 Influences on the probability of belonging to deviance groups

We ran a multinomial logistic regression model to assess influences on the probability of belonging to deviance groups. The reference category for this case is the Effective Planned Purchase Group. The effect is low-moderate of the independent variables on chances of belonging to each group (R^2 Nagelkerke = 35.4%). Nonetheless, the Chi Square Test is significant ($p \leq 0.01$). Table 3 unveils estimates (and standard errors) of the variables for each comparison of deviances groups in relation to the Effective Planned Purchase Group.

Table 3. Effect of the independent variables on the probability of belonging to the deviances groups

Dependent variable[a]	Independent variables	Estimate	Std. Error
Deviance 1	Intercept	0.91***	0.31
	Previous price consult	0.83*	0.48
	Shopping list	-1.02**	0.48
	Consumer accompanied	0.96**	0.46
	Form of payment	0.45*	0.27
	Weekend	-0.97***	0.38
	Log of amount planned	0.43	0.31
Deviance 2	Intercept	-1.24***	0.41
	Previous price consult	0.41	0.55
	Shopping list	-1.16**	0.58
	Consumer accompanied	0.87*	0.52
	Form of payment	0.39	0.30
	Weekend	-1.46***	0.50
	Log of amount planned	2.01***	0.36
Deviance 3	Intercept	-2.78***	0.60
	Previous price consult	0.36	0.70
	Shopping list	-0.54	0.69
	Consumer accompanied	0.78	0.64
	Form of payment	-0.70	0.39
	Weekend	-0.34	0.58
	Log of Amount planned	2.37***	0.45
Deviance 4	Intercept	-2.47***	0.61
	Previous price consult	0.43	0.69
	Shopping list	0.21	0.66
	Consumer accompanied	0.33	0.69
	Form of payment	-0.29	0.42
	Weekend	-0.96	0.68
	Log of amount planned	2.18***	0.47

R^2 Nagelkerke = 35.4%; Chi Square = 144.9 ($p \leq 0.01$)

a. The reference category is: Effective Planned Purchase Group
* $p \leq 0.1$; ** $p \leq 0.05$; ***$p \leq 0.01$

Consumer learning history variables (previous price consult, consumer accompanied during shopping) and form of payment (payment by credit card) had a positive effect on the Deviance 1 Group, while the purchase during the weekend and bringing a shopping list to the store had a negative effect. Therefore, this means that payment by credit card, be accompanied by someone and previously consulting price of the products stimulate consumers to buy more products than planned, even though they fully matched the purchases.

By using the logistic probability formula [$P(X) = 1 / 1 + e^{-(\alpha + \Sigma \beta X)}$], for example, if a consumer previously consults the planned product price before going to the store, brings a shopping list to it, comes to it with the company of someone and pay the purchases by credit card during the weekend, the probability of belonging to the Deviance 1 Group is up to 83.3% in relation to the Effective Planned Group. These results shows an expressive effect of consumer learning history to change in a planned behaviour.

Purchases during the weekend and bringing a shopping list to the store give self-control to the consumer and, also, have a negative effect on the Deviance 2 Group. Conversely, the amount planned had a positive effect on the Deviance 2, Deviance 3 and Deviance 4 Groups. It means that the more products a consumer plans to buy, more he or she partially matched or unmatched their purchases, notwithstanding the amount bought.

Consumer Accompanied while shopping also had a small positive effect on the Deviance 2 Group. Therefore, the consumer accompanied stimulates him or her to buy more products than planned, even though the consumer can match or not the purchases. Applying the example in the logistic probability formula, in relation to the Effective Planned Group, if a consumer raises the amount planned to 1%, the probability of belonging to the Deviance 3 or Deviance 4 Group is 39.89% and 42.80%, respectively. In turn, if a consumer raises the amount planned by 1%, purchases during weekend and brings a shopping list to the store, the probability of belonging to the Deviance 2 Group goes to 27.28%.

IV.2.2 Influences on consumer spending

As we tested whether there some predictors of the deviances from the Effective Planned Purchase Group, in this analysis we are interested in observing one possible implication for these deviances, which is consumer spending. By means of an Analysis of Covariance we tested in which deviances groups consumers have higher spending, controlling other variables, such as: the amount planned, form of payment, consumer accompanied, day of the month and income.

