

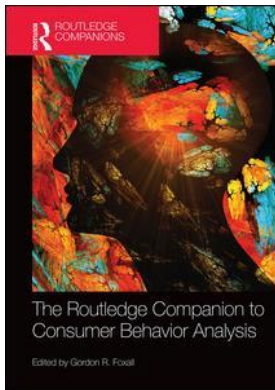
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On: 29 Mar 2023

Access details: *subscription number*

Publisher: *Routledge*

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The Routledge Companion to Consumer Behavior Analysis

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The Behavioral Perspective Model in the Latin-American context

Publication details

<https://test.routledgehandbooks.com/doi/10.4324/9781315850696.ch13>

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Published online on: 08 Sep 2015

How to cite :- Marithza Sandoval-Escobar, Iván Felipe Medina. 08 Sep 2015, *The Behavioral Perspective Model in the Latin-American context from: The Routledge Companion to Consumer Behavior Analysis* Routledge

Accessed on: 29 Mar 2023

<https://test.routledgehandbooks.com/doi/10.4324/9781315850696.ch13>

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The Behavioral Perspective Model in the Latin-American context

Empirical and conceptual contributions

Marithza Sandoval-Escobar and Iván Felipe Medina

Introduction

The Behavioral Perspective Model (BPM) represents an approach to integrate the principles of behavior analysis to consumer research (Foxall, 1990, 1997), where the operant contingency model is used to explain the determinants of purchase and consumption (Sandoval et al., 2010). The BPM suggests that consumer behavior is a function of the interaction of the individual and the context of purchase and consumption; the latter is determined by the history of individual learning in each of these purchase contexts, in connection with a product category, and the consequences that this behavior produces in the current context (Foxall, 2007).

Many phenomena related to purchase and consumption can be addressed through the approach provided by BPM, including brand loyalty, purchasing patterns in the contexts of developing economies and the peculiarities of market scenarios in these economies and cultures. Other phenomena can also be investigated, such as inhibition or replacement of purchase, i.e. the circumstances that promote saving money, protecting natural resources with the purchase of green brands, or the involvement of consumers in behaviors such as donations, activism and other pro-ecological behaviors (Foxall, 1995).

These phenomena have been traditionally addressed by consumer psychology from a pre-eminently cognitivist view of the decision process, where intention is assumed to be a fundamental determinant of the observed behavior – either purchase or consumption, social interaction or environmental conservation. From this perspective, individuals construct sets of brands which are accepted, neutral or rejected, from a set of decision rules that define the type of attributes and combinations taken into account when choosing one or several of them. Said sets and their attributes are the result of exposure to the media and other sources of influence controlled by marketing firms, but once they are constituted, they determine the purchase of products and services on their own.

Under the central assumption of a rational decision, consumers choose different purchase options based on their preferences and what each brand represents. Knowing purchase intent from this perspective is equivalent to predicting the occurrence of the actual behavior, but

as Foxall (2001, 2007) states, evidence shows a low correlation between the verbal expression of purchase intent and the actual transaction in commercial venues. Both applications of BPM analysis of purchasing patterns and their extensions for the study of various phenomena of consumption have been derived from a line of multi-year research developed in countries with different economic structures to Latin America and characterized by greater distribution of wealth, more extended middle classes and decreasing poverty indicators (Ehrenberg et al., 1990; Foxall, 1999, 2004, 2007; Oliveira-Castro et al., 2005, 2006; Uncles et al., 1995; Foxall et al., 2007).

In the case of pro-environmental behavior, attitudinal models are predominant in the field in Latin America. Medina and Páramo (2014) state in their review of perspectives and interventions in environmental education that more than half of the empirical work in the field of promoting pro-environmental behavior is oriented from the attitudinal perspective. In this regard, Gifford (2014) notes that the overall study of attitudes has been the central construct of environmental psychology, although its potency as a predictor continues to be in discussion. The BPM is a robust alternative that can be more effective as an approach to pro-environmental behavior in context interventions.

