Consumer Satisfaction and Advertising Competition

Two important factors that affect consumers' purchase (and repurchase) decisions are usage experience and advertising. A substantial body of research finds that repurchase behavior is influenced by consumer satisfaction/dissatisfaction (e.g., LaBarbera and Mazursky 1983, Bolton 1998), i.e., consumers who have purchased the product and have had a satisfying experience may intend to repurchase the product, whereas those who have experienced dissatisfaction following a purchase would often switch to a competitive brand. However, these studies also suggest that satisfaction/dissatisfaction alone cannot fully explain consumer defection. Reichheld (1996) provides evidence indicating that 65 to 85 percent of defecting consumers do so despite being “satisfied” or “highly satisfied.” And the likelihood of defection is affected by “how much” consumers know about the available alternatives (Capraro, et al., 2003), for which advertising plays an indispensable role. Givon and Horsky (1990) note that the evolution of market share of a brand in a frequently purchased product category can be driven by two factors: purchase reinforcement effect and advertising carryover. The first depends on consumer’s experience with the brand while the second on the retention of its producer’s messages. These two factors and the resulting consumer repurchase/switching behavior largely affect a firm’s market share and profitability. Murphy and Murphy (2002) state that reducing a firm’s consumer defection rate by 5% can increase the firm’s profitability by 25% to 125%.

When firms’ advertising outlays and consumer satisfaction interact with each other, two nature questions arise. First, how does consumer satisfaction affect firms’ advertising competition, as well as the resulting market shares and profits? In particular, does higher consumer satisfaction always benefit a firm? Second, how do different reactions of consumers to satisfaction/dissatisfaction affect the market equilibrium? In this paper, we address these questions.

We consider a market with multiple firms, each of which sells one brand of a frequently purchased consumer good. In each period, the firms simultaneously decide how much to spend on advertising and then consumers choose which brand to purchase based on their utility that is determined by their past usage experience, i.e., satisfied or not, and advertising spending (Ads) of the firms. Consumer may or may not have a satisfying experience with the brand she purchased in the last period. We assume she is satisfied with a satisfaction probability (SP). There are two types of consumers in the market, which we refer to as (brand) “loyals” and (brand) “switchers”, respectively. The loyals react to the positive usage experience (satisfaction)–they repurchase the brand if they are satisfied; while if they are dissatisfied, they choose among all brands randomly with probabilities depending on their Ads (Schmalensee, 1978). In contrast, the switchers react to the negative usage experience (dissatisfaction)–they defect from the brand with which they are
dissatisfied and choose among other brands depending on the brands’ Ads; meanwhile when they are satisfied, they choose randomly among all brands according to their Ads. As seen, for the loyals, there is a positive purchase reinforcement effect, while for the switchers there is a negative purchase reinforcement effect. In the market, there is a proportion of consumers are the loyals while the rest are the switchers.

Our analysis starts with the symmetric market in which all brands have the same SP and profit margin. We characterize the long-term steady-state market equilibrium and obtain the equilibrium Ads of the firms. As expected, a higher profit margin leads to a higher equilibrium Ads because a higher profit margin means a higher return of advertising and thus the firms tend to spend more on it. Interestingly, a higher SP also results in a higher equilibrium Ads, which implies that a higher SP leads to a lower equilibrium profit of the firms because they equally share the market under the symmetric setting. The explanation is that in the symmetric market, the SP increases means that the SP of all brands increases simultaneously, therefore instead of benefiting each brand, it makes the competition more intense and all brands are worse off. More interestingly, when there are more switchers, the equilibrium Ads is lower, and thus the firms are more profitable. The underlying reason is that because of the positive purchase reinforcement effect of the loyals, the return of each firm by increasing the Ads is higher than that for the switchers, hence the intensity of advertising competition for the switchers is weaker. We also show that as the number of brands increases, the equilibrium Ads is first increasing and then decreasing because of the existence of the switchers, that is, when there are only loyals, the equilibrium Ads is always decreasing in the number of brands, the same as the benchmark case where there is no purchase reinforcement effect.

We then consider the asymmetric duopoly to investigate the impacts of brand asymmetry on the equilibrium outcomes. For the equilibrium Ads, we find that the ratio of the two brands’ Ads is equal to the ratio of their profit margins, meaning that the firm with a higher profit margin spends more on advertising. When the SP of the two brands are the same (but profit margins are still different), both firms’ Ads are increasing in their own profit margin; however, when the competitor’s profit margin increases, the firm increases its Ads only if its profit margin is higher than its competitor’s. Moreover, when the adjusted profit margins of the two brands are equal, if the SP of the brand with lower SP increases, both brands increase their Ads; however, when the SP of the brand with higher SP increases, if the proportion of the switchers is high, both brands’ Ads increase, otherwise both brands’ Ads decrease. Intuitively, how the equilibrium Ads is affected by the change of profit margins and SP is determined by how these changes affect the intensity of advertising competition. In particular, the intensity of the advertising competition is higher when two brands are more similar. Furthermore, different from the symmetric market, when two brands are distinct and one brand has higher enough SP than the other, the advertising competition for the loyals becomes less intense and can be weaker than that for the switchers, and thus both brands’ Ads decrease when the proportion of the loyals increases. We further show that the equilibrium profit of a firm is increasing in its own profit margin and decreasing in its competitor’s profit margin. Moreover, a firm’s profit is decreasing in its competitor’s SP. However, it is not necessarily true that its profit is increasing in its own SP. Specifically, if a firm’s SP is higher than a threshold and the proportion of the switchers is large, then the firm’s profit is decreasing in its own SP. And this threshold is increasing in the firm’s profit margin and decreasing in the competitor’s profit
margin and SP. That is, even if the competitor’s SP keeps unchanged, the firm may also be worse off when its own SP is improved. Intuitively, a higher SP enhances the intensity of the advertising competition for the switchers. When the firm’s profit margin is low or its competitor’s profit margin and SP are high, which implies that the firm is at the lower hand in the competition, the loss of the firm due to a more intense competition is greater than its gain from a lower negative purchase reinforcement effect when the proportion of the switchers is large. At last, we show that if one of the two brands is with sufficiently high SP, then the brand prefers more loyalists while the brand with lower SP prefers more switchers, which is different from the result under the symmetric market where the switchers are always preferred.

We extend our analysis to the case of two-period purchase reinforcement effect where consumers have a longer “memory” of their past experience with the product. For the symmetric market, we find that this longer purchase reinforcement effect weakens the intensity of advertising competition and results in lower equilibrium Ads. Nonetheless, the monotonicity of the equilibrium Ads over SP and the number of brands are the same as before qualitatively. For the asymmetric duopoly, we show that the intensity of advertising competition for the loyalists drops faster when the purchase reinforcement effect lasts longer. As a result, it is more likely that the advertising competition for the loyalists is weaker than that for the switchers. Compared the equilibrium profit with the previous case, if the two brands are similar, then both brands have higher profits; however, if the two brands are very distinct, then only the brand with higher consumer satisfaction has higher profit.

References


