The behavioral economics of consumer brand choice: patterns of reinforcement and utility maximization

Gordon R. Foxall a,∗, Jorge M. Oliveira-Castro b, Teresa C. Schrezenmaier a

a Cardiff Business School, Cardiff University, Cardiff, UK
b Instituto de Psicologia, Universidade de Brasília, Brasília, DF, Brazil

Abstract

Purchasers of fast-moving consumer goods generally exhibit multi-brand choice, selecting apparently randomly among a small subset or “repertoire” of tried and trusted brands. Their behavior shows both matching and maximization, though it is not clear just what the majority of buyers are maximizing. Each brand attracts, however, a small percentage of consumers who are 100%-loyal to it during the period of observation. Some of these are exclusively buyers of premium-priced brands who are presumably maximizing informational reinforcement because their demand for the brand is relatively price-insensitive or inelastic. Others buy exclusively the cheapest brands available and can be assumed to maximize utilitarian reinforcement since their behavior is particularly price-sensitive or elastic. Between them are the majority of consumers whose multi-brand buying takes the form of selecting a mixture of economy- and premium-priced brands. Based on the analysis of buying patterns of 80 consumers for 9 product categories, the paper examines the continuum of consumers so defined and seeks to relate their buying behavior to the question of how and what consumers maximize.

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1. Introduction

Within marketing science, the analysis of brand choices for fast-moving consumer goods, based on aggregate data, shows that most individuals tend to purchase a variety of brands within a product category. More specifically, such results indicate that, in steady-state markets: (a) only a small portion of consumers buy just one brand on consecutive shopping occasions, that is, few consumers remain 100% loyal to one brand; (b) each brand attracts a small group of 100%-loyal consumers; (c) the majority of consumers buy several different brands, selected apparently randomly from a subset of existing brands; (d) existing brands usually differ widely with respect to penetration level and not so much in terms of average buying frequency (i.e., how often consumers buy it during the analysis period); and (e) brands with smaller penetration levels (or market shares) also tend to show smaller average buying frequency and smaller percentages of 100%-loyal consumers (i.e., “double jeopardy”). These results have been replicated for some 30 food and drink products (from cookies to beer), 20 cleaning and personal care products (from cosmetics to heavy cleaning liquids), gasoline, aviation fuel, automobiles, some medicines and pharmaceutical prescriptions, television channels and shows, shopping trips, store chains, individual stores, and attitudes toward brands (cf. Dall’Olmo Riley et al., 1997; Ehrenberg, 1972; Ehrenberg et al., 1990; Ehrenberg and Scriven, 1999; Goodhardt et al., 1984; Uncles et al., 1995).

∗ Corresponding author. Tel.: +44-2920-874-275.
E-mail address: foxallg@Cardiff.ac.uk (G.R. Foxall).
So sure are the relationships involved that a mathematical model has also been developed to describe such regularities, the Dirichlet Model (e.g., Ehrenberg et al., 1990), which has been used to predict the market insertion of new products (Ehrenberg, 1993), to analyze the effects of promotions (Ehrenberg et al., 1994), and to evaluate patterns of store loyalty (Ehrenberg and England, 1990; Keng and Ehrenberg, 1984; Sharp and Sharp, 1997; Uncles and Ehrenberg, 1990). Nonetheless, despite the wide replication of such patterns, which have been raised by some authors to the status of “empirical generalizations” in marketing (e.g., Uncles et al., 1995), little is known about the variables and the underlying behavioral mechanisms that influence and explain consumers’ brand choices. The marketing literature is not forthcoming, for instance, about the factors responsible for shaping the subset of the brands that compose a product category among which consumers choose in practice (their “consideration sets”) and what Ehrenberg calls the “repertoire” of such brands actually purchased (their “purchase sets”).

It is a basic axiom of modern marketing thought that sales are produced not simply by price acting alone, any more than by product attributes, or advertising and other promotional means, or distribution effectiveness acting singly, but by a combination of all four of these influences on demand that constitute the “marketing mix.” As marketing science has developed as a separate discipline, it has de-emphasized the influence of price on demand (the principal focus of the economist’s purview) and stressed the non-price elements of the marketing mix, notably the promotional activity involved in brand differentiation (De Chernatony and McDonald, 2003; Jary and Wileman, 1998; Watkins, 1986). Behavioral economics, partly because of the stress it has placed on the economics of animal responding in experimental situations, where the sole reliable analogue of the influences on consumer demand ruling in the market place relates to price, has necessarily followed the reasoning and methodology of the economist rather than the marketing scientist. The non-price marketing mix has, therefore, not featured in the research program of behavioral economics.

The assumption that consumers maximize utility in some way or other—a preoccupation of the economics approach—is, nevertheless, common in the marketing literature. Krishnamurti and Raj (1988), for example, state that “the consumer chooses that alternative which maximizes his (or her) utility,” although they recognize that this is a latent or unobservable utility which is assumed rather than tested (cf. Rachlin, 1980). Based on this maximization assumption, one could expect consumers to choose the cheapest brands that offer the attributes and characteristics that they are looking for. Although the price of different brands is certainly one variable that is expected to influence brand choice, as exemplified by the literature on the effects of promotions (e.g., Ehrenberg, 1986; Ehrenberg et al., 1994; Bell et al., 1999), empirical evidence showing that consumers tend to maximize when choosing across brands was not available before recent research on the behavioral economics of brand choice (Foxall and James, 2001, 2003; Foxall and Schrezenmaier, 2003). In this paper, we extend this research from the analysis of single cases to that of panel data for some 80 consumers purchasing 9 product categories, examining in detail the relationship between price and quantity demanded in relation to the functional and symbolic attributes of brands which influence the composition of consumers’ consideration and purchase sets.

1.1. Previous research

Foxall (1999a), Foxall and James (2001, 2003), and Foxall and Schrezenmaier (2003) adopted techniques refined in choice experiments in behavioral economics and behavior analysis to investigate brand choice. Three types of analysis were used: matching, relative demand, and maximization.

1.1.1. Matching analysis

The results of choice experiments with nonhuman animals in behavior analysis gave support for the development of the matching law, which in its simplest form asserts that organisms in choice situations match the relative distribution of responses to the relative distribution of the reinforcers they obtain (Herrnstein, 1961, 1970). In its more general form, the generalized matching law (Baum, 1974, 1979) states that the ratio of responses between two alternatives is a power function of the ratio of reinforcers, that is,

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\frac{R_1}{R_2} = b \left( \frac{R_1}{R_2} \right)^s
\]

(1)
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