Latin America overview

The economic structure in the Latin-American region is characterized by increased poverty, extended lower classes and greater concentrations of wealth, which cause the distribution of products and services to have significant differences with regard to developed countries. Studies show that the percentage of people who shop in large supermarkets (hypermarkets) is lower and this pattern of supermarket use occurs mainly in middle and upper socioeconomic strata. According to the company Kantar Worldpanel (2013), consumer panels in Latin America and particularly in Colombia show that people distribute their shopping in the modern channel (hypermarkets, supermarkets and warehouses with a percentage between 47% and 60% of sales in Latin America), in the traditional channel (shops and corner stores with 42% of households buying in this channel throughout Latin America), in catalog purchases and other alternative channels such as drug stores, butcher shops and specialty stores depending on the product category or service. The lower strata buy products needed in smaller quantities and more frequently, concentrating their purchases in the so-called “traditional channel” in small shops near the residence of the consumer and where they can find basic household goods (food products, grooming products, products for washing clothes, sweets, etc.). Big brands have focused their marketing strategies on this channel in Latin America since about 42% of households keep shopping in the traditional channel despite completing transactions in the other channels as well (Nielsen Homescan, 2014). This percentage is even higher in Colombia, since 53% of households go to the neighborhood store two to three times a week (Kantar Worldpanel, 2013). The pattern of purchasing supplies daily is even more pronounced in the lower strata (about 40% of the population of Latin America), since family income can be produced by the informal day-based wages and trade. The traditional small channel has available small, unit and personal sizes of many foods and toiletries, but also offers the possibility of direct credit from the grocer. Prestigious international brands also distribute their products through that channel and expend a lot of effort to maintain good relations with the grocer, to the extent that it is he who determines the choice set consumers have.

Both academic and professional research groups of consumer behavior in the region have taken a close look at consumer psychology and models derived from the traditional economy to do research on purchases (see examples in Deloitte, 2013; García-Landa & Montero, 2013;

Rangel et al., 2013; Sergueyevna, 2013). In the particular case of brand substitution, studies have been carried out from an economic and marketing perspective using large aggregates from which conclusions can be drawn with regard to preferences and consumer trends (e.g. sectorial and macroeconomic studies conducted by CEPAL, 2014).

In the case of individual patterns, the model which underlies these studies is associated with significant changes which have taken place in the neoclassical economic vision, especially with regard to the extension in time of choice behavior and the relationship between the latter and demand, but with an undeniable closeness to internal constructs which cause consumer behavior. This standard model is a theory of rational choice in which individuals collect information on alternatives, using the rules of probability to transform this information into perceived attributes and then develop a cognitive process that can be represented as an array of attribute levels levied at a rate of one-dimensional steady income which is then maximized. Psychological factors which are introduced into decision-making concepts include processes of perception, preference and process (Sandoval et al., 2006).

For this reason, most studies exclusively use surveys and interviews in which the consumer responds to questions about their behavior pattern and its determinants. However, many questions may have false or inaccurate answers, because they refer to aspects which are ignored by consumers; for instance, loyalty to brands, reasons for the purchase, consistency of their intention to purchase, or their attitude towards certain products, pro-ecological behaviors or environmental issues.

Given the conflicting evidence regarding the cognitivist decision model and the need to answer questions related to the explanation of the behavior of Latin-American consumers, the priority is to change the methodological and conceptual approach. The BPM and working with consumer panels and simulations of purchase contexts are appropriate to achieve this goal. For example, the panel methodology allows longitudinal analysis of buying patterns and analysis of the processes of brand choice with regard to changes in prices in the same product category over time, which can empirically demonstrate elasticity in purchasing behavior (Crouch & Housden, 2003; Foxall, 2007; Oliveira-Castro et al., 2006). However, as Sandoval et al. (2006) claim, it is not enough to prove the existence of buying patterns or other consumer phenomena; the analysis of the psychological processes related to the observed pattern, beyond the simple description of the stages of decision or purchase intent, is also required. The behavior analytic view assumes that consumer behavior includes the activities of buyers before, during and after purchase and consumption (Foxall, 1998, 2001), and the design of scenarios and consequences of alternative responses to make alternative consumption responses likelier for the promotion of eco-friendly shopping (Foxall, 1995; Foxall et al., 2006).

Although it has been established that every country in Latin America has trends which vary hand in hand with social, political and cultural conditions, few studies actually aim at identifying patterns of purchasing behavior and the specific variables that determine these patterns. The explanations for this lack of information are related to the fact that in Latin America most research on buying patterns has been developed by different market research agencies for multinational brands, and to the low number of university researchers in the consumer behavior field, and the even fewer groups which link consumer psychology work with eco-friendly consumption.

Behavioral Perspective Model: studies in Latin America

Five different studies based on the BPM have been conducted in Brazil; this demonstrates the applicability of the model for understanding patterns of behavior in cultural contexts different

from those that created them. These studies include Oliveira-Castro et al. (2005), who investigated the dynamics of buying patterns in 80 consumers for 16 weeks in eight product categories. Also, the study carried out by Phol and Oliveira-Castro (2008) with a panel of 1,477 consumers shows that there is a relationship between the informational benefit of brands and the duration of the search during the purchasing process, thus allowing the development of the concept of brand force from the measured duration of the search. Likewise, the study by Veiga Neto and Melo (2013) with children aged 10 to 12 shows the importance of utilitarian benefits (organoleptic properties) of food for children in determining their choice, as opposed to informational-type factors. In addition to the above, studies by Oliveira-Castro et al. (2008) demonstrate the applicability of BPM to analyze brand equity of brands, from the balance the utilitarian and informational consequences have within the product category. From a behavioral perspective, brand equity is conceptualized from brand awareness and quality, thereby emphasizing the role of situational variables to generate MKQ (Market, Knowledge, Quality).