Table 4 shows that the model accounts for 53% of Eta Squared, a good but a moderated impact. The variables do not interact with each other (interactions not shown in Table 4 due to parsimony), which means that the variables, alone, are responsible for the variances accounted of the Consumer Spending. The most impactful variable on Consumer Spending is the Deviances Groups (higher Partial Eta Squared = 27%). The amount planned [$F(1,352) = 120.46$, $p \leq 0.01$], form of payment [$F(1,352) = 24.57$, $p \leq 0.01$], consumer accompanied [$F(1,352) = 9.12$, $p \leq 0.01$], day of the month [$F(1,352) = 6.11$, $p \leq 0.01$] and income [$F(1,352) = 4.88$, $p \leq 0.05$] also have influences on Consumer Spending, though a little bit less important. These results suggest that deviances groups are the main responsible for spending more or less money on the purchases.

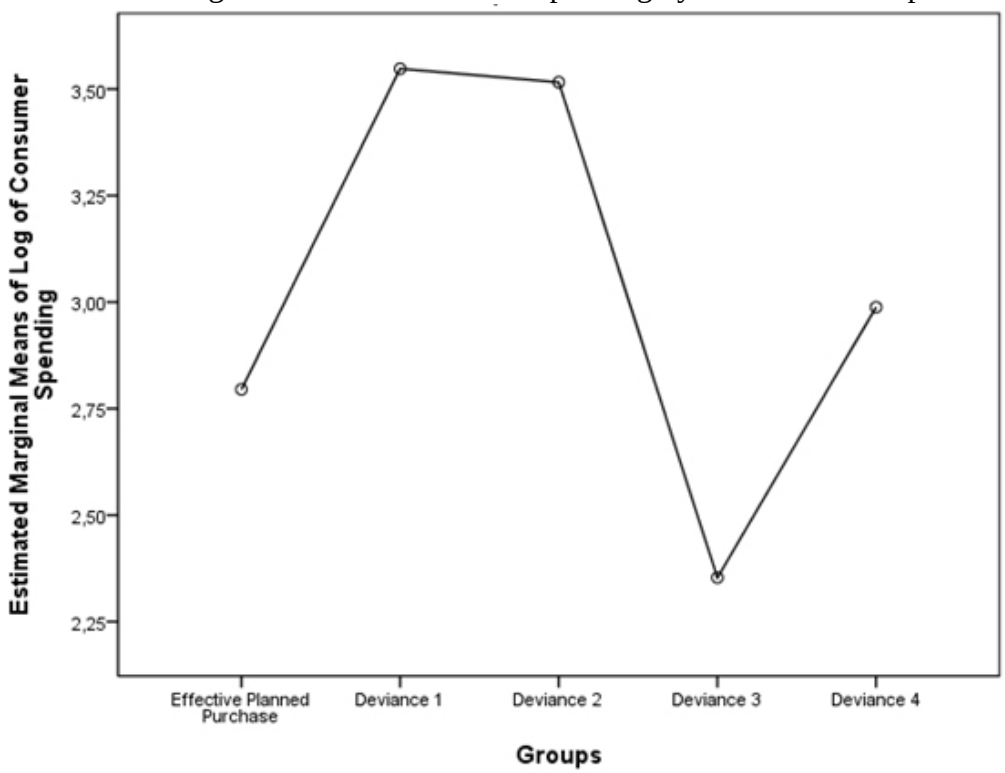
Table 4. Effect of the Groups of Deviances and control variables on Consumer Spending.

Source	Type III Sum of Squares	df	Mean Square	F	Eta Squared
Corrected Model	223.37	9	24.82	35.50***	0.53
Intercept	388.83	1	388.83	681.53***	
Deviances Groups	72.12	4	18.03	31.60***	0.27
Amount planned	68.73	1	68.73	120.46***	0.26
Form of payment	14.02	1	14.02	24.57***	0.07
Consumer accompanied	5.21	1	5.21	9.12***	0.03
Ln Day of the month	3.49	1	3.49	6.11**	0.02
Reported income	2.78	1	2.78	4.88***	0.01
Error	200.82	352	0.57		
Total	4401.57	362			
Corrected Total	424.19	361			

