AN ALTERNATIVE MODEL OF THE DIFFUSION CURVE FOR NEW PRODUCTS

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ABSTRACT

Whereas the conventional model explains the approximately normal distribution of time to adoption of a new product by consumers in terms of the unobserved higher-order construct “consumer innovativeness” (Rogers, 1965; Bass, 1969; Midgely & Dowling, 1978), this conceptual paper examines the diffusion curve phenomenon not from the viewpoint of what drives consumers to early adoption but rather from the viewpoint of what inhibits early adoption. Much effort has been expended by prior authors to measure consumer innovativeness and a variety of scales have been suggested to better capture the essence of innovativeness (e.g. Hurt et al., 1977; Mahajan et al., 1990; Goldsmith & Hofacker, 1991; Roehrich, 2004; Tellis et al., 2009). The ability of such measures to predict the time to adoption by particular consumers has unfortunately been generally poor (Roehrich, 2004; Tellis et al., 2009; Chao et al., 2012). Better prediction is critical for planning purposes, since firms must build a productive facility of sufficient size, raise adequate financial capital, and put in place appropriate distribution arrangements, to avoid the financial stress that is associated with under- or over-estimation of consumer demand for their new product. Several marketing scholars have recently called for “a new parsimonious measure of consumer innovativeness that can predict consumers’ adoption of new products” (Tellis et al., 2009:2); that “further research needs to be carried out to more fully assess what exactly drives adoption” (Peres et al. 2010:100); and Chao et al., (2012: 216) state “To effectively investigate individual adoption decisions, researchers should elaborate on the individuals-level models by separating the adoption process into a hierarchy of effects (awareness, consideration, liking, choice, purchase, and repeat purchase), integrating into each stage findings from behavioral studies.” This paper responds to these calls for individual-level research into the adoption decision by building an alternative model that reflects the observed diffusion curve phenomenon but does not rely on innovativeness to explain it. The model identifies six factors that constitute steps in the adoption-decision process through which the potential customer must progress before adopting the new product. The six discrete stages are dubbed awareness, appreciation, aversion, alternatives, affordability, and accessibility. As each impediment to adoption is overcome, the consumer moves forward towards purchase of the product and does so only when the six stages are completed. This schema allows marketing managers to focus on removing the impediments rather than attempting to measure or predict consumer innovativeness. ‘Awareness’ is defined here as the extent of knowledge that consumers have about the product, its purpose and manner of use, its quality attributes and differentiation, its price, place of sale, and so on. It is the converse of consumer ignorance as defined by Shepherd, Douglas & Shanley (2000). ‘Attraction’ refers to the potential customer’s initial positive feelings toward the new product or service as they adopt a promotional regulatory focus (Higgins, 1987, 1996; Shah & Higgins, 1997). As attraction builds the prospective consumer is hypothesized to then adopt a preventative regulatory focus and enter the ‘Aversion’ and ‘Alternatives’ stages. The first of these refers to the target customer’s quality-risk aversion, or their fear that the quality of the new product may fall short of claims made by the firm (Sweeney, Soutar & Johnson, 1999; Tellis et al., 2009; Peres et al., 2010). ‘Alternatives’ refers to the availability of other means to satisfy the customer’s needs or wants and includes consideration of switching costs associated with adoption of the new product, which include the extent of personal inventories of an alternative product currently held by the potential customer, and the investment of time, effort and costs required to convert to the new product, including learning costs (Klemperer, 1987; Burnham, Frels & Mahajan, 2003). Netting the disutility of the aversion and alternatives perceptions against the utility of the attraction stage, the consumer then decides to adopt or not adopt depending on the price of the new product (affordability) and the costs of accessing the vendor to effect the purchase (accessibility). The passage of time causes the decay of the inhibiting factors, such that in each discrete time period some number of potential customers will decide to purchase, since they are now more aware; more attracted; less quality-risk averse; alternatives are less satisfying; the product is more-affordable; and the new product is more accessible. The consumer makes the decision to purchase when the new product becomes the best value proposition taking into account these six factors. Each of the six impediments to adoption is likely to be unimodally distributed across the target market. It is hypothesized that when these six frequency distributions are summed vertically over time the aggregate distribution is approximately normally distributed around a mean time to adoption. Thus we contend that the frequency distribution of the time to adoption is alternatively explained by the sum of the frequency distributions of the six inhibitors to adoption and occurs as these inhibitors decay and prospective consumers cascade through the six stages and finally adopt the new product.