Only more recently did Barreiros et al. (2011) compare the vision of consumer choice with the study of effective choice. The authors investigated whether consumers buy the amount they had planned, and whether those purchases depend on levels of utilitarian and informational benefits of brands, using a questionnaire survey of 1,010 consumers in a supermarket. When these shoppers verified their purchases upon leaving the mart, they were found to have purchased more units of brands with low benefits, when they planned to buy quantities above the average of other consumers. Also, Conque Seco and Oliveira-Castro (2011) have determined the effects of the purchase environment on consumer behavior from the perspective of scenarios. For this, the background music of two stores was manipulated and better effects were found on purchasing and customer satisfaction in the condition of better quality, thus demonstrating the motivational influence of the behavior setting and its characteristics.

In addition to the small number of research projects based on BPM that have taken place in the region, different points need further comparison and analysis for the context of Latin America. First, BPM has been applied to the description and explanation of purchasing patterns of consumer panels in countries where the purchases occur mainly in supermarkets in large areas and not in the traditional channels of purchase of the Latin-American region which are characterized by highly closed settings resulting in narrower choice sets, and by a majority of consumers belonging in the lower strata and minimum-income variables. Moreover, it is important to determine whether the predictions of intra- and inter-elasticity are met in those scenarios where the choice set is determined by the shopkeeper who negotiates with distributors the brands which bring greater profitability for their business, but which completely limit the choice of consumers.

To answer these questions, Sandoval et al. (2010) investigated the relationship between changes in levels of both utilitarian and informational reinforcement and measures of elasticity of intra- and inter-brand demand in seven categories of consumer products in 41 families from the lower strata of the city of Bogotá (Colombia). To avoid defining the level of informational reinforcement from the sales of brands, a new component was included to allow for a more complete approach regarding factors related to possible changes in the levels of mainly informational reinforcement, including a report of the participants with regard to the changes perceived in brand communication that could change their symbolic value.

Moreover, logs were kept of purchase venues, purchase frequency, brands purchased, purchase price and the conditions thereof (regular price or promotion), inter alia. Finally, the analysis of data from the household panel aimed to identify the levels of utility and informational reinforcement for brands within the categories studied. The data to define consumer choice sets available were derived from 120 retail establishments, broken down as follows: 40 supermarkets

(hypermarkets), 40 convenience stores and 40 neighborhood stores in 13 geographic areas of the city. The shops were chosen considering their proximity to the participating families, and their purchase frequency. One hundred and twenty points of sale were visited to obtain data corresponding to brands available. Twelve visits were carried out on the same number of points of sale every 2 weeks, over a total of 5 months (20 weeks). At each visit to each household, stock in cupboards was verified and a questionnaire was applied which aimed to monitor promotions, advertising and other marketing efforts made by points of sale and those reported by consumers.

The study results are consistent with the findings of the panels in developed countries. In particular, there was evidence of the effect identified by Ehrenberg et al. (2004) called double jeopardy – which consists of a progressive and strong decline in the share and penetration for the leading brand “A” in contrast to brand “H”. Similarly, the indicator of brand loyalty is similar to that reported by other authors, thereby finding a multibrand pattern for six product categories studied, and the likelihood that the percentage of loyal customers exceeds 20% of its consumer base is very low.

Analysis of price elasticity in all product categories demonstrates the existence of a covariation between the quantities purchased and the unit price in each of the categories studied (see Figure 13.1). It was found that demand is price inelastic, e.g. the quantities purchased decrease in a less than proportionate fashion compared to the increase in prices, as previously reported by Oliveira-Castro et al. (2006). Regarding inter-consumer price elasticity of demand, the slopes of the functions demonstrate the existence of inter-consumer demand in each of the categories studied, with the exception of soap. The analysis of inter-consumer elasticity in the households section of the study shows that it was negative in every home, and therefore there is elasticity of inter-consumer price.

With regard to the level of utilitarian and informational reinforcement, factor analysis showed that there are two factors within the analyzed matrix which account for 53.4% of the variance explained. The items that show a high load on Factor 1 correspond to brand assessment behaviors (e.g. “It’s a good quality product”). In Factor 2, items correspond to the elements of situational assessment (e.g. “Someone recommended it to me”). Inter-elasticity of the brand assessment behavior and inter-elasticity of the elements of situational assessment were analyzed using the equation developed by Oliveira-Castro et al. (2005). Intra-elasticity coefficients were significant and negative for all categories; in addition, greater situational assessment (albeit negative) intra-brand elasticity was found in four of the nine categories (detergent, dish detergent, hand soap and fabric softener). Moreover, intra-brand elasticity was higher than elasticities of brand assessment and situational assessment in three of the nine product categories (coffee, floor cleaners and chocolate).