* $p \leq 0.1$; ** $p \leq 0.05$; ***$p \leq 0.01$

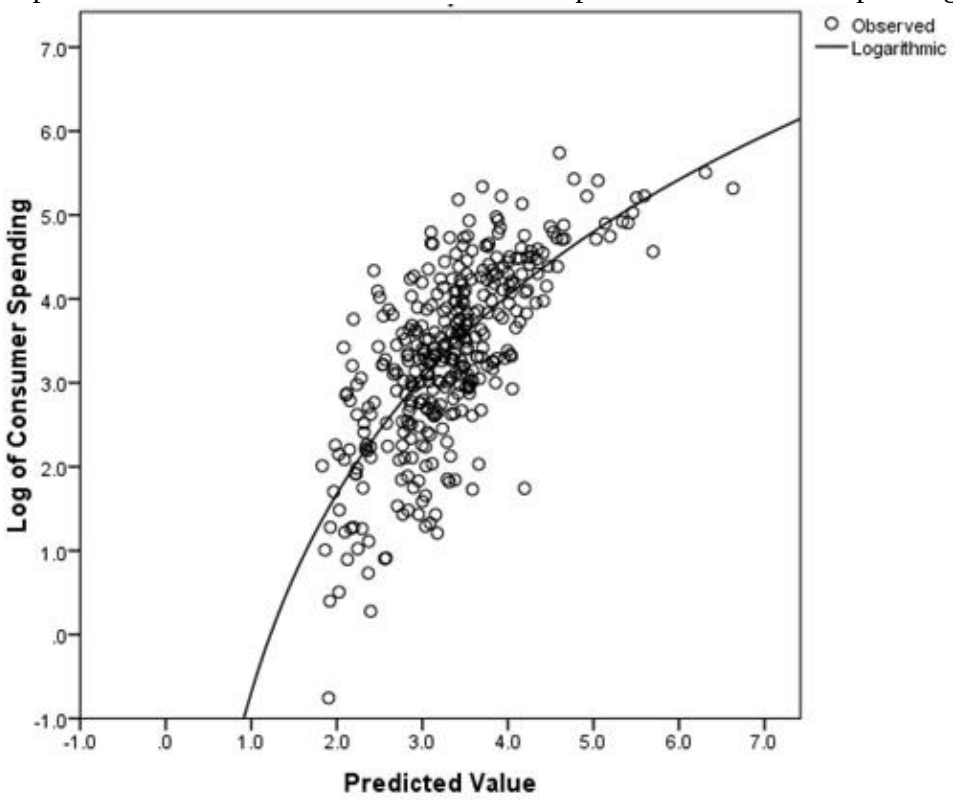
Once the control variables entered as covariates, the relation of each deviance group and consumer spending can be highlighted. Figure 4 shows that Deviance 1 Group (Mean = 3.55; S.E. = 0.1) and Deviance 2 Group (Mean = 3.52; S.E. = 0.1) are significantly ($p \leq 0.01$) higher for Consumer Spending than the Effective Planned Purchase Group (Mean = 2.80; S.E. = 0.1). The Deviance 3 Group (Mean = 2.35; S.E. = 0.2) is significantly ($p \leq 0.01$) lower for Consumer Spending than the Effective Planned Purchase Group (Mean = 2.80; S.E. = 0.1). The Effective Planned Purchase Group and Deviance 4 Group (Mean = 2.99; S.E. = 0.2) have moderate spending and they are not significantly different.

Figure 4. Estimated marginal means of consumer spending by Deviances Groups



As a whole, with a logarithmic format, the impact of the covariates and Groups Deviances Groups on the Consumer Spending is shown in Figure 5. The variables influence moderately the Consumer Spending (R^2 = 53%).

Figure 5. Impact of the covariates and Deviances Groups on the Consumer Spending



V. DISCUSSION AND FURTHER RESEARCH

According to Foxall (2000) behaviour if a function of the person and the environment. This assumption guided the development of a framework, which specifies that consumer behaviour is environmentally determined, but also under the control of an individual learning history. The results of our multinomial model corroborate this premise, as price consults and shopping list can deviate consumers from the Effective Planned Group. This indicates an important effect of a prepurchase component to behaviour.

Supermarkets are defining examples of open settings of behaviour, where control mechanisms from marketers are largely absent. The resulting implication is that behavioural criteria cannot give a complete answer to consumer behaviour and cognitive psychology (in the form or purchase planning) can provide assistance to the interpretation (Foxall, 1992). Considering the effects of the deviances groups on consumer spending and their substantial effect provided by the ANCOVA model, it is possible to formalize the consumer setting effect: in an open routine purchasing environment (a supermarket), consumers exhibit organized deviances that explain behaviour.