Multiple regression analysis was also applied, wherein the criterion variable was the amount of product purchased, including predicting variables of unit price, socioeconomic status, monthly household income and the choice set considered to establish possible relationships with the amount acquired in each product category. The coefficients for the unit price were all significant and negative and ranged from -0.56 to -1.15 . The coefficients for the choice set were all significant and positive and ranged from 0.51 to 2.26 .

Furthermore, an analysis of simple linear regression was conducted to determine the level of maximum explanation for each predicting variable regarding the quantities purchased. It was found that as the number of brands available increases, the quantities purchased also increase. It was also found that with increasing socioeconomic status, the quantities purchased by consumers increase. Finally, each of the variables analyzed individually significantly contributes to explaining the quantities purchased, by highlighting in particular the contribution generated by the choice set within the estimated model. It is important to clarify that price elasticity of demand

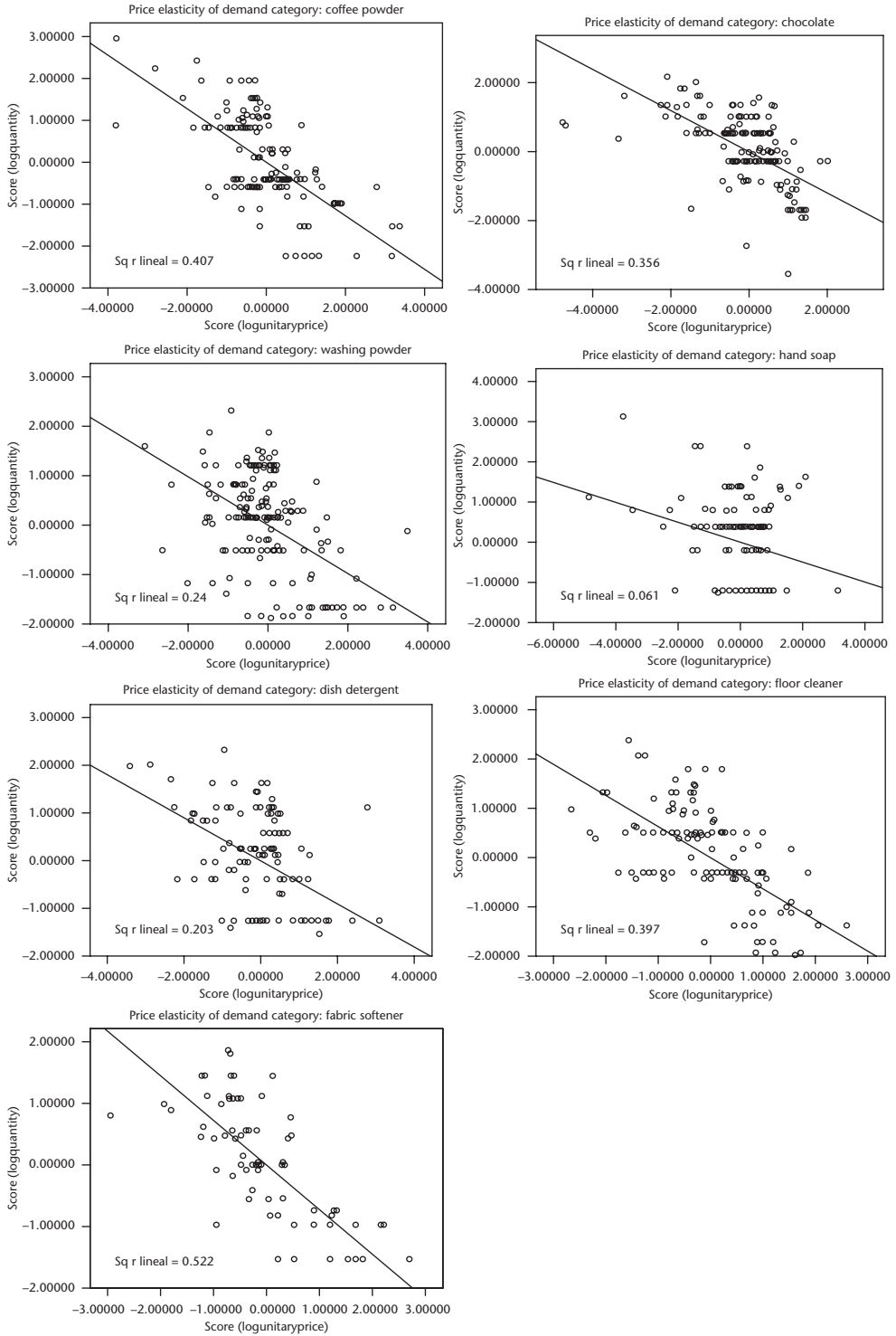


Figure 13.1 Elasticity of price of global demand (taken from Sandoval et al., 2010)

was found, with a decreasing linear function as unit prices of the brands increase; however, demand tends to be more resilient to the most expensive products in the basket, including fabric softener, floor cleaners and instant coffee. This effect was seen in almost every home for the seven categories of study.

The notion that consumers collectively reduce the quantities purchased as prices increase could be interpreted in a better way by including in the analysis other socio-demographic variables such as income level or social class, which might indicate the type of consumer (e.g., low, middle or upper class) more sensitive to increases in commodity prices (Sandoval et al., 2010).

Factor analysis reflected the existence of two factors from the verbal response of participants to items designed for evaluation of the brand, or to account for the elements of situational assessment. The first factor was very directly associated with more tangible and functional consequences arising from the use of the brand acquired. It was found that the second factor grouped items as “it was on sale”, “someone recommended it to me” and “I was looking for variety”. What these statements have in common is the fact that they refer to conditions or situations where the background environment plays an important role in consumer choice behavior, like seeking variety, which would be manifested in the behavior of exploration and comparison of brands at the point of sale by the customer. This allows researchers to identify this factor as “elements of situational assessment”, which are covered by BPM as social and linguistic elements affecting consumer behavior. Functional analysis was conducted to establish the functional relationship which could exist between these two factors, together with unit price and intra- and inter-brand elasticity. The results show that the two factors proposed, e.g. brand assessment and situational assessment, had coefficients with significant elasticity in four and five product categories, respectively.

The study designed specific measures to assess the size of the choice set and its variations, which sought to reflect as closely as possible the number of brands available at the point of sale at the time in which the consumer performed the purchase. It is assumed that a smaller number of brands available is associated with a more closed scenario, and a scenario where the number of brands is higher would be regarded as an open scenario. The results show that consumers reduce the amount purchased when the price of brands increases. The most interesting finding is related to the coefficients obtained for the choice set. All results were found to be significant and positive, which leads to the conclusion that as the number of brands available at point of sale increases, the quantity of the product purchased also increases. When testing the level of predictability of the choice set individually, a range of explanation of variance was found ranging from .05 to .34 of the quantities purchased, thus representing a significant contribution to the interpretation of the purchase patterns observed.

These results together indicate that consumers would probably acquire more quantities of product in environments in which they find a larger number of brands available (open economy), since it is likely that in the latter one or more brands appear at that time and provide an acceptable level of reinforcement at a suitable price. In an environment where the number of brands is reduced (closed economy), the probability of finding one or more brands with more attractive prices should also be reduced. In these cases the consumer may be forced to buy a brand that, although perhaps not the most advantageous in terms of price-ratio reinforcement received, is the only one available at the time or the one with the most acceptable price compared to the few alternatives available.

Behavioral Perspective Model and environmental behavior

Other panel studies that have taken place in Colombia have focused on the study of so-called pro-environmental or pro-ecological consumption (Agudelo & Barreto, 2014; Barreto &

Sandoval, 2013; Garzón et al., 2014). Eco-friendly consumption in particular, and pro-environmental behavior in general, are increasingly important in the global social and economic agenda (Sandoval, 2012), and pose a challenge to the design of behavioral modification strategies given the information about the consequences of inaction on the environment and the number of actors involved in its promotion, maintenance, dissemination and regulation (Sandoval, 2012).

In the case of the Behavioral Perspective Model, its extension to pro-environmental behavior focuses primarily on the analysis of environmental factors to which non-ecological consumer behavior relates, and secondly in environmental conditions that are critical for maintaining pro-environmental behavior (Foxall, 1995; Foxall et al., 2006). The consequences that maintain ecological behavior cannot be differentiated in terms of sources, those arising from the use/consumption of goods and services and those derived from the social groups to which individuals belong. Therefore, an analysis of any non-ecological behavior undertaken to modify the behavior to a more ecological one must first analyze the consequences of which behavior is a function and promote changes accordingly. Thus, behaviors such as using private transport are maintained both for utilitarian aspects (comfort, door-to-door travel) and social aspects (prestige in social groups). Given this scenario, promoting the use of public transportation should emphasize utilitarian aspects (comfortable, agile and fast services) and social aspects (exemplary contingencies on the use of public transport services) (Foxall et al., 2006).