Our results highlight the importance of consumer learning history and behaviour setting to explain behaviour. This expand BPM scope, usually concentrated in results generated at the brand level. The consumer situation elements presented by Foxall (1992, 1993) and others can also be related to an individual performance measure in retail, consumer spending. In practical terms, marketing managers involved with retail decisions can interpret these elements as internal and external factors responsible for producing effects on consumer expenditure. Further research should incorporate these elements in different behaviour setting scope defined by Foxall (1992), such as accomplishment, pleasure and accumulation environments.

VI. REFERENCES

Amos, C., Holmes, G. R., & Keneson, W. C. (2014). A meta-analysis of consumer impulse buying. *Journal of Retailing and Consumer Service*s, 21(2), 86-97.

Carroll, C. D., Fuhrer, J. C., & Wilcox, D. W. (1994). Does consumer sentiment forecast household spending? If so, why? *The American Economic Review*, 84(5), 1397-1408.

Carruth, A., & Dickerson, A. (2003). An assymetric error correction model of UK consumer spending. *Applied Economics*, 35(6), 619-630.

Fagerstrøm, A. & Sigurdsson, V. (2016). Experimental analyses of consumer choices. In. G. Foxall (Ed.). *The Routledge companion to consumer behavior analysis.* (pp. 25-39).

Fornell, C., Rust, R. T., & Dekimpe, M. G. (2010). The effect of customer satisfaction on consumer spending growth. *Journal of Marketing Research*, 47(1), 28-35.

Foxall, G. R. (1992). The behavioral perspective model of purchase and consumption: From consumer theory to marketing practice. *Journal of the Academy of Marketing Science*, 20(2), 189-198.

Foxall, G. R. (1993). A behaviourist perspective on purchase and consumption. *European Journal of Marketing*, 27(8), 7-16.7

Foxall, G. R. (1998). Radical behaviorist interpretation: generating and evaluating an account of consumer behavior. *The Behavior Analyst*, 21(2), 321-354.

Foxall, G. R. (2000). The contextual stance in consumer research. *European Journal of Marketing*, 34(7), 768-779.

Foxall, G. R. (2001). Foundations of consumer behaviour analysis. *Marketing Theory*, 1(2), 165-199.

Foxall, G. R. (2005). *Understanding consumer choice*. New York: Palgrave MacMillan.

Foxall, G. R. (2010). Invitation consumer behavior analysis. *Journal of Organizational Behavior Management*, 30(2), 92-109.

Foxall, G.R., & Sigurdsson, V. (2013). Consumer behavior analysis: behavioral economics meets the marketplace. *The Psychological Record*, 63(2), 231-238.

Foxall, G. R. (2015). Operant behavioral economics. *Managerial and Decision Economics*, 37(4-5), 215-223.

Foxall, G. R., & Yani-de-Soriano, M. M. (2005). Situational influences on consumers' attitudes and behavior. *Journal of Business Research*, 58(4), 518-525.

Instituto Brasileiro de Geografia e Estatística (2010). *Brazilian census from 2010*. Retrieved from http://censo2010.ibge.gov.br

Instituto Brasileiro de Geografia e Estatística (2015). *Brazilian population estimation from July 1st, 2015*. Retrieved from http://www.ibge.gov.br/home/estatistica/populacao/estimativa2015/estimativa_tcu.shtm

Kacen, J. J., Hess, J. D., & Walker, D. (2012). Spontaneous selection: The influence of product and retailing factors on consumer impulse purchases. *Journal of Retailing and Consumer Services*, 19(6), 578-588.

Katona, G. (1974). Psychology and consumer economics. *Journal of Consumer Research*, 1, 1-8.

Kumar, V., George, M., & Pancras, J. (2008). Cross-buying in retailing: Drivers and consequences. *Journal of Retailing*, 84(1), 15-27.

Oliveira-Castro, J. M., Cavalcanti, P. R., & Foxall, G. R. (in press). What consumers maximize: Brand choice as a function of utilitarian and informational reinforcement. *Managerial and Decision Economics*.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quase-experimental designs for generalized causal inference*. Boston: Houghton Mifflin Company.

Wang, X. S., Bendle, N. T., Mai, F., & Cotte, J. The Journal of Consumer Research at 40: A historical analysis. *Journal of Consumer Research*, 42(1), 5-18.