The behavior of consumption and overconsumption inevitably results in reducing the resources required for their production, thus jeopardizing the sustainability of the commercial practice in the future, since consumption of resources can take place faster than the ability of the planetary system to recover them. Two aspects stand out in theory with regard to the comprehension of non-environmental behavior: the immediacy of the consequences and the individual-consequence relationship. Foxall (1995) highlights how the consequences that reinforce purchasing behavior and consumption are usually immediate, as opposed to those consumer patterns aimed at lower consumption of resources, whose consequences take more time to become apparent.

Moreover, the activities that affect the environment are not generated by the behavior of a single consumer acting alone, but occur as a result of the aggregate behavior of millions of consumers, in such a way that the experienced consequences occur as a result of the individual's own behavior but changing the behavior of that, or any other, single individual will not affect the resulting state of things. This change will only occur as aggregate, and with long delays related to the recovery characteristics of the planetary system, thus implying changes in other human systems like the regulation of production, *inter alia* (for a review, see Sandoval, 2012).

This type of analysis places non-ecological behavior as a behavior of local or immediate maximization of available consequences (utilitarian and informational reinforcers). In this context, long-term aversive consequences as well as reinforcing consequences of greater magnitude – also available in the long term – affect behavior, and thus descriptively affect individuals' choice for non-ecological behavior alternatives; this is considered an impulsive response (Logue, 1995).

Also, Logue (1995) stresses that the label “impulsive” does not imply a pejorative reference to the consumer's behavior; actually, sensitivity to the immediacy of the reinforcing consequences is critical to ensure the survival of the species. Along the above-mentioned lines of thought, the case of the human species would not be exceptional.

Foxall (1995) and a subsequent paper by Foxall et al. (2006) suggest that an analysis of the non-ecological behavior should then consider: (a) the specific contextual conditions that maintain no ecological behavior, such as the behavioral configuration of a scenario, the discriminant function of the same when it comes to identifying the reinforcing consequences – whether informational or utilitarian; (b) the pattern of delivery of the consequences, to allow the

Table 13.1 Factorial design of the research conducted by Barreto and Sandoval (2013)

Socioeconomic strata (NSE)	Environmental program			Total
	Control group	Informational design	Informational design with environmental design	
NSE 2	10*	10	10	30
NSE 3	10	10	10	30
NSE 4	10	10	10	30
NSE 5	10	10	10	30
Total	40	40	40	120

*The unit corresponds to the number of families per condition

Source: Agudelo and Barreto (2014)

implementation of forms of consequences that compete with the patterns of consequences of not delivering environmental performance; (c) focusing on the role of non-utilitarian reinforcers of environmental behavior – since their role is more critical than the informational reinforcers, and therefore an environmental intervention based solely on information aspects would be less effective; (d) successful interventions in favor of pro-ecological behavior involve modifications of behavioral aspects in the scenario, for example the amplitude of the stage; and (e) the relationship between antecedent stimuli and consequences of behavior works best in the presence of specific rules that indicate the relationship between the two.

According to these principles, Agudelo and Barreto (2014) evaluated the effectiveness of two types of intervention programs on the consumption of green brands for the categories of personal care and pantry food; strategies focused on providing information to consumers and fostering the consumption of green brands, feedback behavior and environmental design that promote pro-environmental behavior. For this purpose, they selected the data in the macro study conducted by Barreto and Sandoval (2013); the latter studied, by means of a panel with 120 families of socioeconomic strata 2, 3, 4 and 5 over 32 weeks, the effect of two programs for promoting pro-environmental behavior, with three levels (control, informational design and informational design with environmental design). A design with consumer panel was used, and 3×4 factorial arrangement was operated as shown in Table 13.1.

The results selected by Agudelo and Barreto (2014) reveal that the environmental design strategy was more effective than the informational design strategy in the categories of personal care and pantry food; the socioeconomic stratus that was most sensitive to the intervention was 2, and in this socioeconomic stratus there was an increase in the average consumption of green brands after treatment. Although there was an increase in the consumption of green brands on the two interventions (information only and informational design with environmental design), the use of environmental design proved to be more effective. These findings support the tenets of BPM with regard to the promotion of pro-ecological behavior thus: (1) the importance of modifying the behavioral scenario for making the desired environmental behavior likelier, and (2) the specific relationship established by the rules between context or antecedent stimuli, and the timely reinforcing responses, thus making known the consequences of behavior that are present in the short term and which were given to the panel through feedback on the purchasing behavior.

In an analysis of other categories of consumption by the above-mentioned study panel, Garzón et al. (2014) evaluated the behavior of the intention stated by the participants to consume or not to consume transgenic foods or green food brands and the actual consumption of

these products in the period of the study. This category is critical in terms of previous findings in panel studies, where the highest sensitivity for switching between the different alternatives by consumers is related to, first, the price at the time of purchase as stated by Foxall et al. (2006), second, with utilitarian reinforcers, and, third, with informational reinforcers. The category of consumption of green brands in the case of food is particularly difficult to promote as a functional class, as these are purchasing alternatives with double jeopardy, they have a low market share, they are poorly bought, they have a high price, and dissemination of their consequences is less than dissemination of the consequences for their contenders.

The findings of this category of consumption are consistent with the available evidence; chiefly price sensitivity on the part of consumers, and therefore the weakness of interventions based primarily on the delivery of information – whether in the form of rules linking the context with the consequences or behavioral feedback (Foxall, 1995; Foxall et al., 2006). Moreover, the weakness of the theoretical construct of intent to purchase in predicting the actual purchasing behavior is also noteworthy.

To summarize, the findings of the studies reviewed, where consumption was analyzed in traditional channels for low socioeconomic strata, and pro-ecological consumption at all socioeconomic strata, allow us to draw the following conclusions:

1. The findings of BPM are consistent with data from other countries in the analysis of intra-consumer elasticity, inter-consumer elasticity, intra-brand elasticity and inter-brand elasticity.
2. Assessment of consumer reports indicates two major sources of explanation of consumption aspects; aspects related to the situation of choice and aspects related to attributes of brands. These reports are consistent with informational aspects and aspects of situations of consumption covered by BPM.
3. The environmental design with direct feedback on consumption practices is effective for changing consumption practices towards green brands on two categories of consumption.
4. Environmental design with feedback and information strategies is not enough to foster changes in consumption patterns in consumption categories where price is the most critical factor.
5. The behavior intention report in the case of change in consumption towards eco-friendly consumption alternatives turns out to be a measure of little predictive power in adopting this pattern of behavior.

Reflections on BPM from the regional research standpoint

The BPM is no stranger to the epistemological discussions which characterize psychology as a discipline and behavior analysis as a particular way of approaching the scientific practice of behavioral science. In this regard, the monographic volume of the *Behavior and Philosophy Journal* about the role of intentionality in explaining the behavior and the article about intentionality and BPM are examples of this.

Machado et al. (2000) argue that scientific knowledge is advanced by three kinds of research. To illustrate their interaction they use the metaphor of a triangle called the *epistemic triangle*. The epistemic triangle consists of three vertices which are the types of research/actions undertaken by scientists.

In one vertex lies research about facts, such as cumulative records of the time of consumption of products in a particular business category within a group of families, or a consumer's

choice behavior. Another vertex contains theoretical investigations, the attempt of theorizing an explanation of the factual findings of research, such as the attempts of explanation of variability in the consumption of products under observation. Finally, the third vertex includes conceptual research; i.e. research on theories, their scope, their intelligibility and sensitive domains (Machado et al., 2000).

Theoretical systems are not purely empirical statements; while the findings of the panel studies are quintessential to show the usefulness of the BPM, the latter as a theoretical system is in turn composed of conceptual statements which not only point out specific aspects in the field of events, but also allow researchers to perform conceptual classification and organization of the phenomena recorded (Harzem & Miles, 1978).

Based on this context, the work of Medina Arboleda and Sandoval-Escobar (2011) aimed at a conceptual review of the BPM. To do so, the aforementioned authors identified the conceptual categories and changes in these conceptual categories over time. They then conducted a review of the categories identified in the theoretical review, and finally suggested several changes in the conceptual categories of the BPM. The changes are intended to contribute to the consolidation of a model to analyze economic exchange from a set of assumptions and forecasts consistent with behavioral economics on the one hand, and behavior analysis on the other.

To foster unity of the names and categories of the BPM, a review was conducted of articles written from 1974 to 2011 in which conceptual categories of BPM are presented as well as the different definitions presented in each item thereof. The body of theoretical analysis was composed of 10 articles; Table 13.2 presents said summary of categories and the frequency of occurrence thereof in said articles.

As expected in a model which includes references for over 20 years, the BPM has changed the conceptual categories it presents, as well as their definition; Table 13.3 presents the changes identified in this model.

The work of conceptual revision allows several suggestions to be made with regard to the conceptual management model when it comes to the academic tradition it belongs to, as well as a series of recommendations for researchers who want to carry out their research under this perspective (Medina & Sandoval, 2011).

When it comes to purchasing behavior, the suggestion is for researchers to limit the behaviors analyzed under the perspective of consumer psychology to those in which an economic exchange occurs. This observation takes place in terms of the initial scope of the model; albeit

Table 13.2 Conceptual categories most frequently addressed in BPM articles

<i>Conceptual categories</i>	<i>Frequency</i>
Purchasing behavior	9/10
Behavioral context or scenario	9/10
Informational reinforcement	9/10
Utilitarian reinforcement	8/10
Aversive consequences	3/10
Hedonic reinforcement	1/10
Informational consequences	1/10
Utilitarian consequences	1/10
History of reinforcement	1/10
Aversive consequences	3/10

Source: Medina and Sandoval (2011)

Table 13.3 Conceptual variations in the BPM model (1992–2007)

<i>Source</i>	<i>Categories presented</i>	<i>Variations</i>
Foxall (1992)	Purchasing behavior Behavioral context Informational reinforcement Hedonic reinforcement	
Foxall (1997)	Purchasing behavior	Elimination of the hedonic reinforcement category
	Context behavior Utilitarian reinforcement Informational reinforcement	
Foxall (1998)	Purchasing behavior Behavioral context	Utilitarian reinforcement as use value Inclusion of aversive consequences such as transaction costs
	Informational reinforcement Utilitarian reinforcement Aversive consequences	
Greenley and Foxall (2000)	Purchasing behavior	The category of aversive consequences is maintained
	Context behavior Informational reinforcement Utilitarian reinforcement Aversive consequences	The term “reinforcement” is tied to profits
Foxall et al. (2004)	Purchasing behavior	Elimination of the category of aversive consequences
	Context behavior Informational reinforcement Utilitarian reinforcement	
Foxall et al. (2005)	Purchasing behavior	Elimination of the category of aversive consequences
	Context behavior	Informational reinforcement as feedback on utilitarian benefits
	Informational reinforcement Utilitarian reinforcement	
Foxall, et al. (2006)	Context behavior Informational consequences	Inclusion of the category of consequences Elimination of informational reinforcement and utility
	Utilitarian consequences	
Yani-de-Soriano and Foxall (2006)	Purchasing behavior Informational reinforcement Utilitarian reinforcement	Consequences categories eliminated Aversive consequences category eliminated
Foxall et al. (2007a)	Purchasing behavior Context behavior Learning history	Reincorporation of the categories of utilitarian and informational reinforcement Aversive consequences such as transaction costs
	Informational reinforcement	

Foxall (2007a)	Utilitarian reinforcement	Categories of informational punishment and utilitarian punishment are presented in the graph, not the article
	Aversive consequences	
	Scenario behavior	Elimination of informational punishment from the graph
	Learning history	
	Informational reinforcement	Presentation of aversive consequences in the graph, but lack of definition in the article
	Utilitarian reinforcement	

Source: Medina and Sandoval (2011)

as a model of choice it can be applied to different contexts, it is crucial to emphasize that operant behavior implies BPM analysis as a necessary condition – at least for Western economic systems – the acquisition of goods or payment of a stipulated price for the same service. It is also important to point this out as panel studies and exercises to achieve comparability between the matching laws from laboratory studies on the analysis of demand take price as a counterpart to the response (Foxall, 2007).

As regards the consequences, albeit the article by Foxall et al. (2006) uses the denomination of consequences as a noun (reinforcers and punishers) so that in both cases a difference is made between informational consequences and utilitarian consequences, this description is not predominant in the model. Indeed, recent publications by Foxall (2011) use the terms “reinforcement” and “punishment”. These names are used in the tradition of learning psychology, usually with an objective description of the process (reinforcing behavior), i.e. on the outcome of the application of consequences, not like the consequences per se. To make this analytical distinction, Medina and Sandoval (2011) propose maintaining the denomination by consequences – typical of a synchronic analysis – and using the denominations reinforcement and punishment whenever the object of analysis is diachronic in nature.

It is also important to note that the notion of learning history as a factor in graphical presentations of the model is related to consumer behavior, but not the situation of consumption. This type of presentation when training researchers in the field promotes learning history as being linked to the memory of the purchasing process by the consumer. In this regard, it is worth thinking about a review that places learning history as an update of psychological functions of the context (excitatory and inhibitory psychological functions fostered by experience with the situation), rather than a factor that is conceptually and graphically differentiated from the situation (Medina and Sandoval, 2011).

With the suggestions above, the model is expected to gain accuracy (specific operant behavior), differentiating it from the type of behavior analysis according to time, allowing us to identify when the study is a synchronic interaction or a process which is diachronic in nature, and finally to avoid confusion regarding the ontological status of learning history, thus causing it to be analyzed as a present psychological function and not as an internal construct for the retrieval of information.

Finally, and from the evidence presented, the BPM has strong support, at least in the case of Colombia. This adds validity to its methodological and conceptual framework as an alternative analysis for consumer behavior in economic and social conditions which are dissimilar to those where it was developed, allowing researchers to approach the phenomena of purchase, saving

and eco-friendly consumption from a monistic perspective, focusing on behavior, and with ample empirical support.

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